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THE DEWEY PUBLISHING CO.
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Two Prominent Co-Operators.

The alert and cheerful visage which adorns this page is that of Mr. Edward F. Adams of Santa Cruz county, chief promoter and central figure in the new movement for co-operation in fruit-marketing in California. Owing to his connection with the successful co-operative work in Santa Clara county, Mr. Adams was made chairman of the Committee on State Fruit Exchange appointed by the Horticultural Society last October. By the preliminary organization, which succeeded to the duties of that committee, Mr. Adams was made manager of the project, and thus came about a connection with the movement which has made him pre-eminently its leader. It cannot be claimed for Mr. Adams that he is its originator—that honor belongs to Mr. A. P. Stanton, of Santa Cruz county—but he has been its most active spirit; and the plan of the projected exchange as accepted, approved and adopted by the Convention held in this city last week is the product of his constructive genius. Of its merits it is scarcely necessary to speak, after the action of the Convention in adopting it as the basis of the projected co-operative enterprise.

This plan is very largely an outgrowth of the experience of its author in the Santa Clara movement. Mr. Adams was attracted to that movement very early in its career, bore with Col. Hersey and others the labors of the "agitation" which preceded it, and was during the period of organization its active manager. The system of "bulletins" with which the public is familiar originated with him, and he was the author of all the bulletins issued by the exchange up to last October. His experience, therefore, in the work of co-operative organization—leaving the recent work for State organization out of account—has been practical and successful, a fact which gives assurance to those who, like the *RURAL*, expect the best results to follow the great project now in hand.

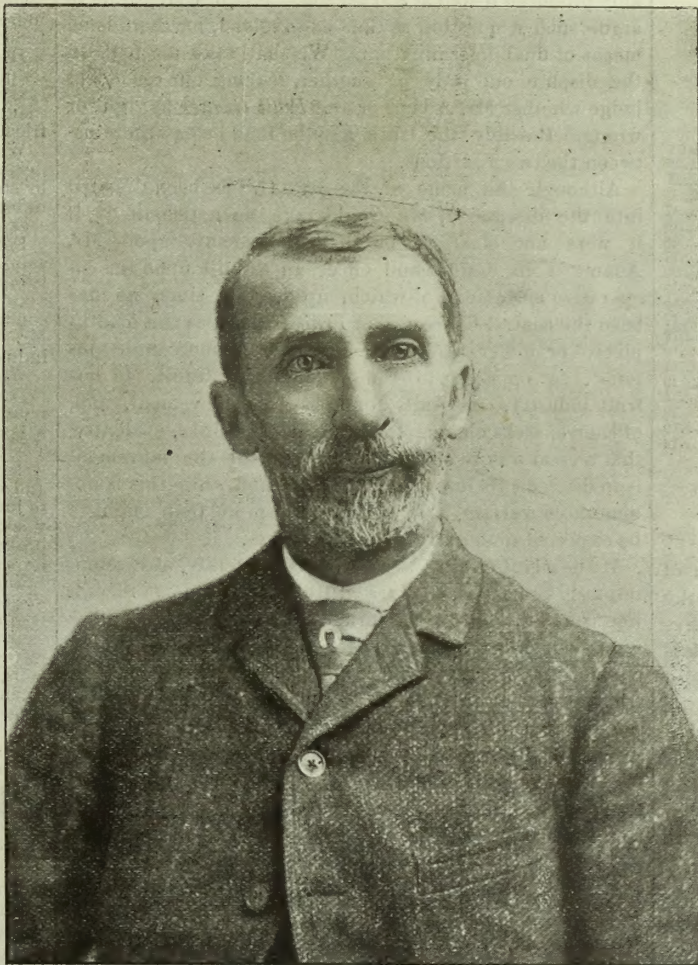
Mr. Adams is a practical fruit-grower and has no interest outside of fruit-growing. He lives in Santa Cruz county, just across the line from Santa Clara, four miles from Wright's Station, in one of the prettiest localities in the whole State of California. His homestead covers 120 acres, of which 30 acres are in trees. Here has been his home since 1881. He is about 50 years of age—possibly a little the rise of 50—and is a native of Maine. Before coming to California, some 15 years back, he spent several years in Chicago, where he was connected with large affairs, although never in anything allied to the fruit trade. That part of Mr. Adams' business training has been wholly in California and from the standpoint and in the interest of the producer.

We are not informed as to Mr. Adams' future relations to the newly organized movement. It is, we are told by the friend from whom we have gathered these general facts concerning him, his wish to devote himself strictly to his interests in Santa Cruz; but it is not to be expected that he will be allowed to do so. The movement which he has so admirably put upon its feet has the right to further service from him, and will, we believe, demand it.

Col. Philo Hersey, whose portrait appears on page 3, may fairly be styled the father of co-operation in Santa Clara county. He preached co-operation in fruit-selling before anybody save himself and Mr. F. M. Richter regarded it as practicable; and it was largely through his personal energies that the Santa Clara Fruit Exchange came into existence. From the beginning he has been its president and is now, as well, the manager of its operations in detail. The

story of the struggles of that organization and of its final and extraordinary success, are well told in the address given by Col. Hersey before the Convention in this city last week. We do not recall any former address before a meeting of California fruit-growers equal to that of Col. Hersey, either in the points of interest or instruction. It was given in the clear straight-forward style familiar to those who have heard Col. Hersey, and raised the Convention to something like the point of enthusiasm.

It was, of course, natural that Col. Hersey should be asked to contribute his experience to the directorate of the State Exchange, and the Convention very properly gave



MR. EDWARD F. ADAMS.

scant heed to his expressed desire to be excused upon the plea that already he was overloaded with duties. It was felt that some assistance at least from him was essential, and he was put on the list of directors in spite of his protests. We have no fear that he will fail to find time to give the State Exchange much that will be to its advantage.

Col. Hersey is a State-of-Maine man, and before he became a California fruit grower, some seven or eight years ago, was a lawyer. Before that he was a soldier, and, in the fields of our civil war, won the honorable military title which he bears. He is about fifty-five or fifty-six years of age. He displays the fruit-grower in his intelligence respecting California interests, the lawyer in his eloquent powers of statement, and the soldier in his erect and manly bearing. His home is about four miles out from the town of Santa Clara, on the main road leading to Saratoga. There he has an orchard of sixty-five acres, widely famed for the thoroughness of its culture and for its fruitfulness. No public enterprise in Santa Clara county is complete without Col. Hersey's assistance, and

no man gives time and energy to the public more freely. He is president of the board of trustees of the State Normal School at San Jose, Master of San Jose Grange, and active in every other project designed to promote the public interest.

QUITE a significant contrast is made of the sugar yield of sugar-beets, with and without irrigation. It is stated that at Alvarado (California) 4,480,000 pounds were produced from 20,400 tons of beets, being an average of 220 pounds per ton. The Lehi (Utah) refinery turned out 3,800,000 pounds from 27,000 tons of beets—140 pounds to the ton. The difference in the respective outputs is accounted for by the fact that at Lehi beets cannot be raised without irrigation, and a copious supply of water is not productive of saccharine, whereas at Alvarado irrigation is not required. The owners of the Alvarado mill think they have produced a greater percentage of sugar from the same quantity of beets than any other refinery in the country. Still it may possibly be true that the Utah beets turned out as they did because they were irrigated not wisely, but too well. We have much to learn on that subject.

EASTERN TURKEYS had better be kept at home. They have fared ill in San Francisco this year. On Sunday the market inspectors seized and confiscated over a ton of Eastern turkeys. The first seizure of importance was made from the Armour Packing Company, where 91 turkeys and 5 chickens were found in a bad condition. The inspectors also went to the Montgomery market and seized 1989 pounds of dressed turkey, which had been shipped here from Eastern points. The fowls were frozen in transit, and upon being thawed at this point they developed a decided taint, and became dangerous for food purposes. California turkeys should have control of this market, and a few more experiences like that of importers this year will be of advantage to our turkey growers.

WHAT might have resulted if all the packing companies which have been projected in California during the last few years had had more meat and less real-estate scheme in their plans can be seen by the way in which the pork supply has been whittled down by the buyers for Oudahy, of Los Angeles. Perhaps the side tracking of our packing enterprises have given Oudahy a clearer field for slaughtering and legitimate packing business, and yet it is clear enough theoretically that we should pack in this State vastly more meat products than we now do. So long as we import such products by train-loads, and local packing enterprises are chiefly in the business of packing town lots for credulous customers, there will be no such development of the California stock interests as there should be.

THE "INDEPENDENT STANDPOINT" has had to give way this week to a rush of co-operative news. The editor likes to have his say about things and naturally hates to find himself thus ruled out, but he takes comfort in the reflection that the address of Col. Hersey on co-operation and that of Gen. Chipman on the tariff, are infinitely better than anything he might have said. These addresses ought to be read by every fruit-grower in California, for they treat with special and practical intelligence of matters concerning which our people are profoundly interested. Don't fail to read them.

PACIFIC RURAL PRESS.

By THE DEWEY PUBLISHING CO.

Office, 220 Market St.: Elevator, 12 Front St., San Francisco, Cal.

ANNUAL SUBSCRIPTION RATE THREE DOLLARS a year. While this notice appears, all subscribers paying \$3 in advance will receive 15 months' (one year and 15 weeks) credit. For \$2 in advance, 10 months. For \$1 in advance, five months. Trial subscriptions for twelve weeks, paid in advance, each 50 cents.

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Any subscriber sending an inquiry on any subject to the RURAL PRESS, with a postage stamp, will receive a reply, either through the columns of the paper by personal letter. The answer will be given as promptly as practicable.

ALFRED HOLMAN.....Editor
J. F. HALLORAN.....General Manager
E. J. WICKSON.....Special Contributor

San Francisco, January 6, 1894.

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The Week.

The days are lengthening appreciably; the depth of winter has been sounded, and we shall soon reach the season of fruit blossoms. The rains of the past week have accomplished what was expected of them. Field work is being pushed in all parts of the State. Having passed New Year's without feeling the grasp of the sheriff on their collars, people are picking up courage and confidence, and probably before long we shall all wonder what we were frightened about. Certainly the general activity in the country is giving things a push in the city. Work is consumptive of implements and supplies, and to start work starts trade. The promise which now clearly favors more just and adequate facilities for marketing fruit will give confidence to those who have been planning to extend their orchard area this year, and the hosts of the new-comers will plant for home use and market. Our nurserymen and seedsmen are feeling the stronger circulation in the popular veins and are offering our readers their choice of a full list of desirable and promising varieties. Purchase and planting of trees should not be too long delayed. Order your stock early, get the land in the best possible condition and plant as soon as that state is reached.

It is a most excellent time to make improvements if one has the funds. Fine animals, fine tools, fine trees and all the materials for fine buildings were never cheaper than now. Wise expenditure for wise improvement is the wisest possible investment. A word to the wise is sufficient. Spend your money well now and you will be fixed to get more of it back again, while the man who waits until every one else does something will get his joints so dry that it will take a decade to limber them up. Do something now; don't rust out.

THE Midwinter Fair had its informal opening on New Year's Day. Its formal opening will come two or three weeks hence. Although the day was of uncertain weather nearly nine thousand people paid the entrance fee to the enclosure. The historic personage chiefly honored by the occasion was not Columbus, but Sir Francis Drake, who

visited California in 1579, and held services according to Church of England formulas at Point Reyes, in Marin county. There was unveiled a monument to Drake, which naturally took the form of a massive cross, as the moving spirit of the undertaking was Bishop Nichols of the Episcopal Church, and it was Drake's first holding of the Church of England services on American soil which won the old navigator his monument in these later days. The cost of the monument was borne by J. W. Childs, of Philadelphia, who some years ago taught Englishmen what to do for the memory of William Shakespeare. The ceremonies concerning the Drake monument were the central point of the opening day. The buildings of the Fair are now very far advanced—in fact, might almost be said to be completed, and the installation of exhibits is in rapid progress. It is well, on all accounts, that the grand opening should be about February. Our winter sunshine is all right, but it improves as the sun gets farther overhead. February will realize all that has been promised of sunshine and flowers, and other tourist-transporting materials.

The Co-operative Movement Assailed.

The nominal issue between Mr. Edward F. Adams, manager of the newly-organized Co-operative Fruit Exchange, and the *Fruit Grower* newspaper, is this: In a letter to the RURAL PRESS, printed two weeks ago, Mr. Adams declared that "outside of a few districts, but few orchards and vineyards in this State pay the living and working expenses of their owners and interest on capital invested." This statement the *Fruit Grower* denies and resents, claiming that the fruit-producers of the State are prosperous, and warmly supporting the assertion that "fruit may be profitably produced if sold at \$20 per ton." It is, of course, idle to argue such a question as the one involved, for there is no means of final determination. We shall take no part in the dispute one way or another, leaving our readers to judge whether Mr. Adams or the *Fruit Grower* be right or wrong. Possibly the truth may be found somewhere between the two assertions.

Although the name of the RURAL has been dragged into the discussion, we would take no notice of it if it were not clear to us that the assault upon Mr. Adams is in design and effect an assault upon the co-operative movement, of which, up to this time, he has been the central figure. The *Fruit Grower*, as the mouth-piece, promoter and defender of the mercantile interest, as opposed to the producing interest, in our fruit industry, naturally opposes this movement, and, of course, seeks chances to thwart it. It thinks, evidently, that a good way to strike at the heart of the movement is to discredit its foremost champion; and while this is not honorable warfare, it is, perhaps, not more than ought to be expected under all the circumstances.

If the *Fruit Grower* were seeking sincerely, as it ostentatiously proclaims, to "resent libelous statements regarding fruit-growers in California," it might, as Mr. Adams points out, have found a fairer mark in the resolution adopted at the Los Angeles convention, reciting that the fruit interest of California is in imminent danger of the same sort of disaster that has already overwhelmed other interests. But it cares nothing in fact for these assertions; it only seeks a pretext to "knife" what it calls Mr. Adams' "pet scheme of marketing fruits"—in other words, the co-operative proposition involved in the State Exchange project.

The Year's Produce Prices.

The produce market is the best agricultural barometer, and its records enable one to measure the depression of the year just closing. Such records are available in the December report of the statistician of the Department of Agriculture, which furnishes data for such comparisons as these:

The average price of wheat is 52.1 cents per bushel. The next lowest price in 23 years, from 1870 to 1893, inclusive, was 64.5 cents in 1884. The average for the ten years, 1880 to 1889, was 82.7, while for the three years, 1890 to 1892, it was 76.6. The decline from the average of the last three preceding years, in two of which, 1891 and 1892, occurred the largest yields in the history of the country, was 24.5 cents, or 32 per cent.

The returns make the general price per bushel of rye 51.8 cents, which is three cents lower than that of last year, and 5.2 cents lower than the average during the past decade.

The average farm price of oats, as returned for December, 1893, is 28.8 cents per bushel, which is 2.9 cents lower than last year, and 1.4 cents less than the average price during the past decade.

The average farm price of barley is the lowest on record, the price being reported at 40.6 cents against 47.2 a year ago, 54 cents in 1891, 64.8 in 1890, and 42.7 cents in 1889.

Assault upon the Co-operative Movement.

TO THE EDITOR:—On the first page of the current number of the *Fruit Grower* there is an article anent myself which I wish you would give the benefit of the wider circulation of the RURAL PRESS. There is also in the same paper another article on the same subject, from which I wish you would cut out the particularly disagreeable passages and also reprint.

My reason is that the *Fruit Grower*, being generally regarded as a representative of the trade rather than of the producer, does not, I think, reach a very large number of the latter class, and I want every orchardist in the State to see the earliest sample of the methods by which all further movements toward co-operation are to be fought. The sooner we learn to recognize the object of those who talk or write in this spirit, the better it will be for us.

EDWARD F. ADAMS.

P. S.—I have mailed the *Fruit Grower* some comments on its attack upon me, and enclose you a copy of the same.

THE "FRUIT GROWER'S" STRICTURES.

Following is the editorial in the *Fruit Grower* to which Mr. Adams refers, appearing under the head of "Mr. Adams' Unwarranted Statements:"

Elsewhere we notice at length the extraordinary communication of Mr. Edward F. Adams, printed last week in the *Pacific Rural Press*. As stated in another place, the denunciations of the fruit industries of California therein made are not based upon facts and figures presented, but upon the baldest assertions gratuitously dealing a slap in the face to the fruit-growers of this State which, we trust, they will have the courage and disposition to resent. Whatever be the motives prompting the onslaught, the RURAL PRESS and Mr. Adams have done the State of California an injury which the same agency is not likely to repair in many years. But aside from the injury to the State at large, caused by unjustly decrying its most promising industry, we cannot conceive that fruit producers generally will relish the statement that they are practically bankrupt, and merely waiting for the sheriff to come in and sell them out. But Mr. Adams adds insult to injury when he states that he believes "we have reached a point where growers can make more money by forcing the situation and seeking a remedy than by keeping still and trying to unload on the tenderfoot." Had such a statement been made by the bitterest enemy of California through the medium of a paper avowedly hostile to every interest in the State, it would be looked upon with amazement. How must it be regarded when made by supposed friends?

We protest against this broad accusation of fruit-growers as dishonest sharpers who, believing they can make more money by shouting the alarm than by "keeping still and trying to unload on the tenderfoot," propose to "force the situation and seek a remedy."

Force what situation and seek what remedy? Mr. Adams assumes that there is no money in the fruit business under existing conditions, yet assumes by inference that in organizing a State Fruit Exchange merely the remedy will be found. If the conditions are as he has alleged, no State Exchange, even with Mr. Adams as manager, could possibly revive so hopeless an industry.

We are charitable enough to believe that Mr. Adams simply meant to scare fruit-growers sufficiently to cause them to pronounce for the organization of the State Exchange in which he is specially interested; but we think he overdid the matter. The conditions remind us of the story of the old farmer who was breaking a colt, and told his boy to go behind the barn, and when the old gentleman rode the colt around the corner to jump out at him and say boo! The obedient son did as he was told, but the colt threw the old man over its head and broke his leg. The repentant boy protested that he only did as he was bidden; but the old gentleman slashed him with his riding whip, swearing that he had given "too d—d big a boo!" We fear this is the case with Mr. Adams. He has sought to lash fruit-growers into the traces by calling them paupers and sharpers; and unless we greatly mistake the temper of California's fruit-producers has thus defeated not only his own ends, but has done almost irreparable injury to the interest he ostensibly sought to serve. We believe the facts and figures presented elsewhere by us will prove conclusively to reasonable men that the statements and inferences contained in the RURAL PRESS are unwarranted and untrue.

Want of space forbids further discussion of the subject this week, but we give notice that we shall continue to resent such libelous statements regarding the great body of fruit-growers in California, and shall continue to demand that wholesale charges of trickery and pauperism shall at least be accompanied by some evidence other than naked and unjustified assertion.

The second article in the *Fruit Grower* to which Mr. Adams refers, is a long one in support of the assertion that "fruit may be profitably produced if sold at the rate of \$20 per ton." It is hardly necessary to reprint the statements in the *Fruit Grower* in maintenance of this claim. They are the familiar arguments of the commercial side of the fruit interest. Every practical fruit-grower knows them to be false. After running over all these familiar arguments the *Fruit Grower* concludes:

We can only deduce that Mr. Adams' pessimistic view of fruit culture in this State cannot be sustained by the facts. Mere assertion, however positive, proves nothing, and since Mr. Adams presents no figures whatever to sustain his naked allegations, we are forced to conclude that his article is rather a special plea for his pet scheme of marketing fruits than a clear and correct exposition of the actual conditions that obtain in the business of commercial fruit growing in California.

MR. ADAMS' REPLY.

Following is Mr. Adams' letter to the *Fruit Grower* in reply to the comments above, which we print at his request:

EDITOR FRUIT GROWER:—I am a good deal amused at the vigor with which you jump on me for printing my opinions as to the condition of the fruit trade in another journal whose editor thought them worth asking for.

The late convention of fruit-growers at Los Angeles—the highest authority on such matters which we can have in the State—unanimously passed the following resolution, which had been reported by a large committee, which carefully weighed not only the language of the resolution, but the expediency of its use:

"We are satisfied that the conditions which have already brought disaster on some branches of the fruit industry of California, will, if unchecked, speedily bring similar disaster upon all other branches."

In view of this sweeping declaration of the State convention of fruit-growers, it strikes me as funny that the *Fruit Grower*

should be able to work itself into such a paroxysm over the following comparatively mild "assertion" of myself who am a very small grower, and a wholly unimportant member of the great body:

"At present, outside of a few fortunate districts, but few orchards or vineyards in this State pay the living and working expenses of their owners, and interest on capital invested."

Now, the above, although in the form of an "assertion"—and it is the only "assertion" in the article—is upon the face of it only an expression of opinion, for obviously it can neither be proved or disproved, for which reason I will not discuss it. I am satisfied that it is true—and it is certainly far within the statement of the Los Angeles convention—but shall be delighted if it be an error.

Assuming it as true, I made certain inferences which its truth would justify. Some of these the *Fruit Grower* chooses to twist into certain unpleasant constructions which the text does not justify, and which, of course, I had not in mind, evidently for the purpose of exciting prejudice against myself, for what reason I do not know, as there has been no personal disagreement or ground for any.

But now comes the funny part: I am a farmer in a small way and have absolutely no other interest; I am in constant communication with other farmers and am pretty sure I know very well how they think and feel on these matters; but if I correctly understand the case the only connection which the proprietor of the *Fruit Grower* has ever had with agricultural affairs was formerly as a buyer of farm products and lately as a seller of a horticultural journal, and what is queer is that the *Fruit Grower* thus owned should assume to know better than we ourselves what our circumstances are and what is proper to be said about them; and especially that such temper should be shown about what, if you will excuse me, is none of the *Fruit Grower's* business. And even if it were borne in upon the *Fruit Grower* that it must lift up its voice and roll a burden off its soul, it would seem to have been more chivalrous, to say the least, to have attacked the Los Angeles Convention, which was the greater offender, instead of an unimportant and defenseless individual. And it is the more difficult to see why my little utterance should have put the *Fruit Grower* in such misery, because when I pick up, at random, the *Fruit Grower* of October 28th, last, I find the following:

"California should demand a tariff on foreign fruits on the sole ground of protecting from ruin a great and constantly growing American industry."

The practical issue under discussion being opposition to the proposed reduction of duty; if the above means anything it is that the proposed reduction of a cent a pound on our dried products will "ruin" us; which is, of course, not so far as the Los Angeles convention went, because they fear "disaster" under present conditions even; but much farther than I went, because my article which so worries the *Fruit Grower* was in the spirit of striving hopefully for better things by our own exertions, at the same time with no thought of ceasing to strive for the protection which we think we ought to have and still hope to get. No; how the *Fruit Grower*, after that editorial, can feel so about my article is certainly "one of the things that no fellow can find out."

But even conceding that it is really wicked for those of us who live by raising fruit, and feel that we have temporarily out run our market, to tell the truth about our business, that we may all "face the situation"—not "force" the situation, as the types made me say—and "seek a remedy," I still do not think that what I said, or even what the Los Angeles convention said, can possibly be half so injurious to our interests as will be the embarrassment of our advocates at Washington when they come to be confronted with the following, which the *Fruit Grower* of this week prints to refute something entirely foreign to anything I ever said. The *Fruit Grower* says, often giving certain figures:

"This would leave the shipper a net return of \$53.27 per ton for his entire shipment through the California Fruit Union, or more than two and one-half times the price which our foremost orchardist asserts is a profitable one at which to grow fruit in this State."

Now, although these figures are incorrect upon their face, even as to the instance given, and widely misleading as applied to the fruit industry at large, of which the Eastern deciduous fruit shipments are about, I think, one-tenth, I fear their publication by the *Fruit Grower* just at this juncture "will do the State of California an injury which the same agency is not likely to repair in many years."

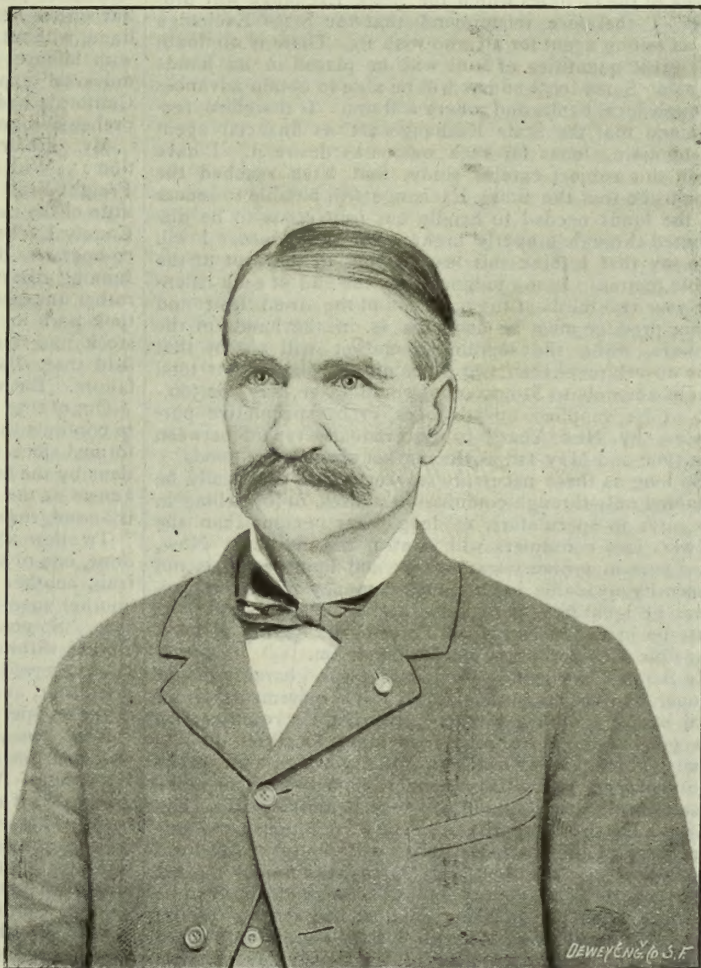
I have no occasion to refer to the "hope" expressed by the *Fruit Grower* that my brother fruit-growers will "resent" my expression of private opinion, or its expressed belief that they would repudiate any plans proposed by me for our self help merely because I proposed them. The expressions were not amiable, and, in the absence of other known motive, I fear must be credited to hostility to the movement with which I happen to have temporary connection, for the Fruit-Growers' Convention has decided all the other way, and even gone so far as to formally thank the State Horticultural Society for the work done—including my own—in behalf of a State Exchange; and this, by the way, upon motion of the only gentleman present who expressed dissent from my article, so that I must conclude that I still stand fairly well with my brother orchardists, and endure the displeasure of the *Fruit Grower* with such meekness as I may. My "schemes," if I ever had any, are mine no longer, for the fruit-growers of the State have accepted and assumed them, and, with such modifications as may seem best, will certainly carry them out through such "managers" or other agencies as their representatives, of which I am not one, deem best fitted for the purpose. I trust and believe that the outcome will be happy not only for the fruit-growers, but for those who wish to sell land to more fruit-growers, whose interests, I am sure, we conserve by all means that make fruit growing profitable, even if it involve the confession that temporarily we are in trouble.

With all the compliments of the season, and wishing the *Fruit Grower* good digestion and the repose of soul which waits thereon, I am respectfully,
EDWARD F. ADAMS.
Wrights, Jan. 1, 1894.

Mr. Gano Kennedy, who has recently visited Capay valley and Glenn county, tells us he has recently measured prune growths in those new fruit districts. In Capay he found 10½ feet, and in Elk creek region of Glenn county 12 feet, as the growth of a single year. The wood was of good diameter and well matured.

OUR European friends have dire apprehensions. It was cabled from London on New Year's Day that the *Agricultural Gazette* takes a gloomy view of the crop prospects for 1894 owing to the extraordinary mildness of the winter and the absence of snow, which promises badly. The specialist Ivanor Stonenkoff predicts widespread famine. Fortunately, California is having the best imaginable sort of a winter. Rains just right and plenty of them in most parts of the State. We can furnish Europe, in all probability, a large amount of breadstuffs. And talking of famine seems strange in this time of cheap food. If there be famine it will not be for lack of food but because people are too poor to buy at any price. There is apparently too much wheat in the world to make a scarcity possible by one year's poor crops in Europe. By the way, it is also cabled from Calcutta, that the wheat area of 1894 shows an increase of 6 per cent over that of 1893. Indications are favorable for a good crop. Thus Asia comforts Europe.

THERE has long been too great a speculative element in our fruit-growing and too many people who have no more knowledge of the business of producing fruit than they used to know of the mines in whose stocks they gambled.



COL. PHILO HERSEY.

Naturally, many of these will have to give way to other people who know how to handle fruit properties on a paying basis. But what sort of a case that is which is telegraphed from Los Angeles, in which a former real estate dealer of Los Angeles, now a fruit-raiser near that city, has failed for \$120,000, with assets of only \$8500, is hard to understand, except it be that he went into fruit on the same basis that he would have handled a subdivision scheme. That is the kind of fruit-growing which does California no good, and fortunately we have not very much of it. Distant readers of the telegram should not give it too much importance. It does not indicate that the fruit business of the State is inflated as the figures would indicate. It probably indicates merely that a real estate man's scheme to sell off improved land instead of wild land did not work as intended, and does not mean that the property is worth any less, necessarily, than people were willing to loan upon it.

AND NOW there is too much wine in France. The cable from Paris states that wine-producers in the south of France are so over-glutted with their products that they offer wine at 1 penny a quart, but fail to obtain that price. The splendid vintage has made wine a drug in the market. Three thousand wine-growers in Montpellier district are preparing a protest against merchants supplying the wine-shops of Paris with manufactured wine when the genuine article is so cheap. It is much the same there as in California. The world has too much wine, as well as too much wheat.

ORGANIZED CO-OPERATION.

The Mass Convention of Fruit-Growers a Pronounced Success.

THE STATE EXCHANGE PUT FAIRLY ON ITS FEET.

THE PLAN IDENTICAL WITH THE SANTA CLARA MOVEMENT.

Col. Philo Hersey Explains How Co-operation Works at San Jose—Gen. Chipman Hopeful for California Interests in Connection with the New Tariff—A Ringing Tariff Memorial to Congress Adopted—Full Report of the Convention.

The convention of fruit-growers held in this city on Friday of last week to forward the organization of a State Fruit Exchange was a large and dead-in-earnest assemblage. Its members came together under the inspiration of a definite necessity and for a definite purpose; and the proceedings were in the spirit of the meeting. The net result was the adoption of the work done up to date by the committee appointed at the San Jose meeting of the State Horticultural Society, the adoption of the plan of organization suggested by Mr. Adams and already given in the *RURAL*, and the organization of a permanent Board of Directors, instructed to carry the plan into execution. Preliminary arrangements for the creation of a marketing agency by the fruit-growers of the State, to be operated under their direction and in their interest, are now complete; and it only remains for the individual growers to give it a reasonable support. Thus far the plan relates only to the marketing of dried fruits and raisins, it having been determined, wisely, to attempt only one branch of the business at this time, leaving the future to expand the system to include fresh fruits, vineyard products, etc.

The convention was called to order by President B. M. Lelong, of the State Horticultural Society, who stated briefly the history of the movement. It had, he said, reached a point where it ought to be either adopted or rejected by the fruit-growers of the State at large, and to the convention as representing the wider interests involved the Horticultural Society now turned it over. It was his judgment that the movement was a necessity, and that the plan upon which it had proceeded, and upon which its projectors expected it to further proceed, was entirely practical. He hoped and believed that the convention would adopt the project and carry it into effect.

The convention then organized by the election of the following officers: President, John Markley of Sonoma; vice-president, A. T. Hatch of Solano; secretary, B. M. Lelong; assistant secretary, E. W. Maslin. The selection of Mr. Markley was especially appropriate in consideration of the fact that he had acted as chairman of the Preliminary Committee and was therefore fully informed as to the status of the movement and thoroughly in sympathy with it. In taking the chair, Mr. Markley asserted his profound belief in the practicability of the projected Fruit Exchange, and declared that the interest of the producers made it an absolute necessity. There were, he said, 200,000 acres in California planted to deciduous fruit trees. There were 80,000 acres in vines and 16,000 acres in nuts. These plantations represent an investment of \$60,000,000. Does anybody, he asked, doubt that the thrift and business skill which have created such a property are not qualified to administer it in their own interest? He believed that the fruit men were capable of making a practical and effective working organization, and that, when it was made, it would be an infinite blessing to the prosperity of the State.

The roll of counties being called, it was found that twenty-seven were represented as follows:

Alameda—Joseph Shinn, H. J. Tilden, John J. Hayes, Joseph Tyson, W. W. Chamberlain, E. E. Potter, T. P. Carey, John Black, J. L. Lyon, H. A. Hughson, Giles Chittenden, N. Overacker Jr.

Butte—Eben Boalt, G. M. Gray, C. H. Leggett.

Colusa—A. S. McWilliams, F. W. Willis.

Contra Costa—B. H. Upham, David Bush, A. L. Bancroft, Charles J. Wood, John Swett, H. M. Bush, W. H. Whitman, William Caven, F. W. Johnson, Charles F. Wood, R. O. Baldwin, M. S. Stone, H. E. Raap, J. C. Burgess.

Fresno—D. T. Fowler, L. Braverman, A. Gordon, Charles G. Bonner, A. Barrieau, C. H. Morris, W. H. Hodgkins, Charles G. Bowham, Mrs. L. H. Hatch, Miss F. A. Deane, S. G. Nye, E. Gartenlaub, W. M. Williams.

Kern—D. M. Pyle, T. E. Wright.

Kings—W. S. Porter, John Waswick, N. W. Morrow, Timothy Paige.

Merced—E. R. Gurd.

Mendocino—R. McGarvey.

Monterey—A. Berwick, J. R. Hebborn, O. H. Shoeherd.

Napa—O. E. Moore, Drury Melone, Leonard Coates, J.

W. Reeves, W. H. Evans, E. Yates, J. W. Lees.
 Nevada—S. L. Richards, John T. Rodda.
 Placer—W. J. McCann, P. W. Butler, E. O. Smith, J. Parker Whitney, J. C. Young, E. W. Maslin.
 Sacramento—Robert Williamson, T. Deming.
 San Benito—O. H. Bramlet.
 San Francisco—B. F. Rowley, F. N. Woods, H. E. Bullock, B. M. Lelong, E. E. Potter, Alfred Holman, S. J. Stabler.
 San Mateo—T. H. Ramsay.
 Santa Clara—D. A. Wheeler, C. H. Allen, A. H. Merrill, R. P. McGlincey, John Rock, A. L. Sovey, Mrs. E. A. Butcher, James E. Gordon, W. H. Wright, F. M. Farwell, W. S. Edwards, C. M. Braun, Philo Hersey, R. W. Herstell.
 Santa Cruz—W. H. Aiken, Edwin F. Adams, William E. Emery, C. Spreckelson.
 Shasta—Daniel Bass, W. Frier.
 Solano—A. T. Hatch, W. J. Dobbins, J. A. Webster, W. C. Montgomery, R. A. Campbell, C. C. Ager, T. J. Mize, A. A. Hyatt, A. Bowman.
 Sonoma—G. N. Whitaker, Jonathan Roberts, L. J. Gilman, E. Hart, E. W. Devereaux, W. D. Davis, E. D. Sweetzer, W. H. Harris, S. A. Seary, W. N. Gladden, A. G. Lee, George D. Dorim, Otto N. Partridge, Charles H. Dwinelle, W. C. Parker.
 Sutter—B. F. Walton, R. C. Kells, E. B. Starr, J. J. Pratt, H. B. Stabler.
 Tehama—N. P. Chipman.
 Tulare—J. H. Morton, A. H. Chapin, J. M. Alexander, Frank Chapin, I. H. Thomas.
 Yolo—M. Kahn, William Sims, H. C. Howard.
 State Board of Trade—Eugene J. Gregory, E. W. Maslin, N. P. Chipman.
 The following committees were appointed: Finance—Robert Williamson of Sacramento, W. A. Gordon of Fresno and A. L. Bancroft of Contra Costa.
 Committee on resolutions: H. B. Stabler of Sutter, N. W. Motheral of Kings, N. W. Gladden of Sonoma, P. W. Butler of Placer, and E. A. Wheeler of Santa Clara.

MANAGER ADAMS' REPORT.

He Outlines What Can and What Cannot Be Done.
 Careful Plan of Organization.

The first direct business of the meeting was the reading of a report made by Mr. E. F. Adams, manager, to the Preliminary Committee. It has already been given in the *RURAL*, but we reprint it as essential to the completion of the report of the convention. It was received with universal commendation and made the basis of resolutions adopted by the meeting, expressing its views as to the scope of the exchange and as to the plans upon which it should proceed. Mr. Adams' report was as follows:

SAN FRANCISCO, Dec. 22, 1893.

Mr. John Markley, President California Fruit Exchange—SIR: Since assuming the duties of Manager on Nov. 16th, I have devoted my entire time to the organization of the Exchange, with such results as may appear hereafter.

I have to report that great interest in our movement has been expressed by growers in all parts of the State, who seem almost without exception ready to support any well-considered effort to remove existing abuses in the fruit trade.

In my opinion, our measure of success in the present movement will be that of our good fortune in securing able and earnest men to serve as directors. They must be fruit-growers or they will have no interest in the matter. They must not themselves be buyers or their interest will be adverse. They must have had experience in business affairs or they will not know how to act. Many of our successful business men have large interests in fruit, and many who are now growers only have had large business experience. Among them there is abundant ability available.

Such a Board of Directors will be the best judges of how far and how fast we can go. Certainly we cannot do everything at once. Having a clearly defined policy they will have no trouble in securing effective executive officers to carry it out, and with a wise policy and vigorous execution there is no fear of lack of support by growers. I think my experience qualifies me to say so much unreservedly. Growers desire above all things honest and able assistance in marketing. If they ever fail to support any co-operative movement it is because they doubt either the honesty or ability of its administration. There is absolutely nothing beyond this in the common notion that "farmers will not hang together."

It may be proper that I give my individual opinion of the proper functions of a State Exchange. The ultimate character of public institutions like this must be a matter of growth, but I think fruit-growers can do the following things for themselves from the start:

They can ascertain the condition of the markets and the value of their crops.

They can explore and open up new markets and stimulate old ones.

They can procure their own funds for necessary advances on crops, while retaining their sale in their own hands.

They can concentrate, grade and prepare their products for their final market.

Between our fruit thus concentrated and in store in California and the jobbing houses in distant cities, there must, for the present, be a go-between of some kind. Nothing but substantial uniformity of grading and packing, accompanied with clear definition of grades, certainty that goods delivered will conform to them, and absence of severe competition, will enable us to escape this expense; whenever we have learned to produce those conditions the mail and the wire will be all the middle servants needed.

That at present necessary go-between may be with:

1. The jobber's agent, residing here and inspecting, buying and paying on the spot in behalf of his principal. This form is, of course, what we would wish.

2. Our own agents, upon salary and expenses, travel-

ing among jobbers and making sales. If, however, we take our business from the brokers who now have it, they will all work foreign goods instead, and it becomes a mere question of dollars and cents whether we can get men who will sell our entire crop each year, against the competition of those who now sell it, at an aggregate expense below the aggregate of commissions which we could arrange for through brokers.

3. Brokers selling upon uniform commission at prices set by ourselves, the goods remaining in California until sold.

What methods to adopt may safely be left to the judgment of directors, but my own view is that our policy should be that which will induce the largest possible number of people to engage in finding customers to consume our fruit products, and that it should be known of all men that whoever will bring us a customer shall be paid for it, at a uniform rate.

Dried fruit can be concentrated, graded and packed by growers through local co-operative unions, and in no other way. In no other way, also, can it be put where the grower can obtain necessary advances upon it without parting with control of its sale.

I therefore think that the Exchange should actively promote the formation of such unions throughout the State, upon substantially uniform plans which shall provide for a uniform system of grading and packing, and for such inspection on the part of the State Exchange as may be found necessary to maintain uniformity.

Some local unions will prefer to sell their own fruit. Others, and most individuals, will desire to avail themselves of the facilities which the State Exchange will provide. I therefore recommend that the State Exchange act as selling agent for all who wish it. There is no doubt that great quantities of fruit will be placed in its hands for sale. Some local unions will be able to obtain advances through local banks and others will not. I therefore recommend that the State Exchange act as financial agent for obtaining loans for such unions as desire it. I have given this subject careful study, and have reached the conclusion that the State Exchange will be able to secure all the funds needed to handle our fruit crops to be distributed through properly organized local unions. I will also say that I think this feature goes to the root of the whole matter. In my judgment, by the end of each calendar year two-thirds of the proceeds of the dried fruit and raisin product must be and now is in the hands of the growers, while the legitimate market will not by that time absorb more than two-fifths of it, which, if our total output amounts to \$10,000,000, would leave, say, \$2,500,000 to be supplied on advances, or by speculative purchases, by New Years, to be gradually repaid between that time and May 1st, as the market absorbs the goods.

So long as these necessary advances can practically be obtained only through commission houses, or by selling at low rates to speculators, so long other persons than the growers and consumers will control the market. Now, dried fruit in ordinary warehouses and uninspected is not a security available in the general money market on account of ignorance of its value and liability to spoil. It must be in expert hands guaranteeing its quality and responsible for its delivery in that condition.

In Santa Clara county we find that the guaranty of our co-operative societies answers all the requirements of our local banks, and that to the extent of their resources we can get funds on fruit. But in many localities the demands for advances, even in ordinary years, outrun the ability of the local banks, and it is necessary to make these securities available in the general market. This can be done by fulfilling the necessary conditions, and one chief duty of the State Exchange will be to teach local unions how to place their fruit so that the money market will recognize it as security, and to arrange for funds to be advanced upon it. It is my opinion, fortified by that of many able bankers with whom I have conversed, that a large part, if not the majority, of the money advanced on fruit by commission houses is simply the proceeds of other consigned fruit sold, but upon which returns are delayed to give the commission house the use thereof from 15 to 60 days. Whether this be true or not, what we need most is financial independence, which can only come through co-operation.

In establishing an Exchange the first thing is to provide for its support. In my opinion the Exchange can earn from and will be cheerfully paid by all local co-operative associations and large shippers, one-half of one per cent on their sales for general services on the lines laid down above. Those actually selling through the Exchange will of course pay an additional charge for such service. There are enough local organizations alone already existing to support an Exchange on that basis. With moderate success in forming new ones the charge to all will be much less than one half of one per cent of their own sales; but I think the contracts should be for one-half of one per cent, or so much thereof as is necessary.

But the same organization, without any corresponding increase of expense, can act as selling agent for as many as desire it, charging therefore the additional cost.

A certain but not very large amount of capital is absolutely necessary, and the first step is to secure this. In my opinion \$20,000 will be ample. I think we should attempt no other work until \$10,000 is subscribed, and that when that is subscribed we proceed with the work of general organization, getting what more capital we need as we go on.

In regard to the uses for capital, I may say that a certain amount may be used for expenses of organization between now and say July 1st. This, in my opinion, should finally be restored to capital stock by a trifling special charge on the business, above actual cost, continued until the whole amount is restored. A certain amount will be necessary for use in case of temporary deficiency of revenue, to be, of course, repaid as revenue accrues. The remainder is needed for the purchase of sacks and any other material required, to be collected again from unions and individuals consuming the material, at such an advance as will pay the interest on capital employed. Respectfully submitted,

EDWARD F. ADAMS, Manager.

With this report of the Manager, President Markley submitted, on behalf of himself and his associates of the Preliminary Board, a scheme of organization reciting (1) that co-operative organization was absolutely essential to the prosperity of California fruit-growers; (2) that practical co-operation can be attained through the agency of a State Exchange; (3) that to be effective the Exchange must have adequate financial support; (4) recommending organization with a capital stock of \$200,000 divided into 20,000 shares; (5) recommending the choice of 11 persons to serve as a Board of Directors of the projected Exchange; (6) and reciting the charges of preliminary work up to date. This report was, after discussion, adopted, and, together with the recommendations of Manager Adams, made the basis of organization.

THE SAN JOSE EXCHANGE.

President Philo Hersey Tells How It Was Organized, How Managed, and How and What It Has Accomplished.

As everybody knows, the movement for a State Exchange grew out of the example set by the people of Santa Clara county in their local Exchange at San Jose. With the view of getting full and authoritative information respecting the Santa Clara Exchange for the instruction of the convention, President Hersey, of San Jose, was called upon to address the meeting. He had been informed beforehand that he would be expected to speak, and therefore came prepared, not with a set speech in written form, but with a head full of facts and figures. He spoke off-hand, without notes, in a conversational way, and was heard with intense interest from beginning to close. It was the universal expression that no assembly of fruit-growers in California had ever listened to an address at once so comprehensive, so clear and so practical. Col. Hersey said:

Mr. Chairman and Gentlemen of the Convention: With regard to the establishment of a State Freight Fruit Exchange, you want from me, possibly, a little of the experience I have had in helping to form a County Exchange. Three years ago we formed a little co-operative drying association in our county, that after running one or two years found itself in a state of success rather unexpectedly, not only unexpectedly to those who took part in it, but also to those who have subscribed stock and to those who have stood on the outside and said that, like all farmers' institutions, it would be a failure. But we found it a success.

Out of that a spirit arose among the people of our county to continue the work in this same line, and there has been formed since then four other co-operative drying institutions by the farmers in different sections, and also what is known as the Santa Clara County Fruit Exchange, which is an outgrowth, also, of the spirit of co-operation.

To show what those co-operative drying institutions have done, one of these associations received 3600 tons of green fruit, another one has received 3500 tons of green fruit, another 2900 tons, another 2300 tons and another one 1700 tons. So you see that they have got out of their swaddling clothes within the first year of their experience, and they have received large quantities of fruit, converted it into dried fruit, and have mainly marketed it to the advantage of the co-operative dryers.

Now, two years ago last spring, we had a meeting that was instrumental in forming the Santa Clara County Fruit Exchange. After a year's struggle it found itself in a condition that it was impossible for it to proceed and do business. This was in the year 1892 and it did nothing. We took it up a year ago last November and carried it forward, by way of getting stock subscriptions, so that at the beginning of the year, in May, we felt sure that it was proper to go ahead, and we started in to make the necessary preparation for the transaction of business. Fearing that I may forget some of the figures, I have brought them along with me to show what we have done. I want to say that we are extremely modest in our figures. We handle only a small part of the fruit grown down there.

The action taken on the part of that Exchange has caused the concentration, for the purposes of sale, of 8,500,000 pounds of fruit; it has received and has on hand 3,317,322 pounds; it has sold 5,533,336 pounds, and it has on hand now about 70 carloads, which is about one-fourth of this amount, which is on the market for the second sale, commencing the middle of January to the middle of March.

Now, we had about \$7000 or \$8000 of stock that had been paid for, and out of that, as a basis of business, we have erected a plant that cost \$19,000. Our people were extremely poor in purse. They had land, and energy and good will, and all of that in abundance. They were wealthy in those things, but they were poor in purse, and they could not, last spring, pay for their stock. When we started out to buy our land and erect our buildings at a cost of \$20,000, we started with \$7,000 paid subscriptions, but we had promises that they would come forward with their fruit and meet the payments. We went ahead, and with a little coaxing on the part of the material men and by cash payments for labor, we succeeded in getting ready for the receiving of fruit in July.

MR. ADAMS:—Don't let them misunderstand—the stock was subscribed.

MR. HERSEY:—I understand, the whole stock was subscribed, but the subscribers could not pay for only \$7000 of it at that time. We had our building completed and commenced to receive fruit in July. We had partial promises of money, not knowing what was to be the result in the financial centers at the time we should need money—we had partially promised to make advances of from 25 to 75 per cent of the amount of fruit a man delivered, immediately on the delivery. At the same time, we told them we would like them to be as lenient as possible. I made an arrangement with the bank to borrow from them \$25,000 in amounts as it was needed. I made the arrangement four or five weeks in advance of the time it was needed, but about ten days before it was necessary to have a dollar—our circumstances

(Continued on page 7.)

HORTICULTURE.

Coffee-Growing in Central America.

Many Californians love to discuss coffee growing, although it must be admitted that experiments thus far pursued indicate that there are very few places in California where the plant will thrive. At a recent meeting of the Indiana Horticultural Society, Mr. Sedgwick spoke very interestingly of coffee growing in Central America. He said that this subject was one of interest to Americans for the reason that the locality in question was being developed very rapidly as a coffee-growing region, and he thought it was destined ultimately to become a part of the United States. Those nations are looking to the time when they will have to cast in their lot with some of the neighboring nations. Nicaragua, Costa Rica and Guatemala will, without doubt, cast in their lot with the United States. Yucatan is expected to side toward England, on account of the great predominance there of English interests. As to the growing of coffee, it requires a soil from 12 to 18 inches in depth. This soil is composed of very fine earth. Before the land is cleared for the coffee plantation, it is covered with from 50 to 70 different kinds of wood, and the forests are thicker and more dense than any in the United States. Besides that, nearly every tree has a vine growing around it, and some of the trees have two or three vines. Some trees have as many as a dozen. These vines climb the trees and then reach down their long tendrils to the ground, and other vines spring up and twine around them. This process continues till the forest is one close, dense mass of trees and interwoven vines and branches, and a man cannot be seen 20 feet away. You would naturally think that a man could not go into it and do anything. The natives, however, know how to manage it. They have tools constructed for the purpose, and with them they go into these jungles and cut down everything of more than six inches in diameter, with the exception of about 20 trees to the acre, and these are left for a shade to the coffee plantation. The coffee tree must be shaded, for it is an undergrowth. Now, when the trees and vines are all cut down, the natives begin to prepare the coffee for planting. He takes the seed in the cherry form, before the hull has been taken off. They plant the seeds in a seed-bed in March or April, or early in May. They will make from two to eight leaves by the first of August. These seedlings are then transplanted to an open space and left to grow for three or four months, or sometimes a year. These plants are then set out in holes dug in the ground that has been chopped over the previous year. The following year they go over the ground and cut off the vines near the ground and push the rubbish back from each side of the holes. The trees and rubbish of vines are left on the ground. There is no burning or anything of that kind. The coffee tree is slow in its growth. It is not a fast-growing tree as to the trunk. The leaf is green and is nearly the shape of our beach leaf, but is brighter, like the holly.

The berries grow in little clusters in the axle of the leaf. The blossoms come along in April and May and have a sweet perfume. Then the berry begins to grow. When the berries are ripe they are picked off by hand. They are then taken to what is called the "pulper," where they have the hull rubbed off. This takes off the outside pulp. The quality of coffee is governed largely by the locality in which it is grown. That produced on the highlands is of the best quality, and that grown near the sea level the poorest. Coffee will grow on the lowlands, but is not the best. Then there are different varieties of coffee. One variety has but a single grain in a berry, and this is known as the pea berry. There is another thing that is not known by the people of this country, and that is that the same seed that produces Java coffee in the island of Java produces the Rio coffee in Brazil; and the same berry that produces a poor berry on the lowlands produces a good, rich berry on the highlands. We sometimes think we drink a good deal of Java coffee. The consumption of coffee last year in this country was 617,000,000 pounds. The whole crop of Java last year was only 12,000,000 pounds, and the amount imported into this country was less than 1,000,000 pounds; so you see very few people get real Java coffee. The coffee laborer is paid in silver. At the present time a gold dollar of the United States is worth about \$1.80 in Central American silver money. Laborers get 50 cents a day in their money or about 27 cents in ours. The cost of producing coffee is about 4½ cents in silver or 2½ cents in gold. That same coffee sells in their markets at 23 cents per pound in gold, or 35 cents in silver. There is, of course, a very large profit in it. The condition of labor there is somewhat similar to that in our Southern States. The people do not know the value of money. When they have worked a few days and accumulated a small sum, they will stop work and remain idle till the money is expended.

A tree begins to bear at about three years of age. At that age the yield is about half a pound per tree. In the sixth year they yield their best, which is two and a half to three pounds per tree on an average. A tree will bear for about 20 years, and there are some known to be 40 years old.

About 450 trees are planted to the acre. We count about 400 to the acre. A good yield of coffee is reckoned at from 600 to 1500 pounds, but some growers get as high as 2000 pounds per acre. The poorer coffee, grown on low grounds, sells at from 10 to 12 cents per pound in the home market there.

Packing Apples for Export.

As we are sending some apples every year across the Pacific it may be interesting to our apple-growers to read of the method of handling which the Tasmanian apple-growers use in their shipments to the English markets. The following is from the journal of the Tasmanian Council of

Agriculture, and is written by Clement Johnson of Macquarie Plains:

Every possible care must be exercised in picking apples, or any other fruit, but as apples have to be dealt with more than any other fruit for the English market I will confine my attention to them. In my humble opinion it is here that the greater amount of damage is done. Fruit-growers are not particular enough in picking. A bruise on an apple, be it ever so small, will cause the apple to rot. The stems must be left on the apple, say about one-quarter of an inch in length. Under no circumstances should they be pulled off roughly, because the stem in coming out pulls a piece of the apple with it, and the apple is then worse than a bruised one. Such fruit should not under any circumstances be allowed to find a place among sound fruit, because it cannot be expected to travel to England and arrive in good condition. For that reason it is of very great importance to have nothing but good, careful and experienced packers. The apple should not be allowed to drop into the basket, or whatever the receptacle may be, but should be placed there carefully by the hand as if it was an egg. If the pickers would always think that they were picking eggs instead of fruit, and handle them accordingly, it would be a great advantage, for it is not only the apple that drops that gets bruised, but it bruises several more in its fall. A careless picker is a dear individual at any price, and should not be allowed in the orchard. Children as a rule are bad pickers, but I consider that conditions being equal men are as good pickers as women, and in many instances better, especially for topping.

Grading.—Nothing in the way of grading machines that I have seen equals the human hand. The apples should be spread out on an ordinary sorting table very carefully. After some practice there should be no difficulty for a practical hand and eye to select the right size of apples at a glance. Any apple about which he has any doubt should be measured with the usual ring, but it should be done well and accurately.

Wrapping.—Experience has taught us that the best wrapping paper is the proper paper to use. The apple should be placed with the eye downward in the center of the paper, so as to enable the wrapper to close it around the stem, and give it a twist to help to prevent the paper from undoing itself again, and place the apple either in the case directly or for the packer if one be employed.

Packing.—This should be done very carefully because very much depends upon it. If the fruit is packed too tight it will bruise, if too loose it will shift in the case during transit and get bruised by contact with case and fruit. For this reason I prefer to pack from the side of the case because there is a wider surface to work upon and less depth. The only objection to this mode of packing is that it is more difficult to nail down a case with its side open, and very few can nail down a case properly this way, therefore if we have careful packers there can be no great objection to packing a case from bottom to top. When the case is packed the top layer should be about half an inch above the edge of the case and should be absolutely level on top, because if one is higher than the rest that one will have extra pressure from the lid, get bruised and cause decay of the whole case. The fruit should be pressed down by a well-padded board, enough to allow the lid to go on comfortably, or rather in such a way that it holds the apples firm and not too firm; it is rather difficult to express on paper, though proficiency can only be gained by practice. I think it is a matter of opinion whether the packing should be a separate process or be done by the wrapper. If a wrapper is also a good packer it will be found that apples get packed best by him because he puts down every apple in its place as he wraps; besides, there is no danger of the paper coming undone, which it very often does when the apple is handled by a special packer, and it is once less handling the apple, which is a consideration. A wrapper will, after a little practice, place the fruit just as quickly as he would place it anywhere else, and thus save the time and expense of special packers.

Carting.—Some people seem to think, judging by the way they knock fruit about during transit, that after it is well it can stand any amount of thumping about, but it is a mistake; it should always be handled as carefully as possible; it should never for a moment be forgotten that we are handling fruit that has to travel thousands of miles.

TRACK AND FARM.

Nancy Hanks May Race No More.

Nancy Hanks, the peerless little queen of the track, is to become domestic and will not be seen, for some seasons at least, on the track. She is at home quietly domiciled upon the farm of her owner, J. Malcolm Forbes, of Boston. When asked as to the truth of the rumor that the little Nancy would be seen no more on the course, Mr. Forbes said: "It is true that I have decided, for the present, at least, to withdraw her from the turf. She may, perhaps, never return, but that is not yet fully determined. The mare will not, however, be seen before the public on the track the coming season at any rate. There are several reasons which influence me. In the first place, Mr. Doble's illness has interfered materially with the mare's engagements the past season. He has been so ill as to require being lifted in and out of the sulky, and that, together with the weather, has made it rather an unlucky season all around. Then again I did not want her to continue on the track until all her muscles were let down, as you might say, because there is more money in obtaining colts while the dam is still in full possession of all her power than in racing her upon the track."

"I think that the great mistake with most breeders has been that they have waited until the dams have been raced for all the speed there was in them before withdrawing them for breeding purposes, and therein lies in a great de-

gree the deterioration of their progeny. I did not wish to keep Nancy Hanks upon the track until she was all dredged out, so to speak. There is much more to be gained by withdrawing her now and raising her colts than there is to continue her in the races."

"She leaves the track in the full possession of her vigor and in excellent condition. She will be in much better condition after having several colts and receiving the rest that her withdrawal will give her than she would be to put her right on again at the opening of another season."

"You mean to say that she would still be in good condition to race again if it should be deemed a good thing to enter her on the circuit?"

"Yes, I mean exactly that," said Mr. Forbes.

"So that the public may infer that you have not yet made up your mind to withdraw her permanently?"

"She may go on again in the future," replied Mr. Forbes. "I might find that it would be a good thing to enter her again for the races and in that case I should do so. That is all I can say at present. Nancy Hanks is withdrawn from the turf for next season and possibly for some time to come. What I may do after that will depend wholly upon circumstances as they present themselves."

It is understood that in the spring Nancy Hanks will be bred to Arion. The mare has never lost a race, as was erroneously stated in a press dispatch the other day. She lost the first heat in her maiden race to Bonnie Wilmore, but from that on she never has been headed to the wire by any adversary. Her three-year-old record of 2:24½ gave way to a four-year-old record of 2:14½, a five-year-old record of 2:09, and a six-year-old record of 2:04. During the season just closed she was for the first time defeated, but by herself alone, and the terrific strain of an unequalled series of miles at last found her out, and she was unable to reduce her record of 2:04, her mile at Indianapolis in 2:04¾ being the best of the year. Of her public heats 64 were trotted in 2:30, of which 31 were below 2:15, and 18 below 2:10. Her fastest mile, 2:04 was at Terre Haute, her fastest quarter :29¾, the third quarter of a mile at Independence, and at Sedalia she trotted the first half in 1:01. At Nashville she trotted the middle half in 1:01¾; at Terre Haute she finished the last half in 1:01¾; her best quarter, :30, was recorded at both Independence and Sedalia, best second quarter, :31, at both these places, and at Nashville and at Boston and Chicago this year. At New Albany she trotted a last quarter in exactly :30. Her winnings, exclusive of several purses for exhibitions in 1891, for which no figures are quoted, reach \$61,954. The announcement thus made will have a deep interest for turfmen.

POULTRY YARD.

Crossbred Fowls on the Farm.

There is little doubt that the quality of domestic animals is injured by too close of kin breeding. Great improvement is often made by judicious crossing with other breeds. A writer in the *American Agriculturist* says upon this subject of crossing poultry that the farmer's ideal fowl must be a hardy bird. It must be from good laying and good meat stock. It must be adapted to the climate in which it is to be kept. No farmer would be so unwise as to ignore good blood, for experience with cattle, sheep and hogs has taught him that good blood is the condition of success. Scrub stock will not give satisfaction in the long run. Especially is this true with poultry. There are several ways by which good blood can be secured in an inexpensive way. In the first place, suppose that the farmer has a flock of common fowls; the hens are good layers and good table birds. He can improve the stock by killing off the mongrel male birds and investing in thoroughbred males. The following year he should kill off the entire stock, and with the pullets he raised from them pure-bred males of the same breed, but not the males of the previous season. The plan should be annually followed until the fixed type of the male birds is secured. This plan would not only give improved layers and table fowls, but it would put remarkable hardiness in the flocks. The writer keeps no common hens on his farm, but he resorts to out-crossing, a method that gives grand results. His hens, at the start, are of the Black Langshan breed, and the cocks, or cockerels, are Black Minorcas. The next year he takes the pullets of the cross and mates them to Minorcas again, secured from an entirely different family. He repeats this each year until he has a strain of Minorcas that show large bodies, strong constitutions and improved utility points. All bad effects that may be in the stock from the continual inbreeding, so much practiced by fanciers, are thus gradually remedied, until the bird is made a picture of health instead of a physical wreck.

One great reason why farmers so much object to pure-bred fowls is that they are generally of a delicate nature. They cannot afford to have sickly fowls, as these are, as a rule, very poor layers. The condition that the pure breeds so often are brought to, in the struggle for supremacy in the show room, has not only weakened their utility points, but greatly damaged their health. It is plain that such birds, despite the good qualities for which they were created, cannot be worth the price of the mongrel hen for practical work. I am not opposed to the bird in its purity by any means, but I am seriously opposed to the system of breeding carried on by those who are striving to gain the highest position on the 100 scale. I believe it is this endeavoring to obtain the highest scores that has crippled so many useful breeds. For that reason the farmer is justified in refusing to invest in such stock. First, crosses have proven themselves to be better for farm work than the pure breeds; and, as this first crossing will require pure blood to start with, it can in no way injure the value of the thoroughbred poultry. On the other hand, it acknowledges the good qualities of distinct breeds, and with this knowledge the first cross is made; made to combine the desirable

parts of the two breeds in one carcass. But first crosses must not be bred again with their own kind. If they are to be mated they should be sired with a pure-bred bird of either of the breeds used in their combination.

I like the cross of Black Minorca on Black Langshan for winter layers. It gives not only a pretty bird, but one of excellent laying qualities, and one far ahead of any cross I ever tried for winter work. The body is of the shape and size of the Langshan, and the head is that of an ideal Minorca. Samuel Cushman, the manager of the Rhode Island Experiment Station poultry yards, the past year made a number of experiments in crossing breeds, and, judging from his recent report, he believes the Indian Game crossed on the Light Brahma is in the lead. As a table fowl, such a cross is not easily excelled. I never tried it, but this season have been experimenting with Indian Game crossed on the Black Langshan. If anything, I believe Mr. Cushman's cross is better than this one for meat, but I doubt if it excels it for egg production. This winter's test should determine of what worth the cross will be for eggs during cold weather. An experiment of crossing Black Minorca on both White and Brown Leghorns was anything but satisfactory. The offspring was very puny. The Orpington breed is creating considerable favorable comment in England, and its merit as a general-purpose fowl is highly extolled. They resemble our Black Javas in appearance, and are made by crossing the Black Minorcas, Black Langshans and the barred Plymouth Rocks. Mr. Cook does not say how he began the cross, but it can be made by first crossing Plymouth Rocks on Langshan, and Black Minorcas on the pullets of that cross. The cross of White Wyandotte on Light Brahma is a good one, making a very good general-purpose fowl. It must be borne in mind that under no consideration should the cockerels of any cross be used again. Such work has only a tendency to drift toward mongrelism. The pullets are the only desirable part of a cross, and if they are to be mated again it should be with a thoroughbred.

Select the Layers.

A poultryman should be able to select from his flock the fowls that will make the best layers. If a hen hangs around the hen-house, is too lazy to scratch and is always ready for her next feed, you may make up your mind she will be an unprofitable bird. If you should notice a hen with a thick neck, large head, ill-shaped, a listless walk with no intention or purpose in view, one that gets up late in the morning and goes to bed early in the evening, you may make up your mind she may be included in the same class. If you keep this kind of a fowl, the eggs of some of the other hens must go to help pay for her feed. Conversely, another hen walks briskly and there is an elasticity in her movements which shows that she has something in view. She is neat in appearance, with a small, slim neck which is nicely arched or curved. She forages or scratches all day long and may be too busy to come for her evening meal. She is invariably at the door in the morning waiting to be let out. She snatches a few mouthfuls of feed and is off to the meadow looking for insects. Before she goes out in the morning she generally deposits her daily egg in the nest, or returns after a short forage. She is neat, clean and tidy, with a brightness and freshness pleasant to the eye. That is the hen that pays for her feed and gives a good profit all the year round. By studying these habits and breeding from such fowls any man may in a few years have an exceptionally fine flock of hens.

Sorghum and Alfalfa.

Stockmen who have used sorghum or alfalfa will read with interest the result of experiments made recently by Professors F. A. Gulley and M. Moss, of the Arizona Experiment Station. Published in a bulletin are details of an experiment in feeding in which valuable information was developed as to the best method of feeding the two crops.

Alfalfa and sorghum are mentioned as the two most profitable sources of cattle food on irrigated lands in Arizona. To compare each of these feeding stuffs with the other and with a mixture of the two, three lots of native steers each were fed from November 18th to January 1st, 71 days, as follows: Lot 1, sorghum alone; lot 2, alfalfa alone; lot 3, alfalfa and sorghum mixed. They were fed in separate fields twice daily. The sorghum was a mixture of saccharine and non-saccharine varieties. It was cut as the seed was ripening, shocked in the field and fed whole. The amount of each food given was regulated by the appetites of the animals. During the trial the lot on sorghum gained 29.8 pounds, the lot on alfalfa 78.3 pounds and the lot on the mixture of sorghum and alfalfa 96.4 pounds per head, showing a decided advantage from feeding the two foods together.

Following this trial, the three lots were all fed to March 1st on alfalfa alone. During this time the larger gain, 43.2 pounds per head, was made by the lot which had previously received sorghum; the next largest 35.23 pounds, by the lot which had received alfalfa alone. The steers were very wild, so that much difficulty was experienced in weighing the individuals of each lot separately. This was done, however, on several dates. The results of these weighings show that "without exception the wildest steers in each lot made the least gains."

In this experiment alfalfa alone gives a much better result than sorghum alone, but the combination of the two is superior to either fed singly, and this is what might be expected, judging the two feeding stuffs from their chemical composition.

Sorghum—stalks, leaves and seeds—is rich in carbonaceous, but deficient in nitrogenous matter for a complete food.

In considerable experience in feeding cattle with sorghum it has always given good results, but we have always fed it with some grain of some kind, or cotton seed and its products. * * * We prefer the large, sweet varieties for cattle feeding. We found last winter, and it agrees with our experience in Texas and Mississippi, that the cattle

would eat the stalks of the sweet varieties nearly clean, while of the non-sweet kinds they would eat the heads, some of the leaves, and reject most of the stalks. Feeding the two kinds together, they take the sweet first.

SWINE YARD.

Canadian Conclusions About Hog Raising.

At the last meeting of the Ontario Swine Breeders Association, President James Mills, of the Ontario Agricultural College, read a paper in which he presented the following conclusions that have been reached by Canadian hog raisers, finally settled, he says, and placed beyond doubt or question. Many points of interest to all hog raisers are:

1. That it pays swine breeders and feeders to study the requirements of the markets in which they have to sell their animals to ascertain what the packers want, and endeavor to furnish pigs of the kind and quality for which there is the greatest demand and the highest price. The packers ought to know the kind of pig which best suits their purpose, and when they have told us that they prefer a pig which furnishes a long, deep, lean side of bacon, we should, I think, pay a strict attention to their statements and do our utmost to breed and feed so as to get precisely the kind and quality desired.

2. That it is better for the pork trade and for the farmers that pigs should be sold alive, rather than killed and dressed at home. When packers get the pigs alive they can kill, cut and cure them uniformly, so as to meet the demands of their trade, and for that reason can afford to pay proportionately a higher price for living than for dead animals. This is beyond all question, and taking the prices paid for the last few years, we are forced to the conclusion that the farmer loses money on every pig which he kills at home; or rather, that he has heart and liver for his labor and gets less money for his dressed pork than he could have obtained for his hogs on foot. Pigs dress from 72 to 78 and very rarely to 80 per cent of their live weight, so a comparison of prices and a very simple calculation will show which is better for the owner of the pigs. Suppose your pigs are rather thin and live weight price is \$5 per 100 pounds. Then multiply this price by 100, divide the product by 72, and you will get \$6.94 as the dressed weight, which will bring you the same amount of money. If your pigs are in fair condition and of a good quality, divide by 75 instead of 72 and you will get \$6.67 as the dressed weight price; and if they are fat and of first-rate quality, divide by 77 or 80, and you will get \$6.40 or \$6.25, respectively, as the corresponding dressed weight prices. In this way it is very easy to compare the prices and determine in each case which is the more profitable for the owner of the pigs.

3. That, as regards quality, dairy fed pork is the best that we can produce in this country.

4. That hog raising, on either a large or a small scale, pays better in connection with dairying, especially butter-making, than under any other conditions known to us in this province.

It is no doubt true that sour whey possesses little or no value as food for pigs, calves or anything else, but sweet whey is worth from 6 to 10 cents per 100 pounds when fed with shorts, middlings, or some kind of meal. Buttermilk is more valuable, and skim milk is one of the best and most valuable foods that we can give to pigs at any age after the first few weeks of their existence.

These two facts—third and fourth—may, I think, be fairly urged as strong points in favor of dairying, or we might rather say, dairying all the year round—cheese in summer and butter in winter.

5. That pigs fed on grain, or even on slops, grow faster, produce a better quality of pork and pay better, when they have access to some kind of pasture, especially white or red clover about four inches long—say six to ten pigs per acre.

6. Breeding pigs—male and female—must have plenty of exercise, summer and winter, and should have some sort of green feed, pasture in summer, and turnips, mangels, or green beets in winter. The fact should receive due consideration in the laying out and fencing of yards connected with the pens in which it is proposed to keep our breeding stock.

7. That the most expensive pens are not always the best—that at least two things are essential in every pen, viz.: warmth and provision for keeping pigs perfectly dry.

8. That those who cannot keep their pigs warm, dry and comfortable in fall, winter and spring, will save money by giving up the hog business and turning their attention to something else.

9. That it does not pay to feed pigs after they are seven or eight months old, that pigs should be sold when they weigh from 200 to 320 pounds live weight, which weights should be attained in from six to eight months.

10. That, generally speaking, shorts is the cheapest and most profitable feed for pigs at the present time in this province, and it is much improved by the addition of a little pea or corn meal.

11. That a mixture of foods, with more or less variety, is better than any single food given continuously.

12. The roots—sugar beets, mangels or turnips—are a very wholesome and economical food for brood sows in winter.

13. That, as a rule, there is very little, if anything, gained by steaming or boiling feed for pigs after they are weaned.

14. That pigs, like all other kinds of live stock, should have constant access to salt.

15. That pigs should be kept as clean as possible, be regularly fed, and not get any more than they will eat up clean at each meal.

16. That whether it will pay at any particular time to feed pigs on grain alone without milk, whey or slops, will always depend on the relative prices of grain and pork.

THE DAIRY.

Artificial Butter Frauds.

The agitation which has been going on of late, owing to the determined effort of the manufacturers of butterine to force the stuff onto the markets in violation of law in many of the States may have wholesome effect in the end, by the enactment of prohibitory laws and a strict enforcement of the same, where only an effort to regulate now prevails. The only way to regulate a serpent is to kill him and the place to begin is at headquarters, Chicago, which is the breeding ground of the evil.

The *Northwestern Farmer* says: Should the higher courts finally sustain the action of the Legislature in Minnesota and several other States requiring oleomargarine or any of the concoctions that are used for butter that are to be colored pink or some color different from the dairy article, the competition from this quarter would end in all States that enforce the law. The manufacturers concede that it is useless to try to sell an article for butter that is colored pink, green, black, or any shade different from real butter. In their suit in the United States circuit against the dairy and food commissioner of Minnesota they state that such coloring would utterly destroy the commercial character of their product. This is their vulnerable point. The fight against them is hopeful on this line. New York, Connecticut, Minnesota, and perhaps a few other States, have adopted the color requirement. It has been sustained by an important court in this State, and the example is likely to be followed in other States. This has driven the great packing-houses to a test in the courts that will doubtless be eventually taken to the supreme court at Washington. They insist that the State law is unconstitutional, and ask that the agent of this State be enjoined from its enforcement until a final decision is had in the higher courts. It is set forth in their complaint that they have legal incorporation and have been for years engaged extensively in manufacturing oleo; that they label it distinctively as such; that it is a recognized article of commerce licensed by the United States, and that the processes of manufacture are clean and wholesome, and conducted under the supervision of United States inspectors. It is alleged, too, that it contains many of the best qualities of butter and keeps better. This litigation will afford opportunity to establish by sanitary and scientific evidence that oleo is unwholesome and unfit to be taken into the human system. The basis for its inhibition must be found in this. It is noticeable that the butter-makers in the great dairy States of Wisconsin and Illinois, where oleo has free sale, do not seem to be much exercised over it. Those who make the better qualities of butter will not find oleo in their way.

Temperature for Churning.

One of the most essential things in butter making is temperature of the milk, cream and butter in the different stages from the cow to the butter tub, and in the process of churning probably more depends upon the temperature at which the cream is when the churn is started than at any other time. The flavor, grain and color, three of the principal constituents of good butter, are all developed by the proper temperature of churning. Butter churned at too high a temperature will be found to contain more casein and water than that churned at a lower one, thereby injuring the keeping qualities. The color will be pale and lacking that golden hue so much prized by all good butter-makers and judges of fine butter. The grain will be injured, and the butter lacks body and firmness, and will be liable to mottles and streaks. It will take more working, and there will be greater shrinkage while on the way to market.

The temperature that cream should be churned at depends to a greater extent upon the condition of the cream and the temperature of the churn room. In winter it is not necessary to churn at as low a temperature as in summer. In the days before the Babcock test we did not give much thought to the loss of butter fat in the buttermilk. If we churned at the right temperature to produce the best quality of butter, that was all that was necessary. But since that time there has been considerable change. We still churn to produce the best quality, but we have combined this with the temperature to churn at to save all the fat from the buttermilk, and we have found that the two will work together with the best of results. In my experience I have found that acid cream should be churned at a temperature that the buttermilk will come from the churn below 60 degrees in the winter months. In my experience with sweet cream I have churned at a temperature of 50 degrees and produced good results both in keeping qualities and in the saving of fat from the buttermilk.—F. C. Leighton in Farm and Home.

A Profitable Dairy Cow.

A profitable dairy cow is one that yields not less than 600 gallons of milk a year, the milk containing not less than four per cent of butter fat. A cow yielding 600 gallons a year ought to give during the 28 earlier weeks of her milk-flow about 470 gallons, which, at the rate of one pound of cheese to each gallon of milk, would amount, after allowing for shrinkage, to four cwt. of cheese. And if the milk is for the butter dairy, the produce of 600 gallons containing four per cent of fat ought to be 240 pounds of butter. The best means of developing and improving the milking capacity of cows are selection and breeding. The lives of good milkers should be preserved as long as possible. Statistics show that of all the animals subjected during the last eight or nine years to public test at milking trials, those which were over six years old gave from 20 to 25 per cent more milk and from 20 to 25 per cent richer milk than those under that age.

THE STATE FRUIT EXCHANGE.

(Continued from page 4.)

in that case, were like that of every other man, who had a promise from a banking institution: the bank had no money to loan. So we started in without one penny of capital, without a dollar in the treasury and without a dollar in the bank, and, as I said, we took orders for fruit. We received fruit; we sold fruit and we received the amount of fruit I have stated. We paid every bill that was due, and our construction account was \$19,000. We have divided among the fruit-growers, \$285,000 in money, and we have \$6000 or \$8000 in the bank ready to be divided, and we do not owe anybody anything. I make this statement merely to show that no matter how desperate the conditions and circumstances are, if it comes to the point of necessity, that we growers can, by taking action in this connection, and so concentrating our efforts, we can so tolerate the conditions of things that it is hardly possible that we can imagine any condition to come in the future more depressing than this is, that we could go through without a single dollar of borrowed capital, from the usual sources, the bank. After we had been running about two weeks, I should state, that after I had made a great many excuses why we did not have any great amount of money on hand, one gentleman offered us \$1000, so that we did have \$1000 working capital.

MR. ADAMS:—We also had a couple of thousand dollars more that was provided for us by the president [Hersey]. He dug it up somewhere and put it in our hands.

MR. HERSEY:—There was a man down there that had courage enough to lend me a thousand dollars at a time of distress, when I wanted to pay for a lot of material and we did not have the money on hand, and as long as he could trust me with the money, it was in the hands of the institution. But this is all that we gave a note for and we paid it.

If any kind of business basis could be suggested that business men could get together, men who are as green in business as I am, and transact in three or four months a business on which the receipts of cash should be \$255,000, and the virtual stock in hand in the meantime be worth about \$400,000, and give the people who deal with them general satisfaction, it is a feature which may be worth the investigation of even the best business people—studying to see how they can get through times of financial distress. [Applause].

This is one of the results of co-operative work. It did not run smoothly always, and I will remark, as I frequently have, if I can get through and not more than one-third of the patrons call me the biggest rascal that ever went unhung, I should be satisfied; I can actually smile at the result, notwithstanding that I am the target that is shot at. [Applause]. But these things will occur. A man sends us fruit that averages about 80's to 90's and it does not grade out 50's to 60's, and he says it is not graded right. That is one of the things you have to contend with, but you must do it patiently. Unless you can get a man at the head of your institution who will take all of those little things patiently, you cannot make a success of it. Get men with a reasonable degree of stupidity, that are not so sensitive as many are [laughter], and men who can stand those things. When you can do that there is no question about your success. The farmers will even tolerate you, and they will live and work harmoniously together. It is really a matter of rejoicing on my part to have one in ten of our people come in and speak in a friendly and kindly way of the prosperity of this institution. The rest of them get outside; of course they will not talk as freely as they talk among themselves, and I do not often hear what they say unless some one having more frankness than people generally do, will come and tell what he hears, and that gives a good opportunity for explanation.

This is not entirely a smooth process. Nearly every commission house and broker in this State, and a great many all the way from Boston to San Francisco, did not look upon this question of ours with any degree of faith, and as the matter progressed they felt that it was rather an infringement, or, if not an infringement, an interference with their business. I have to confess that outside of three of your commission houses here in San Francisco who have been exceedingly kind and friendly to me I have not received one single word of favor or of advantage in any way to help me in any possible way in the work that has been before me. There has been three of your houses that have been extremely kind, even almost confidential, so far as pertains to their business, and I have been equally so, so far as pertains to ours.

They have had every kind of an epithet for me—the young men that went around among the farmers—and told them what kind of a chap I was, and I feel that I have had every kind of an epithet from the "Gulliver of Commission Men" to "The Uncrowned King." I begin to feel exceedingly complimented by the chain of epithets which have passed in common parlance during the last three or four months. These remarks are only made to show that, if you ever form an association in your own community, you will have all of these things to contend with, and you might just as well bear them patiently and with a smile upon your countenance as to get cross or angry. That is the only way that you can be successful, and at the same time keep pushing forward. It was some time before we had any idea that each other knew anything about the business. I was confident I did not know much about it, but yet we have gone forward and we have met with the results that I have stated here.

Now, what has this done for us? I have not got any better prices than any one else. I sold a great proportion of our prunes, based upon the four sizes, at 5c a pound. When the market was 4½, I sold some for 4¾. Now, they have a market in a chaotic condition, and I only sold one car. That was necessary to sell, because it was lately brought in from a man who had kept it improperly stored in the country and it was apt to be injured. I sold that for 4¾. On the whole, we have sold at the same prices and no better than any one else. But the position is that this 8,500,000 lbs. was concentrated in this institution instead

of being forced upon the buyers for the purpose of selling, fulfilling their orders East. There were six or seven of these buyers down in our county. What do you suppose would have been the result had this crop of fruit been forced upon them for sale? When the price was down to 4½c, and we worked it back to 5c, do you suppose we would have got it there without the concentration of this fruit? Don't you suppose they would have made the price 4c instead of 4½ or 5c? There can be no question in my mind about it, and I do not say this to bolster up our institution, but as an acknowledged fact that is recognized by the wisest and the best men in the business all the way from Boston to San Francisco. They say that if this amount of fruit had been forced upon the market, the price would have been a matter of their own fixing.

The only unpleasant thing about it is this: When we are receiving and concentrating so much fruit, and refusing to place the same for sale upon the lower market, we are simply holding the price up for other men to step in and get nearly all of what we want to receive. Something of that kind has been done, and I have no doubt that some of our neighbors and patrons have done as well, if not better, than we were able to do on the average. Where those people were intelligent, and I have met them in many instances, although they were outsiders, they acknowledged to me that if it had not been for our institution, they would have sold their fruit for one-half or three-fourths of a cent less than they did, and there is no doubt about it. This is the point I would make strong—the fact that we cannot have so much individual competition that would necessarily result injuriously, as it would if we remained unorganized. Let the 1500 growers of Santa Clara county, preparing their fruit for market, as they would be obliged to prepare it outside of the few green-fruit buyers, who buy for the purpose of drying, and we would have over 1000 competitors in our market for selling, and the only method of selling would be for the few men that gather in the few months of the year to fill their warehouses and manipulate it and sell it. There would be a large surplus that would be consigned into the large markets and there sold through the usual channels of consignment. Now, while it is necessary to consign fruits and gather together sometimes regular staple articles, yet consignments operate unfortunately, and the great majority of people who do consign suffer, and suffer extremely from their consignments. Once in a while they may do well, but in the majority of cases they lose.

What we have been trying to teach the people this year, but have not accomplished—we cannot accomplish everything in one year—is that they should not all push their fruit forward upon the market. If a man has two carloads, ship one of them; if three, sell two; if five, sell three; and so on. But the result was they did not take our advice, and there were about 150 carloads of prunes sent into New York, Chicago and Philadelphia on consignment. From that moment we did not sell any fruit. The price went down quickly and promptly from 5 to 4½, then 4½ and 4¼, and now they have the supreme audacity to telegraph me from New York, wanting to know if I would take ¾ for a carload of prunes averaging 70 to 80—fruit that we have sold during the season for 4½ or 5c. If the market had not been full of fruit of the same kind being offered for 4½, they would not have sent any such telegram as that. They would simply have asked me to send the price, and I would have quoted them back 4½c, and would have got it, too.

We have not raised this year any more fruit than was wanted, every pound of it going into consumption. We are favored extremely by the fact that the Eastern production of fruit is very light, and although we have a large crop, it is all going into consumption. There is no necessity that there should have been a pound of it sold for less than 5 cents, on an average of the four sizes. But the time is coming when we will have to sell our fruit from 4 to 4½ cents. The reason is this—that the fruit crop is going to grow faster than the market is going to spread or extend. The result is, we will have to make prices sufficiently attractive so that it will go into every nook and corner of the United States, and be sold, not only as a luxury, but as an advantage to health, as many of the Eastern physicians are now recommending our prunes as a healthful diet. When this idea generally attains throughout the United States, we can push it out; but there is no question in my mind that we have trees enough planted to raise 100,000,000 pounds of dried prunes. That is considerable more than we have raised. We have got to struggle honestly, wisely and unitedly in order to get through with it and get out of it and feel that we have secured enough upon which we can live. I am going to leave the question to general discussion.

MR. ADAMS:—There is one point I want you to bring out, because I have spoken of it myself in many of our little gatherings; that is, about the difficulty we had in Santa Clara county early in the season and later with competition from uninformed portions of the State—that has a special bearing on what we are now doing.

MR. HERSEY:—It was utterly impossible for us to sell a single pound of apricots in Fresno until the southern part of the State and Vacaville had got rid of a large proportion of theirs. Apricots were selling from 6½ to 7 cents, some as low as 6 and 6½ cents, what we call a fair choice apricot. I saw a sample of some very fine ones from Fresno offered for 7 cents and finally sold for 6½ cents—a full carload that if I had in my possession, I would have returned at least 7½ cents. I did not sell any, but when those were out of the way, the first fruit I did sell was at 7½ cents. We tried to make those people understand. We sent out bulletins stating that the crop was short and that there would be no surplus whatever of apricots, but still it had no effect. Our sales began, even the poorest grade we had, at 7½ cents, and from that we went up to 8, 9, 9½ and 10 cents. We had the best grade at 10 cents, and we finally got this up to 12½ cents a pound. Now, we could not sell anything until those were out of the way, and as it costs the people in Vacaville just as much to raise a pound of fruit as it does us, they ought to get just as much, and their crop was

choice fruit, just as good as our choice fruit. There was no reason why they should not get the same price.

Now, if we can all act upon the same basis and if you can understand that the crop is short and that it can all be used at the same price, if you ask it, then we will act upon the same basis and we will get the price; but understand that never under any circumstances must any combination of people in any part of this State undertake to practice a cinch game on anybody in any part of the United States. [Applause] Just as soon as you do that you bring yourself and the organization into such disrepute that something will come along and knock the foundation out from under you. We have forced the idea upon people everywhere that our organization was not a State organization; it was simply one to protect ourselves against the persons who were cinching us. The cinch comes from the other way. We would like to make the market steady and uniform, so that a man who bought a carload of 'cots of us and took them to New York, Toledo, Philadelphia, or any other place, could feel that he could get them into first business houses and would have a few days in which to sell them and no one else would sell at less price and knock the trade out for him. It protects both ways and it is a matter of business that we should attend to.

Now you will have to pitch into me with questions if there is anything more you want to know particularly about.

QUESTION:—Can the business be done at less expense than the old method?

MR. HERSEY:—I want to say that we have been charged with being the boss commission house. We charge five per cent for selling; \$2 per ton for receiving, grading, distributing, packing, warehousing and shipping the fruit, and we get five per cent on sales. It is an arbitrary charge. We do not know anything about what it costs, but we make this charge for our brokerage to cover the office expense, telegrams and little claims that are made up, and there is always a wonderful amount of them on a falling market. We promise that if there is anything left out of that, that we will divide it. We will be dead broke—if you will excuse the expression—at the end of the season, if we did not make this charge.

MR. ADAMS:—Mr. Hersey, I think you will have to bear me out. The last time we went over the figures we thought our expenses—

MR. HERSEY:—I have it definitely here [producing figures]. We have sold \$285,000 worth of fruit and our brokerage is generally 2½ per cent. We pay 2½ per cent at the other end of the line. Our expenses this year are: Warehouse expenses, \$487, which does not include rent, which will be \$600 or \$700; fuel, \$193, using it for dipping fruit and running our steam engine; freight and cartage, \$160; printing, \$47—that is office printing; printing and salaries, and that includes expenses of issuing 22 weekly bulletins which cost about \$50 per month for printing and distributing besides and all the necessary labor and expense of getting the information and material together; stationary for office purposes, \$145.95. I have added to this the pay-roll \$4162, but that pay-roll includes the labor that is performed on the fruit that you would have to perform at home if it is not performed there. We receive it and run it through the grader, weigh it, separate it into its proper places, sack it, dip it, box it. This makes a total of \$6381.43. That is less than 2½ per cent on the amount of business done. We charge nothing for warehousing or any other purpose. It looks as though the whole business, taking care of the freight, etc., would only amount to 5 per cent anyway. If we take out the \$4162 from the \$6381, we leave as an expense this year only a little over \$2000.

QUESTION:—Is this expense the minimum at which this business can be organized and carried on the first year?

QUESTION:—Is there a question when they consign fruit about their being paid all that the fruit is consigned for?

MR. HERSEY:—I do not know about that. I know people talk about the majority of people being dishonest; perhaps they are, but I do not know as I want to say so.

MR. MCGARVIE:—Mr. Hersey, at your Exchange in Santa Clara county do the members of that Exchange own fruit, bring it and deposit it with the Exchange, and, if so, does it become the property of the Exchange or remain the property of the individuals who brought it there, and, if so, do you have any trouble when you come to sell a carload of fruit as to whose fruit you shall sell?

MR. HERSEY:—Well, I will tell you a little about the process. We have received 7,500,000 pounds of fruit, and out of the receipts which have come, say from 400 persons, there are only 10 or 12 of those persons who wanted their fruit sold separately. The rest of it is all pooled, and I do not make any difference whose pile it comes out of when I fill up a carload of fruit.

MR. MCGARVIE:—If you undertake to pool it, then you pool the men whose prunes run from 40 to 60; you do not pool those with prunes running from 90 to 100, do you?

MR. HERSEY:—No, sir. If you were coming with a load of prunes in your packing boxes weighing about 50 pounds apiece, you drive up to the middle door of our warehouse, and there will be two men to help you unload and put them into the grader. After they are graded out, each grade is taken to the scales and weighed, and you get a receipt reading: "Received of Mr. Smith 500 pounds of prunes, 40 to 50; 2000 pounds, 50 to 60; 1500 pounds, 60 to 70; 450 pounds, 70 to 80; 200 pounds, 100 and upward." That is your receipt, and it shows your standing; and when we pay we pay for the grade as stated in that receipt.

Now, fruit is sold on a certain basis. When I say 5c for the four sizes, it means this; that the 70 to 80 are 5½, and 80 to 90 are 4¾, and the 90 to 100 are 4¼, and the 60 to 70 are 5¾. So that if you bring me all of the 4¾ grade you get that price. One man brought me 21 tons, and a little over 20 tons ran 100 and upward. I settled with one man whose prunes figured up 6¾ net to him, because they were a very fine lot of prunes and averaged almost as good

as 40 to 50 all through. So that the system of equity runs all through it, by each man getting a receipt for what he brings as it appears upon the grader or scale. That system of equity must be run through it or else there will be all these bickerings and jealousies constantly arising, because one man will want to put his fruit in better than another man.

Now, gentlemen, this is the hour of adjournment, and I have only discussed the workings and results of our institution, that out of it you may understand what may be done, and what is the effect of co-operation. What we want is that you shall co-operate all through the State in somewhat the same way, and when we get together let us get some information from you, and you from us, and act like intelligent men, without each trying to get the best of the other. The matter is getting so large that individual men won't have much effect and can have but little to do with the market. The man who raises but one carload of prunes, out of the three or four thousand we shall have in two or three years, is only a mite, and he might as well drop into insignificance, as a dealer or controller of the market, now as any time, and we should work together and get into such shape that we shall have pride in the success of the property on which our prosperity depends.

ORGANIZATION EFFECTED.

Mr. Adams' Plan Accepted. Board of Directors Chosen and Instructed to Carry It Into Effect.

Immediately after the mid-day recess the Committee on Resolutions (Stabler of Sutter, Motheral of Kings, Glad-den of Sonoma, Butler of Placer, and Wheeler of Santa Clara), brought in the following resolutions, with the recommendation that they be adopted:

Resolved, by this mass convention of the fruit-growers of California:

I. That this convention heartily endorses the principle of State co-operation in marketing fruit, on the general lines laid down by the officers and directors of the California Fruit Exchange.

II. That this convention approves and, on behalf of the fruit-growers of California, accepts the work done under the resolution adopted by the State Horticultural Society, at its October meeting in San Jose, recognizing hereby the California Fruit Exchange as now organized, as an authorized representative of the fruit-growers of California.

III. That, as requested through the State Horticultural Society by the present Directors of the Exchange, this convention will proceed to express its preference for Directors of the Exchange to serve for the year 1894, to which end a committee of five fruit-growers shall be immediately appointed, to report, at a proper time, to this convention, the names of eleven fruit-growers to serve as such directors.

IV. That this convention recognizes that a State Exchange, to be effective, will require the assurance of a suitable income, to which end it recommends that all co-operative associations of fruit-growers, and all individual producers not connected with such societies, associate themselves with the State Exchange under written contracts by which they shall pay to the exchange, in consideration for general services rendered, the amount of one-half of one per cent of their sales of dried-fruit products in each year, or so much thereof as may be required.

V. That the services for which such payment may be expected to provide will be the gathering and distribution of information; the opening of new markets and the extension of old ones; the obtaining of better and cheaper facilities for transportation; the service as financial agent for procuring funds for advances on dried fruits in store in California; the active promotion of local organization among fruit-growers; and other similar services of a general character, whose benefits are shared by all in proportion to their interests, and that for its services in acting as a direct selling agent for associations or individuals desiring it, such charge, additional to one-half of one per cent, should be made as may be sufficient to cover the cost of such special service.

VI. That this convention recognizes the necessity of a reasonable amount of capital for the Exchange, to which end we will proceed forthwith to obtain from those present subscriptions to the capital stock of the Exchange.

These resolutions were received with applause, but there was no disposition to accept them without careful scrutiny. Mr. Adams, their author, was allowed to take the platform and to explain each paragraph in all its bearings before the vote was taken. He talked at very considerable length in the spirit of the report printed above.

But the project was not to go through without encountering direct opposition. Prof. Allen of Santa Clara declared that in his judgment the movement had begun at the wrong end. He thought that a general organization of local Exchanges should first be made, and that a general State Exchange should grow out of the necessity thus created for a central marketing agency. To begin by first creating a State Exchange was, he declared, like trying to build a pyramid with the apex on the ground and the base in the air. Mr. McGlincey, also of Santa Clara, thought in the same way and warmly seconded Prof. Allen's position. Mr. Motheral of Kings replied with great earnestness, taking the ground that to thus argue at this stage of the game was in effect to suggest that the convention declare co-operation a failure. He did not know that the way proposed was the best way, but it seemed the best in sight, and he thought it ought to be given a fair trial. To enforce the necessity for the movement, Mr. Motheral described the fruit interest as being at a low ebb and in distress, which brought Gen. N. P. Chipman of Tehama county to his feet. He denied with a considerable display of spirit that the fruit interest was in a bad way, and declared it to be utterly wrong to so represent it. He declared the fruit interest to be the most prosperous interest in the State or in the United States. The small growers, he thought, were suffering for want of information on marketing, and looked to the projected Exchange to help them out. It

should, he said, do a most useful work. The fruit men should be organized thoroughly at the great commercial centers.

After some further discussion, in which it became apparent that the sentiment of the convention was overwhelmingly favorable to Mr. Adams' plan and against the protest of Prof. Allen, the resolutions as a whole were submitted to a vote and carried by acclamation amid general applause.

The following named persons were then selected and endorsed by the convention as directors of the State Exchange for the year 1894: F. N. Woods, Santa Clara; E. A. Wheeler, Santa Clara; B. F. Walton, Sutter; C. T. Thomas, Los Angeles; John Markley, Sonoma; B. F. Allen, Butte; E. W. Maslin, Placer; C. H. Norris, Fresno; D. T. Fowler, Fresno; W. J. Dobbins, Solano; Philo Hersey, Santa Clara.

Following the election of directors an effort was made to secure subscriptions to the capital stock of the Exchange and several persons gave in their subscriptions, but the response in general indicated that the sentiment was rather in favor of postponing this part of the work. General Chipman suggested that the delegates be given time to acquaint their townspeople with the work of the convention, and that the financial results would be much more liberal than they could be at the time of the convention. This suggestion was acted upon, and the stock books will be opened later on in the several fruit-growing localities. It is believed that there will be no difficulty in raising all the capital needed.

GEN. CHIPMAN ON THE TARIFF.

Congress Asked to Retain Present Duties—A Strong Memorial by Col. Aiken.

A memorial to Congress respecting proposed tariff charges, introduced by Col. W. H. Aiken of Wrights early in the day, was taken up in the evening and, after an eloquent speech by its author, was adopted by a vote all but unanimous. The memorial, after touching upon the vast interests involved in this State, proceeds as follows:

Your memorialists further represent that the tariff bill now pending removes all protection from the fruit products, especially of this State, and strikes at the continued profitable existence of the fruit industry in California, for the 1 cent per pound tariff on prunes and 1½ cents per pound on raisins no more than pay the difference in freight, thus reducing our labor to foreign standards of wages if competition is successfully maintained.

That there is, we believe, no public demand that the fruit product should be furnished in competition with foreign importations at less than cost of production; therefore, be it

Resolved, That the present duties on foreign fruits, figs, nuts, olive oil and fruit products are just and right, and should not be reduced, and that Zante currants be taxed the same as other raisins; that our Senators and Representatives in Congress are urgently and respectfully requested to work and vote against any measure that reduces the tariff duties in fruit and fruit products, olive oil, figs, prunes, nuts and raisins, and favor a tariff upon Zante currants, the same as other raisins.

This memorial was the means of bringing out a notable speech from Gen. Chipman of Tehama concerning prospective tariff legislation as related to the interests of California fruit-growers. Gen. Chipman said:

I agree with the gentleman in regard to the importance of this particular subject. I do not believe it is necessary to put it on any partisan platform; except we may say in regard to the declarations of the party in power—the declaration of that party is that tariff should be for revenue, and that articles treated as luxuries should bear the burden; and how, on that principle of legislation, which is announced as the foundation of legislation by that party, figs, olive oil, raisins and prunes, are to be placed upon the free list for the purpose of raising revenue, is past my comprehension. Possibly my free trade friend, the secretary [Maslin] might enlighten me. It is impossible to enlighten anyone on this proposition, that a tariff for revenue only on that principle, should omit the opportunity of obtaining revenue from any article that is treated as a luxury, when it might be at the same time a benefit to American industries, unless it is done on the principle of destroying the American industry—and I will never attribute that to any party. [Applause.]

We have only to go to the American Congress to day and present our claim upon the basis of its own declared principles, to gain all we ask, and we have been so advised by the leading newspaper of that party on this coast; and those of us who have had any cause to address Congress, know that we have some reason to hope for success. Now, I prepared a memorial under the inspiration given by the Fruit-growing Convention of last summer, in which my name was used as a delegate to go to Washington. I did prepare for the State Board of Trade, a memorial, on the lines suggested by the San Francisco Examiner. I prepared a schedule showing the rate levied by the Act of 1883, in the column opposite, the tariff of the McKinley bill of 1890, in the next column the tariff proposed by the Mills' bill, which had passed the House of Representatives, and would have become a law, had not the Senate been at that time Republican. Now, a careful comparison of those three tables will show that the revenue policies formulated and announced by the parties then in power, did not differ materially with what we are saying to-day, in regard to the industries of California; except that they did put the fig upon the free list for some unknown illogical reason, and they did put olive oil on the free list. But, olive oil was upon the free list under the Act of 1883. Even the Republicans have not become impressed with the importance of the salad oil. They put a duty upon the mechanical oil of olive oil, and left open the salad oil, so-called, although we were then struggling with the industry in this State, in raising olives. But the McKinley bill put that upon the dutiable list, at 35 cents per gallon, which is no protection at all.

I have the greatest faith in the ultimate patriotism and

intelligence of the American Congress, whether Democratic or Republican, and when it can be made to see that its own line of policy can be adopted and American industries served, (we will leave out the word "protection" for that hurts their feelings) American industries can be aided, and yet the policy of tariff for revenue only carried out. We must certainly hope for success in that direction.

It so happens that almost the entire delegation from this State is composed of Democrats, and it would be a poor compliment to pay them to suppose that, with their power to control votes—and it is largely a question of votes when it comes to practical legislation in Congress—we can hardly attribute to our delegation so little influence as to fail utterly in carrying out our wishes.

My friend, Col. Aiken, left off the Zante currant because he thought it impossible to get it on the dutiable list, the committee having placed it upon the free list. I think we can accomplish that. It must be plain to every man's mind to-day that when the purpose of the Government is to raise revenue from every conceivable source, when there is a deficiency, that they must have revenue, and we can present to them a method of obtaining revenues from luxuries, we cannot conceive of speed enough in the American Congress to accept it.

I have the greatest hope that before this bill becomes a law the industries of California will be placed where they will have what we call protection, and yet the Democratic idea be fully met, because they are really articles in the category of luxuries, and ought to bring revenue into the funds of the government.

Now, I presented in that same memorial a table, showing the importations from 1884 to 1892 of all these articles, except raisins. At that time there had been a special committee appointed by the raisin-growers of this State, and I thought it might be a little out of place for us to touch upon that question, so I did not deal with the raisin question in this report; but I presented a list of the importations since 1884, of all the products with which our industries come into competition.

In 1884 we imported 7,000,000 pounds of figs; in 1892, 8,000,000 pounds. Our importations are increasing. Our Democratic friends had a means of getting a revenue by putting the fig upon the dutiable list; this 8,000,000 pounds which it is now proposed to let come in free, and without obtaining a revenue, at the same time doing an injury to the figs. Our importations are increasing. Prunes we imported, in 1884, 60,000,000 pounds; in 1892, 10,000,000 pounds. There is an American industry beginning to show itself. If the column of raisins were laid alongside of that, you would see that the raisins had almost entirely taken the place of the raisins from abroad.

There can be no object in Congress taking a cent off the duty so levied on 10,000,000 pounds of raisins, when the revenue thereby would be decreased rather than increased, and, even if allowed to remain, would not make very much difference with the revenues of the government, which requires \$500,000,000 or \$600,000,000 to support it. So there is no argument in favor of reducing the tariff on prunes.

Now, of the almond we imported 3,000,000 pounds in 1884, and 7,000,000 pounds in 1892. The almonds, some of them producing new and excellent varieties, are placed upon the dutiable list by Mr. McKinley, and still the importations are increasing.

Now, can any Congressman see any logic in reducing the tariff upon the almond or upon the prunes and leaving the duty as Mr. McKinley placed it upon the almond? It seems to me we have only to present this matter in a business way and in the best light of the interest of the country to accomplish what we want.

Now, look at the number of gallons of olive oil—the salad oil: 600,000 gallons in 1884, 700,000 gallons in 1892. So, you see, that with all the efforts to displace the salad olive oil of the country, the importations are increasing.

Lemons—The value amounted to \$2,000,000 in 1884, and in 1892 to \$4,000,000; importations doubled in that time, and yet our output has largely increased. The same is true of the orange. The orange importations amounted to \$2,000,000 in 1892.

Now, we can say to these gentlemen: Here is the matter of rice—a breakfast table food, not an article of luxury. It is part of our breakfast diet. It has a value of 2, 3 or 4c per lb. You can buy it at retail for 4½ or 5c, and yet they keep a duty of 2½c upon it in order to protect two or three States of the Union, and we say, "That is all right, South Carolina and North Carolina; we are willing to help you in your rice field, and we want you to exchange your island rice for our prunes, and we want your delegates to stand by us in the matter of our prunes."

You will find, while it is the most difficult thing in the world to form a tariff bill on any lines, it is impossible to make one that has not for its object—if not its declared object, at least having for its result—the protection of the industries that find their way upon the list. It seems to me that, with the class of men we have in Congress, gentlemen going there to urge action of the House and the Senate on this matter, reserving to us the tariff legislation substantially as it now is—I have the greatest faith that that will be the ultimate result.

Notes.

At the suggestion of Mr. H. P. Stabler, of Sutter county, the convention endorsed the resolutions of the Los Angeles meeting concerning the matters of transportation and freights. The resolutions demand quicker time, recommend the discontinuance of refrigeration and the performance of special service at the present rate of \$1.25 per 100 pounds to Chicago.

Prof. Emory E. Smith, Chief of the Department of Horticulture of the Midwinter Fair, stated to the convention that it had been decided to accord free space to individual exhibitors in the horticultural building.

Resolutions of thanks to the officers of the convention and to the members of the Preliminary Committee were passed by unanimous vote.

THE FIELD.

The Sugar Bounty.

Naturally many Californians who are growing beets for the sugar factories are interested in what the Government will do with the sugar bounty. The same problem engrosses the Louisiana cane growers, and a Washington letter, which we find in the *Louisiana Planter*, dated December 19th, says:

The developments in Congress during the past week have not been unfavorable to the sugar industry. As matters progress and new plans continue to evolve it is noticeable that one feature prevails through all, however much they may differ in other respects, and this is that provision is made in some way or other for protection of the sugar producers. Up to the present time the respect and consideration which their position commands may be considered decidedly encouraging.

The talk of an entire repeal, outright, of the sugar bounty act has largely subsided. In its place, in addition to retaining the graduated repeal clause of the bill as decided, some of the members of the committee on ways and means favor a small duty on sugar.

While this would make the increased cost to the consumer very slight it would possess the advantage of raising a revenue that would be considerable, in addition to paying all the bounty, and thus it would work to advantage in both ways.

The rate proposed is three-quarters of a cent, and it is only natural that attention should turn to this in looking for a way out of the difficulty in selecting other objects for taxation, the opposition to which becomes stronger as the canvass proceeds. Whisky and cigars, incomes and other sources possible to draw from, all have such powerful friends for protection in their respective classes that sugar for the masses must, perhaps, be made to contribute its quota.

Of the new plans so far presented, probably that of Mr. Henry A. Brown, of Saxonville, Mass., has the most merit and commands consideration as the invention of a sugar tariff expert who has devoted many years to his study of the sugar problem. His scheme includes the double plan of duty and internal revenue tax. It includes a duty on all sugars imported for consumption without refining, to be paid according to the Dutch standard in color, 1 1/4 cents per pound when above and 1 cent when not above No. 16 in color, with the provision that where testing 90 degrees or over it will be classed as above No. 16.

Imported sugars intended for refining under his plan would be entered and refined in bond, and when taken out for consumption pay an internal revenue tax of one cent on all above and three-fourths of one cent on that not above No. 18 in color of the Dutch standard, exports of refined sugar being exempted from taxation.

In regard to the bounty he provides for its reduction pro

rata to the tax levied, as he is satisfied the sugar industry demands protection, but he thinks 1 1/2 cents per pound sufficient, judging from the cost of production. It must be evident, however, that those engaged in the business are best qualified for judging on this point.

In regard to the amount of protection necessary for continuation of the industry at a profit in its several forms, it is safe to assert that the cane sugar producers are practically unanimous in believing that nothing less than that afforded by the bounty law would be sufficient. It is possible, if the restrictive operations of the internal revenue laws could be removed, so that the alcohol process might be used for separating the sugar, and the alcohol necessary for that purpose could be made from the sorghum molasses, whereby the process of manufacturing sorghum sugar could be conducted from the product of the cane, that its production would not require quite so much protection as the bounty now affords. But the difficulties which still exist, notwithstanding the modification of the law, are sufficient, Prof. Wiley recently told me, to prevent the practical use of this method.

Dr. Wiley, however, believes that sorghum cane is to be the great sugar producer, and has a magnificent future before it. For the arid regions of the West he thinks it especially fitted, as it has a wonderful capacity for resisting drought. Its crop of fourteen or fifteen bushels of seed per acre now sells in the localities where grown at \$1.25 per bushel for sowing crops for fodder, and in this way it produces a double profit.

As to the protection required by the beet sugar industry, Mr. Henry T. Oxnard, the best authority in this country on that subject, told me a few weeks ago that if the bounty should be taken off, as threatened by some, the beet sugar factories will be shut up unless a duty is put on. He thought if one cent per pound should be imposed, that the present factories might be kept running to avoid the loss of idle capital invested in them, but that none others would be erected. Nearly if not quite the amount of protection now afforded by the bounty is still required by the beet sugar industry, especially in the States east of the Rocky Mountains. At the Grand Island factory, in Nebraska, about 500 head of cattle have been fed on the beet pulp this season to utilize the waste products and thus help pay expenses, and at the Norfolk factory in that State some 900 head of cattle have been fed during the grinding season; three or four pounds of corn meal being mixed with each hundred pounds of pulp.

Mr. Oxnard, however, has faith in the future of the sugar industry and a firm belief that the wisdom and justice of Congress will retain a protective measure for its benefit.

Large and Roomy Box-Stalls Beneficial.

Have your stalls made large and roomy. A stall nine feet by four and a half is not large enough for a horse fifteen-three. Moreover, it is not certain whether the stall will be occupied by a 14-hand horse or a 17-hand horse. Some of you have had experience, perhaps, in sleeping in

a short bed, and you know there is nothing quite so distressing, especially after a hard day's work. Box stalls are the proper accommodations for horses, but space will not always allow for box stalls. Where 300 or 400 horses are to be stabled in cities, box stalls are next to impossible. Then let the single stalls be constructed, with room sufficient for the horses to stretch their limbs. The narrow, rough-floored stalls which are found in many stables are little more than chambers of torture, and many of the hardest-worked horses in the country—for instance, street-car horses—are forced into these. The extra amount of work that horses will be enabled to do by having the right kind of stalls provided—stalls in which they can have room to stir about and stretch their limbs—will more than pay for the extra expense it will take to provide such stalls.

Let the stable be well lighted. Light is the cheapest of commodities—cheaper than any of Nature's gifts, except the air we breathe. Sunlight affects everything in a remarkably healthful degree. That side of fruit which receives the direct rays of the sun ripens first and becomes fuller in form. It is not unreasonable to suppose that the contour of animals is similarly influenced. The spirits of a horse are affected with direct reference to light and darkness, and not only his spirits, but every part of his physical system. A horse began to stumble that never stumbled before. The owner could not account for it. "Is your new stable dark?" was the query put to him by a horseman. "Yes, very dark." "Put a window in it and then watch the effect upon your horse." The dark stable was the secret of the stumbling.—Sunday Call.

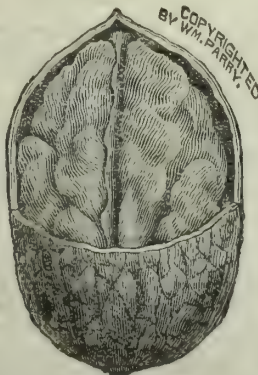
Cow Tail Holders.

Take a small, soft cord about one yard long; double it in your hands; pass the looped end around the cow's tail, and put the two single ends through the looped end; tighten it and pass one of the single ends on the inside of the cow's leg; meet this with the other single end and tie on the outside of the leg with a bow-knot. This is quickly and easily untied and taken off. Perhaps this might be improved by fastening a small snap-hook on one end of the cord and small rings on the other. I have found the simple cord very convenient. You can have a place to hang the cord in the stable where it is always ready, or carry it in your pocket. Why is one needed? Why, to hold the cow's tail from switching in your face and even in the milk pail sometimes. I have a cow now that has lost the soft brush of her tail. When the milker begins to milk, she will begin to swing her tail toward his face; after a few strokes, she will get the range and slap across his face, and not miss it, if let alone. I have watched this tail-switching business for the past 40 years, and I conclude that it is natural for a cow to switch her tail when irritated, as well as when pleased, and of course to keep off tormenting insects. During fly-time, a cow gets a habit of keeping her tail on the swing, and a "cool, dark stable" is not a remedy, because she has the habit, but "my tie" has a tendency to break the habit, and can be left off after a time when other causes are removed.

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THE HOME CIRCLE.

Proper Pride.

"I will not be yours," the maiden said:
"I admire you much, but I won't be wed.
You're all that's nice; you haven't a vice—
But I will not marry you, sir," she said.

The youth in sadness turned away;
For the maiden was fair as the dawning day.
And from over the street he watched that sweet
Little girl turn other suitors away.

Hard-hearted maiden she? First came
A nobleman with a famous name;
And he courted that girl, he did, that Earl;
And the mitten rewarded him, all the same.

Then came a man with a hoard of gold,
So big that his wealth could not be told.
He wooed the maid as a matter of trade,
And went out, wondering, into the cold.

Then came a poet with raven hair,
And a most interesting soulful air;
And he wooed in verse, and got left much worse
Than his predecessors—and she didn't care.

And a long string of suitors came to beseech,
And the very same answer she gave to each;
And the young man thought, "Why the prize that
I sought

Was about a hundred miles out of my reach!"

At last when the line had grown to a score,
And each had been served like the one before,
The maiden said, as she nodded her head,
"I really don't think that I need any more!"

So she crossed the highway, her love to see;
"You were my first proposal," said she;
"So, for self-respect, I thought I'd collect
A few more ere I'd marry you, sir," said she.

"But now—"
And somehow
She yielded right under a kiss on her brow—
"I'll marry you at any time, sir!" said she.

—Puck.

The Way They Emigrate.

SHE was a scullery maid at a private hotel. Jacopina scrubbed floors and kettles and brass door-knobs; she helped carry trunks and move furniture; and, as she dwelt underground mostly, we should never have known about her except that one week when the hotel was short of help she was detailed to make the service of our rooms. She was tall and broad and strong as a man, with brawny shoulders and muscular arms and one of the sweetest faces ever seen. A simple, childish face to top such a stalwart frame—her hair dark, crisping back from the forehead, her cheeks glowing and her throat white and soft with tender little folds and creases in it as one sees in old paintings. Jacopina had a romance and a lover. He was a miner who had emigrated to the Black Hills three years before, and as Jacopina bade him good-bye and, wiping the tears from her eyes, went back to her scrubbing, she felt that she should never see him again. He had pressed her hand at parting and had sworn he would hoard every possible penny until he could send the money to pay her passage over the seas; but Jacopina had known other maidens whose lovers had sworn to be true, and—well, why should she look to have better luck than they.

After two years he sent for her, actually wrote for her to come, and promised to meet her in New York, but he did not send any money; he told her she must manage to get it in some way herself, but that he would refund it after she came. Jacopina was wild to go, but no one would lend her the money, and she had not saved a fortune at scrubbing.

"You're a fool, Jacopina," cautioned her advisers. "It is two years now. Who knows if he will ever meet you? And we all know that he would never send the money back; what man would? Over seas is over seas. You borrow the big sum and you make the long journey, and you find yourself in the far country, and you cannot speak, and you have no friend, and your lover—che, che, all the world knows better than to count on a lover; you will find him safe married and so, and so—"

So they dissuaded her. She wept a little, and she got out her lover's photograph and admired his curly hair (redolent of oil) and his dotted cravat with a huge stick-pin in it, and then she asked the priest's sister to write a letter for her and tell him why she could not come. The lover was wiser than most men who wear dotted cravats. Let us hope it was partly love and not wholly a desire to add to himself a willing scullion with brawny muscles.

"He had been bitterly disappointed," he wrote; "he had travelled all the way to New York from the Black Hills, to meet a certain steamer, with the money to refund her passage in his breast-pocket—and she had not come."

It was a year later now and he had just written again, sending the money this time, but ending it in charge to a friend, for how

could he know in what mind his letter might find her. He wrote her a lover-like missive, reminding her of how many years they had cared for each other and saying at last: "I send you the money. I had it ready before, if you had only trusted me. But I cannot come to New York as I did before; I might get fooled again; but if you do come, I'll meet you at Chicago, and if you don't come, adieu, for you'll never hear from me again."

Jacopina would not listen to any advisers this time; she seemed to see only the pathetic figure waiting at the steamer's dock, careening with unspent gold and turning back to those wonderful hills, in sorrow and loneliness, to dig out more. She was so big and conspicuous and simple that we feared the journey for her; a girl who could neither read nor write, and who had never before been five miles away from her birthplace.

So we wrote letters for her in various languages to officials all along the route; to Innsbruck, to the North German Lloyd people, to Castle Garden and to the conductor of the New York Central emigrant trains—merely asking for special goodwill toward seeing her forwarded. She started off one day like a giantess with a bridal bonnet on her head and a bundle of steerage comforts tied into a gingham sheet. Many an anxious thought traveled after her, but it was three months before a letter came.

"She had waited," she wrote, "until everything was settled, so that she could tell us all. The journey had not been bad, the letters had served magically; she had not once been allowed to miss a train, and everybody had been kind. She had made friends with an emigrant family aboard ship who were also going West, and she had stayed with them until they had reached Chicago, where, sure enough, her lover met her. She should hardly have known him in that first moment, she was glad she wasn't alone, because, just suppose, if it hadn't been he? He had grown stout and brown, and his curls had been shaved off close to his head, and he didn't look like his photograph, even yet; but he was very good to her and glad to see her, and they were married in Chicago between two trains. Now she was at the Black Hills, the only woman in camp, and she had to cook and wash and mend for all the miners—about thirty. It was hard work; much harder than scrubbing, but her husband said she earned her keep and she was happy, and on the whole she was glad she had emigrated, though she couldn't help wishing her husband looked more like his photograph. She ended by saying that she liked the country, she thought it was beautiful; and the people—well, if she hadn't seen for herself, she would never have believed that the Americans could be so fine."

Some Things Every Self-Respecting Householder Should Be Able to Do.

We are used to being told that it is not enough to give mere money to charity, and that our benefactions, if they are to do the most good to us and to those whom they help, must include personal service. We seem to owe a measure of personal service to domestic life as well as to charity, and if we do not pay it, domestic life does not yield to us all that we might get out of it. The ability to do things depends partly upon our willingness to do them now and then. But the ability to do things is power, and power is very sweet to have and to exercise, and that not only in great things, but in small. The man who cannot do the ordinary small tinkering that has to be done from week to week in an ordinary modern house denies himself a consciousness of power which is very cheap at the price it costs. Not to be able to put washers on a leaking water-faucet, to take off or put on gas-burners, and to remedy the simpler maladies of plumbing, is to admit oneself to be the mere occupant, but not the master, of the modern house. To put in glass takes too much time, and altogether it is not as necessary to the modern man as it was to his grandfather that he should know how to be his own glazier. So with most carpenter work. It takes too long to do well any job of consequence; better have in the adept from his shop. And yet some tools and the ability to use them seem to be indispensable to the householder's self-respect. Not to be able to plane the top of a door or the edge of a drawer when it sticks, or to drive a nail straight, or send home a screw without splitting the wood, or fit a key, or mend a child's toy, must involve a humiliating consciousness of inefficiency. Yet there are men who strive to reconcile with self-esteem all these incompetencies, and another more inexcusable than either of them—the inability to run a furnace and raise or lower the temperature of one's habitation at will.—From "The Point of View," in the January number of Scribner's Magazine.

"Believe Me If All Those Endearing Young Charms."

I have a wooden leg. No one would know it. It has seldom troubled me. Sometimes, in fact, it is a convenience; in a crowded horse car, for instance. The stout lady who grinds her heel into one's toe enjoys only a fancied triumph over me, for my wooden leg is always the prominent one on such occasions. Once, alas! it stood in my way, as you shall see.

I was engaged to a lovely girl. You can't think how gracefully I went down on my wooden knee and asked her to be mine. She used to wonder how I could hold her for such a length of time on my poor, long-suffering knee. You see I couldn't bear to tell her that she wasn't engaged to a whole man. She couldn't be expected immediately to see the advantages of a foot that could never have the gout, that could wear the tightest shoe with impunity, and that was exactly as much at her service as my more proper self. So I put it off (not the leg, but my acknowledgement of its existence) till the day before the wedding. Then I determined to make a clean breast of it, like a man of honor. When I have made up my mind, nothing can shake me. I walked to Sophia's house, entered, and found her in the parlor. It was not a time for delay. I rushed up to her, and throwing myself this time on both knees, exclaimed:

"Sophia, I have got a wooden leg!"

The noble creature! She turned ashy pale, and then a lovely pink. After a moment, a smile spread over her beautiful face. She took both my hands and cried:

"O, darling George!" (so she was good enough to call me.) "So have I!"

It was a dreadful shock. I rose and felt one knee tremble beneath me. The other is fortunately proof to all such emergencies. I could hardly believe that one of those refined and delicate feet which I had so often admired was the work of a clumsy artificer. I could not love my Sophia when a part of her was not my own!

"Sophia!" I cried. "You are not all I thought you were!"

Then in a hurried whisper I told her that everything must be over between us. In a man, I said, physical imperfections could be overlooked; but in a lovely woman, never! My eyes streaming with tears, I hurried from the room and into the street. As I passed before the window where she sat, she threw up the sash and called me.

"George!" she cried, "come to think of it, my leg isn't wooden after all!"

Then she shut the window. I rushed back to the door. To my disgust it was locked. Every delay was vexatious till the moment when I should fold my restored darling in my arms. At last the servant appeared. "Miss Sophia says she's out!" And the door was shut. From that moment I have never seen Sophia again.—Boston Budget.

Home, Sweet Home.

At the Congress of Religions at the Columbian Exposition, Frances E. Willard, in her address, uttered the following gem:

"It is said that when darkness settles on the Adriatic sea and fishermen are far from land, their wives and daughters, just before putting out the lights of their humble cottages, go down by the shore and in their clear, sweet voices sing the first lines of the Ave Maria. Then they listen eagerly, and across the sea are borne to them the deep tones of those they love, singing the strains that follow, 'Ora pro nobis,' and thus each knows that with the other all is well. I often think that from the home life of the nation, from its mothers and sisters, daughters and sweethearts, there sound through the darkness of this transition age the tender notes of a dearer song, whose burden is being taken up and echoed back to us from far out amid the billows of temptation, and its sacred words are 'Home, Sweet Home!' God grant that deeper and stronger may grow that heavenly chorus from men's and women's lips and lives. For

with all its faults, and they are many, I believe the present marriage system to be the greatest triumph of Christianity, and that it has created and conserves more happy homes than the world has ever before known.

"Any law that renders less binding the mutual life-long loyalty of one man and woman to each other, which is the central idea of every home, is an unmitigated curse to that home and to humanity. Around this union, which alone renders possible a pure society and a permanent State, the law should build its utmost safeguards, and upon this union the gospel should pronounce its most sacred benedictions. But, while I hold these truths to be self-evident, I believe that a constant evolution is going forward in the home, as in every other place, and that we may have but dimly dreamed the good in store for those whom God for holiest love hath made. In the nature of the case the most that even Christianity itself could do at first, though it is the strongest force ever let loose upon the planet, was to separate one man and one woman from the common herd into each home, telling the woman to work there in grateful quietness, while the man stood at the door to defend its sacred shrine with fist and spear, to insist upon its rights of property, and later on to represent it in the State."

A Smoker's Savings.

Chauncey M. Depew once remarked that he regarded his success in life as due, in a great measure, to his firmness in breaking off the habit of smoking. He enjoyed his cigars as much as did any ardent lover of the weed; but, when he found that smoking interfered with his thinking apparatus, he promptly stopped it.

Luther Prescott Hubbard is another New Yorker who attributes not only his financial success, but his long and contented life, to his total abstinence from the tobacco habit. When a mere lad, he chewed and smoked, but was induced to abandon both the quid and the cigar by the reasoning of a dear friend. For many years Mr. Hubbard has been in business on Wall street, and just after he had passed his eighty-fifth year he printed and circulated a little treatise on "How a Smoker got a Home."

Mr. Hubbard says: "My smoking was moderate compared with that of many, only six cigars a day at 6¼ cents each, equal to \$36.50 per annum, which at 7 per cent interest for sixty-one years amounts to the small fortune of \$118,924.26. This has afforded means for the education of my children, with an appropriate allowance for benevolent objects."

This contented octogenarian began saving his cigar money by depositing it in the Seamen's Bank for Savings. In a few years he had accumulated enough to buy a comfortable home near the city, and overlooking Long Island Sound. During the long period of his patient economy he has been in the receipt of a moderate income.—New York Times.

A Bath that Refreshes and Cleanses.

The following directions are given by a physician: Get enough Turkish toweling by the yard (you can get remnants) to make two pairs of thumbless mittens, just large enough to slip over the thumb and allow to stretch flat; also a large rough towel and a generous supply of tepid water, and, of course, soap, and either another towel to stand on or a piece of oil-cloth four feet square. It is very important to have a warm room, so that the body may not be chilled when you drop your garments. After taking everything off, stand on the oil-cloth or towel in front of your basin, slip your mittens on, and dip them in the water, squeeze the drips from the mittens, soap well and rub the body all over, beginning at the neck and ending with the toes. Take off the mittens, lay them down beside the basin; all the soil of the body will be in those mittens, slip them on and go over your body again, rinsing the mittens several times,

Highest of all in Leavening Power.—Latest U. S. Gov't Report.

Royal Baking Powder
ABSOLUTELY PURE

thus: Take the soap off the arms, then rinse the waist, etc. Bathing thus rests and strengthens a tired body. It takes from eight to ten minutes to wash from top to toe, and to rinse the mittens in a second water, ready for another day. It is well to put them in the air to sweeten, and have them boiled once a week to keep them pleasant.

Meat-Eating and Bad Temper.

One deplorable result of excessive meat eating in England is the ill-temper which is a chronic complaint among us. In no country is home rendered so unhappy and life made so miserable by the ill-temper of those who are obliged to live together as in England. If we compare domestic life and manners in England with those of other countries where meat does not form such an integral article of diet, a notable improvement will be remarked. In less meat-eating France, urbanity is the rule of the home. In fish and rice-eating Japan, harsh words are unknown, and an exquisite politeness to one another prevails, even among the children who play together in the street. In Japan I never heard rude, angry words spoken by any but Englishmen. I am strongly of the opinion that the ill-temper of the English is caused in a great measure by a too abundant meat dietary, combined with a sedentary life. The half-oxidized products of albumen circulating in the blood produce both mental and moral disturbances. Brain-workers should live sparingly if they would work well and live long. Their force is required for mental exertion, and should not be expended on the task of digestion; for they should remember that the digestion of heavy meals involves a great expenditure of nerve force. The healthful thing to do is to lead an active and unselfish life on a moderate diet, sufficient to maintain strength, and not increase weight.—Ernest Hart, in The Hospital.

DOMESTIC ECONOMY.

DRIED BEEF BROILED.—Put nice slices of dried beef on a greased, hot gridiron, and broil till rather crisp, taking care they do not burn. When done place the slices on a hot platter and pour over each slice a little melted butter. This makes a nice dish for luncheon or tea.

BAKED INDIAN PUDDING.—Two quarts of milk, a heaping teaspoon of Indian meal, half a cup of white flour, two eggs, a cup of molasses, a heaping teaspoonful of salt, half a teaspoonful of ginger and the same of cinnamon, and a large tablespoonful of butter to mix it; boil three pints of the milk. Have ready beaten together all the other ingredients (except the eggs) in the remaining pint of milk. Pour the hot milk over them; add the butter, and when cool, the eggs well beaten. Bake in a deep, well-buttered pudding dish, holding at least three quarts. Bake very slowly seven or eight hours. Do not stir, but cover with a plate if it bakes too fast.

SPONGE CAKE.—Take the weight of ten unbroken eggs in sugar and half that weight in flour. Beat the yolks till very light, then add the sugar and beat five minutes; add the rind and juice of one large lemon, or two small ones, and the whites beaten to a stiff froth. Stir in the flour gradually and thoroughly. This measure makes three good-sized loaves. Bake about half an hour in a moderate oven. The oven door must not be opened till the cake is nearly done, as it will be likely to fall. If you wish to make a smaller measure, take the weight of five eggs in sugar and half that weight in flour. Sponge cake should always be broken; never cut it with a knife.

SQUIRREL PIE.—Six squirrels, one-quarter of a pound of salt pork, one pint of oysters, half an onion, salt, pepper, mace and butter. Cut the squirrels into neat joints and put into a stewpan with water enough to cover them; add the pork, cut into slices, and half a medium-sized onion—if the flavor is liked. Cover close and simmer until tender. When done take up the pieces of squirrel, strain the gravy and set both away to get cold. Line the sides of a deep pie dish with a good paste. Put a little gravy in the bottom of the dish, then a layer of squirrel and a few oysters, and some of the oyster liquor, sprinkle with a little flour, season with salt, pepper and a little mace, and cover with bits of butter. Proceed in this manner until the dish is full. Cover with paste, cut a hole in the center and bake half an hour. This makes an excellent and very inexpensive pie. The squirrels can be procured at the butcher's, skinned and cleaned, for five cents a pair. For a pie for a family of four or five persons six squirrels would be required, as there is not much to them except the haunches.

YOUNG FOLKS' COLUMN.

Philip's Success, or What a Boy Can Do.



BRIGHT-FACED, ragged boy of about ten years came to my door one morning. Mittie, who had answered the bell, called to me, "Do come and see what a comic little fellow is here."

When I reached the door there he stood, trying to produce sound from what he called a fiddle, which was of his own construction. It consisted of a few bent sticks tied together with twine, and a bent piece of brass wire for the bow. By hard work, now and then, a little squeaking noise would come from it; then his blue eyes beamed with delight.

I said, "What is your name?"

"Philip," he answered, but added, "The boys call me Phil."

"Have you a father and mother?" I asked.

"Yes, ma'm," he replied, "Father says we must start out early. 'Can't have any idlers in these rooms.'"

"What did your mother say?" I inquired.

"Mother's nice," he evasively remarked.

"Have you brothers and sisters?" I continued.

"Yes, ma'm," he responded. "Lots of 'em, but I ain't got much else."

I gave him for his music two pennies, for which he seemed greatly pleased.

"They will buy," he murmured to himself.

"Buy what?" I asked.

"You see I want to earn money to buy a few bouquets to sell on the street," he continued.

"Oh, you are going into business, are you?"

"Yes, ma'm," was the response.

Several days after in passing through the hall I heard Mittie saying at the door: "Now, go away and don't come here any more."

Then a little voice said, "Please can't I see the mistress?"

"I looked around and there were those blue eyes looking straight at me. I went to him and he showed me with pride his card of flowers. He had arranged them on a piece of cardboard, in imitation of those he had seen on the street, and it was a fit companion-piece to the fiddle. He had earned money to buy six small bouquets, and he told me they cost him less than three cents apiece and he expected to sell them for five cents each.

He often came to the door afterward, but Mittie did not send him away again; she became greatly interested in the young flower merchant's success, and I think sent him many customers.

Once when a number of friends were in the parlor she brought him in to obtain sale for his flowers. He stood and viewed everything, then said: "If ever I git money I'll git things jist like these and give them to mother."

"But," Mittie said, "you came in to sell flowers," which seemed to bring him back to business again.

Some months before, when Mittie came to assist me with general household affairs, she told me her name was Bridget Catherine. After a short time she asked me if she might be called Mittie. I said "Why?"

She replied, "Now, since I live in America, I want to be like the Americans, and they mostly end their names with ie."

I thought it was easy to make that change if it would make her happier, and it was decided to call her Mittie.

Late one Saturday evening Philip came to the house with a small faded bouquet for each member of the family, evidently from stock left over. "I wanted to give you something," he said, "and this was all I had." He seemed pleased at the gift, and we were pleased at the spirit in which it was given, if the value was small. Philip's flowers increased in quantity and quality, and he was quite a prosperous business man.

One day I had been to see a friend and was returning quite late in the evening, when Philip came up to me. He said: "Ain't you afraid? I will walk home with you. It will not be much out of my way."

"Do you live near here?" I asked.

"No, ma'm; but it was rather late when we shut up to-night, and then I had to go on an errand for mother."

"What are you doing now?" I asked.

"You see," he replied, "I have hired a basement window in Baxter street and my sister sells flowers, while I carry them about. I go to night school now, one hour every evening. I'll know how to read yet. If I once git started I can learn myself a good deal."

We had now come to my home and I

thanked him for his kindness. He raised his hat and bade me good-night as politely as any boy of polished manners might have done, and went whistling down the street. He was then about 10 years old.

I did not see Philip for some time after that, but going into the market one day to buy preserving fruit, I met him. "If you buy fruit to-day," he said, "I'd like to take it home for you."

"How can you?" I asked, "I may buy several kinds."

"I have a wheelbarrow now," he replied, "and brother Dick watches it while I go and get things. It is out on the corner. They won't let me bring it in when the market is crowded."

"Where did you get your wheelbarrow?"

"Bought an old one and mended it myself. It didn't cost much money."

"But what have you done with the flower business?" I queried.

"Given it to my sister," he answered. I made my purchases and Philip was prompt to take charge of the baskets. I observed that he was a favorite with the market-men, often doing some little act of kindness for them. If a whip dropped he would run to pick it up. If a poor woman was trying to cross the street with a heavy basket he would help her over, and many other little acts of thoughtfulness to lighten others' burdens. Those blue eyes seemed to take in everything. Now and then one would speak gruffly to him if he chanced to cross his path. It is said, "There is a soft spot in every man's nature," and so there is.

I followed the boys as they came with the fruit. When nearly home three little roughs came up. "See here, give us some fruit," said one. "Give us some o' them air peaches," said another, and they began pulling at the covers of the baskets.

"Let them alone," said Philip; but they did not heed his order. He stopped, doubled his fist and sent the oldest reeling in the gutter; the others ran away. He then started on with his load as though nothing had happened. After that not a word passed between him and his brother. They reached my house and safely delivered the freight.

Philip's market business seemed to prosper, and I was surprised when going out one morning I saw him standing on the corner near my house with a satchel in his hand, evidently ready for a journey. When I came to him he said: "I am going West. I thought I should like to tell you."

"Going West, and alone?" I said.

"Yes, ma'm; I have an uncle in the West, but I don't exactly know where," he added.

"Then how will you find him? The West is a large place to look over," I said.

"It won't matter much whether I find him or not, for I expect to take care of myself."

"Who will bring things from the market for me now?"

"Oh, Dick will do it for you. I have given everything to him and our little brother John helps him." With a cheerful good-by he said: "I'll do the best I can." He was then 14.

Years passed and I heard good reports from Philip through his brother. I knew he would do well wherever he went. He was not one of those who stand and wait for chance to turn the wheel of fortune; he turned it himself.

I hardly expected to see him again. But one day in the busy season (and it was unusually crowded wherever I went), I was waiting to cross Fifth avenue and I saw on the other side a tall, attractive-looking young man who seemed to be watching me. He soon came over.

"Can I help you across?" he asked, which he did very politely after I replied, "Yes, thank you."

I was going on when I thought I noticed a disappointed expression on his face. I turned to look, then he came forward and said, "I think you have forgotten Philip." My surprise was ill-concealed; he must have read my thoughts, for he looked both amused and gratified. He said his employer had sent him to New York on business, and he was then on his way to the depot to return West.

Time has gone on, and now in one of the largest churches in the thriving city of C—a fine organ peals forth its grand music; the leader comes forward, a man whose hair is slightly sprinkled with gray; his general appearance is pleasant. All eyes are turned toward him as his rich, melodious voice leads the people in sacred song. It is not alone the popular young preacher who fills the church every Sabbath, but lovers of music come a long distance to worship in song.

"What is there in his music," whispered a girl to her friend, "that is so spiritual, so soul-stirring?"

"It is not the music," said her friend. "It is heartfelt worship in song."

The leader is Philip.

From being a poor little bouquet peddler, through perseverance, honesty, labor and a determination to rise in the world, he educated himself, cultivated his voice, and became a successful iron merchant in the West.—E. H. H., in American Cultivator.

DIAMONDS!

GENUINE AND FIRST QUALITY.
Warranted Pure White and Perfect, and of Extreme Brilliancy.

This diagram shows the approximate sizes of the stones

1/16	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	3	4	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100
1-16 carat.....\$4 00	1-8 carat.....\$8 00	3-16 carat.....\$12 00	1-4 carat.....\$16 00	5-16 carat.....\$20 00	3-8 carat.....\$24 00	7-16 carat.....\$28 00	1-2 carat.....\$32 00	5-8 carat.....\$36 00	3-4 carat.....\$40 00	7-8 carat.....\$44 00	1 carat.....\$48 00	1 1/8 carat.....\$52 00	1 1/4 carat.....\$56 00	1 1/2 carat.....\$60 00	1 3/4 carat.....\$64 00	2 carat.....\$68 00	2 1/4 carat.....\$72 00	2 1/2 carat.....\$76 00	3 carat.....\$80 00	4 carat.....\$84 00	5 carat.....\$88 00	6 carat.....\$92 00	8 carat.....\$96 00	10 carat.....\$100 00	12 carat.....\$104 00	14 carat.....\$108 00	16 carat.....\$112 00	18 carat.....\$116 00	20 carat.....\$120 00	22 carat.....\$124 00	24 carat.....\$128 00	26 carat.....\$132 00	28 carat.....\$136 00	30 carat.....\$140 00	32 carat.....\$144 00	34 carat.....\$148 00	36 carat.....\$152 00	38 carat.....\$156 00	40 carat.....\$160 00	42 carat.....\$164 00	44 carat.....\$168 00	46 carat.....\$172 00	48 carat.....\$176 00	50 carat.....\$180 00	52 carat.....\$184 00	54 carat.....\$188 00	56 carat.....\$192 00	58 carat.....\$196 00	60 carat.....\$200 00	62 carat.....\$204 00	64 carat.....\$208 00	66 carat.....\$212 00	68 carat.....\$216 00	70 carat.....\$220 00	72 carat.....\$224 00	74 carat.....\$228 00	76 carat.....\$232 00	78 carat.....\$236 00	80 carat.....\$240 00	82 carat.....\$244 00	84 carat.....\$248 00	86 carat.....\$252 00	88 carat.....\$256 00	90 carat.....\$260 00	92 carat.....\$264 00	94 carat.....\$268 00	96 carat.....\$272 00	98 carat.....\$276 00	100 carat.....\$280 00

I will retail these stones at the above wholesale prices and mount them in the latest styles in Rings, Pins, Studs, Ear Screws, Combination sets, etc., at cost of gold and labor.

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HAYWARD'S SHEEP DIPS

Hayward's famous Paste and Liquid Dips received the Highest Award at the World's Columbian Exposition, also the Prize Medal at the California State Fair. Dips from all over the world were exhibited at Chicago and practical sheep men pronounced Hayward's the best and most effective medicine for the cure of scab and general benefit to wool.

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PATRONS OF HUSBANDRY.

Random Thoughts.

By A. P. ROACHE, W. M. S. G. of California.

A selfish heart can never know
The sweets which from true friendship flow.

New York has thirty thousand grangers, who co-operate in numerous ways and make their business pay. But she is the *Empire State*. When California has her "thirty thousand," and when they co-operate, to the extent of establishing a few centrally located selling points, in charge of live, wide-awake business patrons, and discard the suicidal policy of every farmer trying to be his own salesman, the grange and grange business will pay something handsome in California, too.

Prosperity in any of the affairs of life can only be secured through earnest, honest work, mentally and physically combined. A great deal of this valuable commodity is promised this year, in behalf of the good old grange, by sisters and brothers who mean exactly what they say.

One of the prime essentials to the successful operation of every farm is that the farmer shall be a careful reader of one or more agricultural papers. In this way alone can he keep abreast of the advancement and experimental progress of his calling, and the avoidance of costly and unproductive crop ventures. Remember that one published in your county or State deals directly with those industries in which you are interested, and hence is the most valuable.

The old year has fled like a foiled shark, leaving here and there a ripple on the surface of events, cut by the keen edge of its ugly fin deep into the history of this Columbian year. The New Year, with its hopeful greeting, its unsolved problems and promised rewards, is before us. Let every citizen of our glorious commonwealth assist in driving the plow of thought and labor into the active affairs of life, and the blues will vanish like a feather before a hurricane, and hard times will be shorn of half their sting.

The Executive Committee of California State Grange will meet in San Francisco at 10:30 o'clock Tuesday, Jan. 9th, 1894, for the transaction of important business. Many patrons who have valuable plans and suggestions to offer will be present, and a general conference and discussion of vital interest to the order is expected.

Lecturer's Notes.

Does Industry Need Protection?

The above is the general topic for January. Doubtless the prompt comment of many has been: "This is a political topic and will involve partisan discussion, which is forbidden by the fundamental law of our order." But that is not all the truth. First, last and all the time it is an economic question, and it is simply incidental that two great political parties have ranged themselves on the one and the other sides of it. It still remains to be determined whether, under what circumstances and to what extent industry needs protection, if at all.

One thing in particular has encouraged me to ask the attention of the Patrons of California to this subject, and that is the admirable candor and judicial temper with which the editor of the *RURAL PRESS* considers vexing questions from an "independent standpoint." If he, why not others? The *RURAL PRESS* is not a partisan journal, and it would be suicidal to use its columns to partisan ends; hence the editor gives his views concerning many of the subjects over which politicians are struggling without betraying his political sympathies. Let us search for the facts without regard to who champions or antagonizes them. The important thing is to know for ourselves what to champion and what to antagonize.

Probably the great majority of those who will read these notes have never made any attempt at a judicial and impartial investigation of this subject. They have listened to campaign speakers when some general election was drawing on, usually to the speakers on only one side, or read the party paper for which they subscribed. That is about the sum total of their education on this most important question. The amount of misinformation obtainable in that way is unlimited. Such speakers and journals are working to win. Party platforms are framed to "get in" on and not to stand on. The orators and editors of either party do not hesitate at the grossest misstatement if they think it will serve their ends. Whoever depends upon them for his education concerning political issues will soon find himself

illustrating Josh Billings' aphorism: "It is better not to know so much than to know so many things wrong." It will be marvelous how many things he will know wrong. Yet reliable sources of information are always available; good sense and candid judgment, properly exercised, are rarely misled.

Again, forbidden to indulge in partisan discussion in our granges, does it follow that we can bring no influence to bear upon political results; that we must tamely consent to be ground between the upper and nether millstones of partisanship, with no attempt at self-assertion? For one I do not see how many of the specifications in our great Declaration of Purposes are to be attained without bringing a strong influence to bear on political action. This can be done without entering the arena of acrimonious political debate.

It would appear that farmers, "united," as they are, "by the strong and faithful tie of agriculture," might arrive at substantial agreement relative to all the questions that concern the interests and prosperity of their industries by a thorough investigation and study of the whole subject. The fact that their interests are everywhere practically identical will tend strongly to lead them to common conclusions. Once farmers know exactly where they stand—what convictions and demands they are determined to insist upon—and let their position be known, they will instantly command respectful attention in political quarters. They are too strong to be ignored if it is understood that they will act on given questions with substantial unanimity. Hitherto we have followed political guides instead of economic guides. Hence, being divided, we have been powerless. All that should be relegated to the past. Henceforth we should investigate and determine for ourselves. No body of people in the country are better able to do so intelligently and dispassionately. We are the more bound to do this because we are really responsible for the welfare of all the people. When we guard our own interests and assure our own prosperity we promulgate a decree of universal prosperity. Let our granges, therefore, be made schools for the study of economic questions—in every one of which we are directly interested. Every grange could own and study a few standard works on political economy, and the practical good sense of farmers would do the rest.

At the beginning of this note it was my intention to give a few hints upon the topic for January discussion; but the general line of remark which I felt called upon first of all to pursue has extended beyond what I anticipated, and I have not yet ascertained to what extent I may intrude upon the space of the *RURAL PRESS*. To carry out my full plan at this time would transgress too far the limits which I might presume to ask.

S. G.,
Lecturer S. G. of Cal.

Oakland, Dec. 27, 1893.

(Continued on page 18)

A Steuben County Miracle.

A YOUNG LADY'S GRATEFUL ACKNOWLEDGEMENT OF A TIMELY RESCUE.

Miss Lillian Sparks Restored to Health and Strength After Medical Aid Had Failed—Her Condition that of Thousands of Other Ladies Who May Take Hope from Her Story.

(From The Hornellsville Times.)

Painted Post is the name of a pretty little village of one thousand inhabitants, situated on the line of the Erie Railroad, in Steuben county, two miles from Corning, N. Y. The name seems an odd one until one learns the circumstances from which it was derived. When the first settlers came here from Pennsylvania, all this beautiful valley was heavily wooded, and abounded in many kinds of game, and was a favorite hunting ground for the Indians who then claimed exclusive right to the territory. An object which attracted the attention of the first settlers and excited their curiosity, was a painted post which stood prominently in a small clearing skirted by great spreading trees. It was painted red, as some supposed with blood, and evidently commemorated some notable event in Indian life. And so from this incident the place naturally took its name.

Your correspondent only knew Miss Lillian Sparks, daughter of Mr. James W. Sparks, by name. On inquiring at the postoffice for her father's residence, we learned that he lived on the road to Hornby, five miles from Painted

Post village. "And," said a young man who overheard the conversation with the postmaster, "it is his daughter who was so sick that the doctors gave her up and she was cured by Pink Pills." And the young man volunteered to guide me to Mr. Sparks' home. So getting a horse we started in the storm, with the mercury ranging at zero, for a five-mile drive over the snow-drifted roads of Hornby Hills. When we reached our destination we found a very comfortably housed family, consisting of Mr. and Mrs. Sparks, one son and five daughters. The oldest of the daughters, Miss Lillian, twenty-two years old, is the one your correspondent had gone out there expressly to see. This is the story told by Miss Sparks to your correspondent in the presence of her grateful and approving father and mother, and is given in her own language:

"Yes, sir, it is with pleasure that I give my testimony to the great value of Dr. Williams' Pink Pills. I was ill for four years, doctoring nearly all the time but without any benefit. I had six different doctors: Dr. Heddon, Dr. Purdy and Dr. Hoar of Corning, Dr. Butler of Hornby, Dr. Remington of Painted Post, and Dr. Bell of Monterey. They said my blood had all turned to water. I was as pale as a corpse, weak and short of breath. I could hardly walk, I was so dizzy, and there was a ringing noise in my head. My hands and feet were cold all the time. My limbs were swollen, my feet so much so that I could not wear my shoes. My appetite was very poor. I had lost all hope of ever getting well, but still I kept doctoring or taking patent medicines, but grew worse all the time. Last September I read in the *Elmira Gazette* of a wonderful cure through the use of Dr. Williams' Pink Pills for Pale People, and I thought I would try them. I did so, giving up all other medicines and following the directions closely. By the time I had taken the first box I was feeling better than I had been in a long time, and I continued their use until now, as you can see, and as my father and mother know, and as I know, I am perfectly well. I don't look the same person, and I can now enjoy myself with other young people. Indeed, I can't say too much for Dr. Williams' Pink Pills, for I am sure they saved my life. I have recommended them to others, who are using them with much benefit, and I earnestly recommend them to any one who may be sick, for I am sure there is no medicine like them. I am entirely willing you should make any proper use of this statement of my sickness and cure by Dr. Williams' Pink Pills." In further conversation, Miss Sparks said she fell away during her sickness so much that she only weighed 80 pounds, while now she weighs 107.

"I suppose," said her father, "that it was overwork that made her sick. You see we have 400 acres of land, keep 35 cows, and there is a great deal to be done, and Lillian was always a great worker and very ambitious until she overdid it and was taken down."

The facts narrated in the above statement were corroborated by a number of neighbors, who all express their astonishment at the great improvement Dr. Williams' Pink Pills have worked in Miss Sparks.

Dr. Williams' Pink Pills are a perfect blood builder and nerve restorer, curing such diseases as rheumatism, neuralgia, partial paralysis, locomotor ataxia, St. Vitus' dance, nervous headache, nervous prostration and the tired feeling resulting therefrom, the after effects of la grippe, influenza, and severe colds, diseases depending on humors in the blood, such as scrofula, chronic erysipelas, etc. Pink Pills give a healthy glow to pale and sallow complexions, and are a specific for the troubles peculiar to the female system; in men they effect a radical cure in all cases arising from mental worry, overwork or excesses of any nature.

These Pills are manufactured by the Dr. Williams' Medicine Company, Schenectady, N. Y., and Brockville, Ont., and are sold only in boxes bearing the firm's trade mark and wrapper, at 50 cents a box, or six boxes for \$2.50, and are never sold in bulk or by the dozen or hundred, and any dealer who offers substitutes in this form is trying to defraud you and should be avoided.

What "Smith" Did He Mean?

A bright New Yorker won a bet that he could get exactly the same answer to the same question from fifty people. He asked them if they had heard of Smith's failure, and every one of the fifty inquired, "What Smith?"

In like manner when people are told they can get roses by mail, if they are bright they will ask, "what roses?"

If they have not learned that there are roses and roses, they should get The Dingee & Conrad Co's New Guide to Rose Culture and become posted. This Company makes a specialty of sending the famous D. & C. roses everywhere by mail. They are "on their own roots," which is another peculiarity, and how good they are may be inferred from the fact that they have made the Company the largest rose-growers in the world. The book will be sent to any flower-lover on request, and early applicants will get beside a sample copy of the Company's magazine, "Success with Flowers." The address is West Grove, Pa.

—The State Treasury is rapidly being filled with gold received from the counties of the State on account of the first installment of taxes. The counties that have settled so far, together with the amounts, are as follows:

Placer.....	\$40,388	11	Yolo.....	\$83,019	02
Tehama.....	43,336	12	Plumas.....	9,674	50
Solano.....	89,678	29	Lake.....	18,377	00
Napa.....	63,459	01	Humboldt.....	78,019	55
Orange.....	38,301	26	Siskiyou.....	27,104	38
Glenn.....	44,515	04	Trinity.....	5,674	60
El Dorado.....	17,849	55	Tuolumne.....	13,779	40
Madera.....	20,646	38			
Nevada.....	14,083	15	Total.....	\$607,596	36

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WOOL, GRAIN, FLOUR

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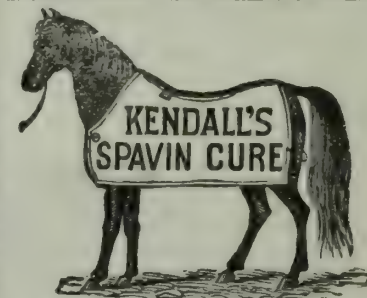
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Only Award of Gold Medal and Diploma at the World's Fair, Chicago.



The Most Successful Remedy ever discovered as it is certain in its effects and does not blister. Read proof below.

KENDALL'S SPAVIN CURE.

STAR, LAKE CO., OREGON, Feb. 8th, 1892.

Dr. B. J. KENDALL CO.,

Dear Sirs:—I have used your KENDALL'S SPAVIN CURE for the last twelve years never being without it but a few weeks in that time and I have made several wonderful cures with it. I cured a Curb of long standing. Then I had a four year old colt badly sweened; tried every thing without any benefit, so I tried your liniment, and in a few weeks he was well and his shoulder filed up all right, and the other, a four year old that had a Thoroughpin and Blood Spavin on the same joint, and to-day no one can tell which leg it was on. These statements can be proven, if necessary; the four year olds are now seven and can be seen any day at Cottage Grove, Or.

—Price \$1.00 per bottle.

DR. B. J. KENDALL CO.,

Roxburgh Falls, Vermont.

SOLD BY ALL DRUGGISTS.

AGRICULTURAL NOTES.

CALIFORNIA. Humboldt.

Creameries are multiplying. In addition to the new one projected in the lower Niggerhead section and a second one near Arcata, the *Enterprise* tells that W. N. Russ intends to establish a creamery on a large scale on his Bunker Hill dairy in the Bear river country. The uniform success of those now being operated is an incentive to add to the number. The grain farmer, says the *Enterprise*, harvests one crop a year and holds it for a remunerative price (which does not always come before a new crop is ready to gather). The dairy farmer markets his crop and receives his money every month. His output keeps money in circulation and times in the dairying communities comparatively easy.

Standard: It is reported that while potatoes grown on high lands turned out remarkably well and show no indications of decay, there are many instances in which lowland crops, grown in damp soil, are either rotting badly or are entirely worthless. These reports come from Eel river valley. Whether the blight referred to has taken hold of that crop in the Arcata section no data by which to judge has yet been received. To lose a part of or his entire crop by decay while the present prices rule would not be deemed a great calamity by the average farmer, for the quoted figures leave little or no margin after freight, wharfage and commissions are paid, but if good, paying prices should prevail later in the season he might promise himself to never again engage in potato culture. In Eel river valley at the present time the best potatoes of any variety can be had for \$13 per ton.

Los Angeles.

Pomona Progress: With a tomato that weighed four pounds, a green orange that pulled the scales down to a pound and a half, a sugar beet as big as an elephant's hind leg, a wedding cake seven stories high and fluted with carmine cinnamon drops, a bouquet as large as a peck measure, a hen's egg with a girth of about eight inches, a Chino cucumber a yard long and as crooked as a ram's horn, and a cornstalk that reached to the second-floor windows—with such gracious bestowments as these, who couldn't be happy? It's worth one's while to have been a newspaper man this season.

Pomona Progress: If the farmers of this region had ordered the rain that has visited this part of California in the last week, they could hardly have had a better or more timely one for agricultural purposes. The ground is in exactly the proper condition for farming and horticultural work, and there is sufficient moisture in the earth to last for several weeks. The rain has come gradually, and all of it has soaked into the earth. The total rainfall in Pomona valley to date has been 7.89 inches. That is one-half the average total rainfall in each winter for years. The precipitation of rain in the past week has been 3.63 inches. The heaviest rain of the season has been that on Tuesday night, when nearly an inch and one-quarter fell in 12 hours.

Mendocino.

Beacon: The prospects for a large yield of hay and grain are most encouraging on this coast at present. Never before have the prospects at this season of the year been more favorable. The rain fallen has been just enough to put the ground in good condition for plowing, and then held off long enough to permit of sowing. Grain is already coming up and in some fields is several inches high.

Monterey.

Bradley Mercury: The farmers in this section are now happy, it having rained an inch or over for the storm.

Salinas Index: Charles Louis of San Miguel canyon is one of the expert fruit-growers of that rapidly developing fruit section. He informs us that at his place fruit will dry in the sun quicker than at San Jose. During the past season he dried apricots thoroughly in three days in the sun.

Riverside.

San Jacinto Register: There is considerable talk by several of our farmers about planting three or four hundred acres to the sugar beet this season, as a test. The Southern California Railway Co. (Santa Fe system) have made our farmers a special rate to the factory at Chino. The Santa Ana farmers make on an average \$30 to \$50 per acre net on their crop of beets each year. Their market is the Chino factory.

Press: R. H. Howard planted a few cotton seed last July on his place near Victoria bridge, and to-day he brought to this office a stalk covered with large bunches of the white cotton.

Cor. San Jacinto Register, Dec. 26: Our Fruit Exchange has shipped (including three cars getting ready) 14 cars of oranges to date. Not much more will be done till after New Year, as the fruit is still too green. A new style of shipping, in a specially prepared car, is now on exhibition here, and threatens to revolutionize things generally. If adopted, it will do away with all boxes, wrapping and packing. It will also prolong the keeping qualities of the orange two or three weeks in the Eastern markets. The car is fitted up with trays made of open slats, holding 150 pounds each. These trays are the width of the car and slide on castors in grooves in the side of the car. A car will hold 24,000 pounds net of oranges. The shipper pays no freight on the trays, so that no expense is incurred except for actual weight of fruit. This also saves all cost of wrapping, packing and boxes. If it works, it will be a big thing for the growers, but will make box-furnishers, makers and packers "look down their noses."

Santa Cruz.

Pajaronian: One of the fruit-packers of this valley has a carload of apples in cold storage in San Francisco, and he expects to sell them at a good price when the Midwinter Fair is in full swing next month. It costs 50 cents per box for cold storage.

Pajaronian: Five carloads of slough potatoes have been shipped from here to Texas. They brought 40 cents a sack at the local depot.

Pajaronian: The biggest half day's run of the season was made at the factory Monday, 428 tons of beets having been crushed in 12 hours.

Surf: It is often remarked that "the last is the best," and so it seemed to us when we opened the dainty box of dried prunes left at the Surf office by W. W. Waterman from his Fairview farm near Glenwood. Mr. Waterman usually captures the sweepstakes prize at the fair for the best and greatest variety of products from one farm, and last year his exhibit was photographed and a handsome engraving of the same published in the *RURAL PRESS*. While displaying great variety, he has made a specialty of table grapes, but his prune orchard now promises to be a source of both pride and profit. The prunes presented to the Surf were magnificent in size, well cured and of excellent flavor entirely beyond comparison with any foreign fruit.

Pajaronian: All of the sugar beets of the Pajaro valley district have been delivered at the factory. There are yet over 3000 tons undelivered on the Salinas—mainly on the Moro Cojo ranch. There are enough beets in the bins to run the factory to the middle of next week, providing the storm prevents further delivery of the Salinas beets.

Pajaronian: That was a mammoth beef which hung in front of O. S. Tuttle's shop during the holiday display. It dressed over 1300 pounds, and cost—landed here—over \$100. It was a present from the employees of the shop to Bony, and he was as proud of it as if it had been a quarter section of Pajaro's best sediment land. Oscar Buob showed himself an artist with the knife in the lettering on the beef and sheep.

Santa Barbara.

Independent: The new olive mill of the Montecito Manufacturing Company was put in operation this week, and this year's oil is now being turned out in large quantities. The machinery is of the best type and the oil is something superior. This year's work of the mill will be something wonderful. Olives are being hauled to Montecito from this and Ventura counties by the ton. T. R. More has made the largest sale of any individual rancher; he has delivered sixteen tons to the company. The next largest record is eight tons. The olives are of a superior quality. The Montecito Manufacturing Company was incorporated some months ago, with W. P. Gould as president and T. P. Izard secretary. They have started an industry which promises great things.

Sonoma.

Preparations for the great show to be held in Petaluma during February by the California State Poultry Association are progressing finely. Fanciers in all parts of America, and not a few in foreign countries, are greatly interested in the Petaluma show, says the *Petaluma Courier*, and many of them will be here as exhibitors and spectators. The entries are already so numerous that the question of how to handle the birds is getting to be a very serious problem. That they will be handled, however, and in the best of style, too, may be relied upon. Past experience has shown conclusively that Petaluma poultrymen are hard to swamp when it comes to taking care of a big collection of fine fowls, so no one need keep his feathered pets at home through fear that they will not be taken care of at the Petaluma show.

Santa Rosa Democrat: A correspondent from Peachland writes that last week, while Mr. Eperly and Mr. Tilden were chopping wood, the fork of a large oak tree fell to the ground, disclosing to view the three-spiked horns of a deer, imbedded two feet deep in the timber. The horns were evidently placed there when the tree was small, and the wood grew around them.

Cloverdale Reville: The indications are that there will be a very large increase in acreage in

hops in Sonoma county the coming year. It will not be surprising if there will be 500 acres of new hops. The present year and last year have been pretty good hop years for the Sonoma county growers, and that accounts for the increased acreage. While prices were not up to the high-water mark this year, they were up to a fairly remunerative figure.

Santa Rosa Democrat: There has not been as much rain this season as last, but it has been so well distributed that all kinds of farm work are more advanced than usual, and crops are in a much better condition than ordinarily at this time of the year. There is a large area seeded in wheat, barley and oats, all of which is much advanced and looking well. The pasturage is uncommonly good. It is too soon to form any opinion on the fruit crop, but a good year for general farming is, as a rule, good for fruit.

Stanislaus.

Santa Maria Times: Miller & Lux, the largest range cattle owners in California, are growing miles of Egyptian corn on their land south of Newman, and are now cutting it for feed. One thousand head of cattle are being fed daily with Egyptian corn.

Tulare.

The *Enterprise* has the following from Arthur J. Hutchinson, Lindsay: I want you to know that a week before Thanksgiving I picked and shipped to San Jose a box of ripe, sweet oranges, and I really think that by December 1st half my crop was ready to market. Let me tell you another thing about getting early oranges, much depends upon irrigating at the right time. I don't know just when that is for certain, but I should like to hear the question discussed and attention paid to it.

Tulare Times: Thomas Jacob sent to the Times office a few delicious pears of the Pat Barry variety. He says this variety of pears keeps better and longer than any other. This must be true, for those sampled were picked and stored over two months ago, and were indeed hard to excel.

The *Enterprise* has made the following estimate of the orange crop in the Tulare River country: Porterville 4000 boxes, Plano 600, Frazier and Pleasant Valley 350, and Lindsay 50 boxes.

Tulare Times, Dec. 28: Frank Baker arrived from Pixley this morning, where he has been running his rain-making machine for the last seven days. He reports that the barometer began to go down after the first 12 hours' work, and the third day brought the first rain. It began sprinkling this morning about 2 o'clock and had rained about seventy-five hundredths of an inch to the date of leaving.

Tulare Times: Louis Gill came down from Frazier yesterday with a load of oranges raised on his father's place, the old H. M. White ranch, where stands the oldest lemon and orange trees in the county. He met with considerable success in selling the oranges, which are among the finest seen in the county. They are Seedlings, but equal in all ways to the grafted fruit, for orange trees grow like willows in Frazier.

Ventura.

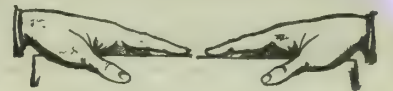
Santa Paula Chronicle: Wm. O'Hara has a female hog that exhibits marked peculiarities of a generous nature. In the pen with her are several of her pigs and two calves. The sow will give the pigs their dinner, then lie down in such a way as to let the calves have a good square meal of warm milk. Both pigs and calves are doing well.

Yolo.

The *Woodland Democrat* is in receipt of a box of oranges and lemons from the orchard of R. O. Armstrong of Capay. The fruit is large, luscious and of a very rich color, and demonstrates beyond any reasonable doubt that Capay valley soil and climate will produce as fine citrus fruit as any valley in the State. Mr. Armstrong now has 30 acres of orchard, principally almonds, and will plant 30 acres more this season.

You Dye in 30 minutes

Turkey red on cotton that won't freeze, boil or wash out. No other will do it. Package to color 2 lbs., by mail, 10 cts.; 6, any color—for wool or cotton, 40c. Big pay Agents. Write quick. Mention this paper. **FRENCH DYE CO., Vassar, Mich.**



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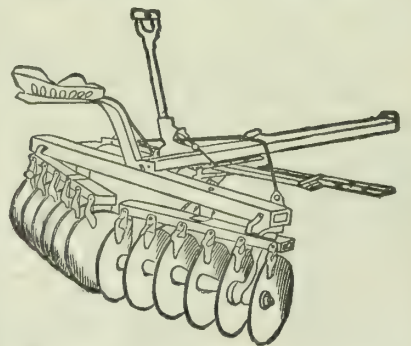
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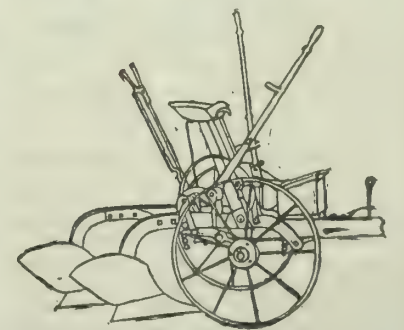
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Because it is more
profitable to some
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ENTOMOLOGICAL.

Insect Pests and Remedies.

One of the most interesting papers read at the recent Farmers' Institute at Visalia was one written by I. H. Thomas of that city, a member of the State Board of Horticulture, entitled "Insect Pests and Remedies." Mr. Thomas' essay is given in full below:

An essay on the insect pests of the central San Joaquin valley must necessarily be short, from the fact that this region is fortunately exempt from the numerous evils of scale insects and other diseases that find suitable conditions in the more humid coast counties of the State for their increase and development. Our warm, dry summers are more certain in checking the increase of the "black scale" than all the formulas and carefully prepared tree washes and patent nostrums, or even the nimble *Rhizophagus*. Still, the conditions can be produced by man, on a small scale, that make it possible to find a few straggling enemies even in this rich and favored land. The only place I have found the black scale to thrive here is on orange trees or oleander bushes on a lawn or grass plot, where the ground is damp and cool from frequent sprinklings. The "soft orange scale" can also be found on the orange, the lemon, rose bushes, and a few other ornamental plants, but not in numbers to do or cause any harm.

Both of these scales can be easily subdued, and the remedy can be found in every house. This is simply one-fourth of a pound of laundry soap dissolved by boiling in one gallon of water and applied with a syringe or spray pump, at a temperature of 100 degrees Fahrenheit. The most effective time is soon after the young have hatched, and this is during the summer; but the work can be deferred until September. A cheaper remedy, if a large number of trees have to be treated, would be the resin wash, but this requires considerable care in its preparation. The proportions are: Resin, 18 pounds; caustic soda (70 per cent), 5 pounds; whale or fish oil, 2½ pounds; water to make 100 gallons of solution. To properly prepare this, a 50-gallon farmer's boiler is necessary. Place the resin, fish oil and caustic soda together with 20 gallons of water in the boiler and cook thoroughly over a brisk fire for at least three hours; add a little hot water occasionally until you have about 50 gallons. Never use cold water to dilute with before you have this amount, or the resin will settle to the bottom. Pour the hot mixture into the spray tank, and then add cold water to make the 100 gallons.

A remedy that is already prepared is a great saving of time and annoyance to the fruit-grower. The one that we have experimented with and had good results from is "Brown's Insect Exterminator." Full directions for using this, and the necessary amounts for the different scales or insect pests, are sent out with the exterminator.

Another pest that is found, but to a very limited extent, in the valley is the "cottony cushion scale," that did so much damage to the orange and lemon orchards of Los Angeles county a few years ago. This is a soft insect with a white, corrugated, cottony egg-sack. It attacks a greater variety of plants and trees than the other scale insects, and breeds rapidly, each female producing from 500 to 1000 eggs. Such an increase, and the fact that the native plants and weeds were good pasture for this pest, made it expensive warfare to try to keep it down. The introduction of the Australian ladybug, *Vedalia cardinalis*, was a grand achievement, for in one year from their introduction they had increased and were distributed to all parts of the State where the "cottony cushion scale" was found, and the latter has now no terrors for the orchardist.

If you find this scale Major C. J. Berry will place a colony of the *Vedalia* on your trees, or you can address a letter to the State Board of Horticulture in San Francisco, and a colony will be mailed to you. In the latter case it would be advisable for you to send specimens of the scale so that there will be no mistake, for this ladybug will not feed on any other scale.

The pernicious or San Jose scale got a start in the valley a few years ago—introduced on nursery stock—and spread to other trees and orchards, causing a great amount of damage and loss to the deciduous-fruit growers. It was here that the famous "lime, sulphur and salt remedy" originated, and was extensively used as a winter wash against this scale. This remedy is acknowledged to be one of the best winter washes, as it is also a good fungicide. Within the past three years Nature has come to our relief, and this scale is now kept in check by

a very small "brown-necked ladybird" and the twice-stabbed ladybird; so that it is in very rare instances that spraying is done for the San Jose scale.

The insects that have given us the most trouble are the "red" and "yellow mites," or spiders. They are so small that they can just be seen by the naked eye. The winter eggs are deposited on the trunks and branches, and hatch as soon as the trees leaf out in the spring. They increase rapidly in our dry atmosphere, and are general feeders, and are serious pests on the almond, prune, walnut, apple, etc., and occasionally injure orange and lemon trees. They spin a very delicate web on and attack the leaf by tearing the epidermis. A tree thus attacked soon has a blanched or sickly appearance; the inner leaves drop and the tree becomes stunted.

The different summer washes will kill the spiders, but the cheapest and most effective remedy is sulphur, applied with sulphur bellows; or a more expeditious way is that in use in the Rio Bonito orchards in Butte county. There they have fixed up a broadcast seeder, mounted on a wagon, and the feed and discharge are so arranged that the sulphur is thrown in a cloud in one direction, and three to six rows are thoroughly dusted in the time necessary to drive between the rows. The best time for this work is the very early morning, and, if possible, when a little moisture is on the leaves. The sulphur is not really an insecticide, but acts as a repellent. It is sometimes necessary to give a second treatment. If the sulphuring is attended to in time the trees will retain their leaves for at least two months longer than the untreated ones.

"Codlin moth" demands attention in order that we may reap some benefit from our apple and pear orchards. Unlike most of our insect pests this one does not injure the vitality of the tree, but destroys the market value of the product. A few years ago the great fight was made against codlin moth by trapping the larvæ and destroying the chrysalis found under the rough bark of the trunks or branches. This procedure was not at all successful, as enough moths would escape to deposit eggs on and destroy fully 50 per cent of the fruit. Now we go to them in a different way, and strike at the very weakest stage of their existence, that is, as soon as they hatch from the egg and before they burrow into the fruit.

The remedy is Paris green—one pound to 200 gallons of water. To be efficient this must be properly mixed and applied. Take the Paris green and make a paste before it is placed in the spray tank. In this way it mixes better with the water. The next important point is to keep the water constantly stirred when spraying, not simply an occasional dash, but keep a man or boy at it as long as the work lasts. This is the only satisfactory way to have the poison evenly distributed. This work must be done soon after the fruit is set and before it turns down. A second application three weeks later should be given. Enough solution should be used to each tree to thoroughly moisten it without running off.

If the fruit was troubled with pear crackling or apple scab the previous year, a fungicide should be used in combination with the Paris green. A very good mixture is to dissolve 25 pounds of sulphate of copper in 20 gallons of water; slack 20 pounds of lime in water and then add this, strained, to the copper solution; pour into the tank and add one pound of Paris green and sufficient water to make 200 gallons. Keep it constantly stirred, as before suggested. In applying this a nozzle having a rubber disk is preferable to brass.

Several vineyards in the valley have been seriously damaged by the caterpillars of the large sphinx moth, sometimes called "humming-bird moths," that are noticed toward evening hovering over verbenas and petunias, while they sip the nectar from the flowers. They are in the winged form the end of April and during May, and deposit their eggs singly on the leaves. The egg is fastened to the leaf by a glutinous substance, and a few days after they hatch out small caterpillars, with a dark hair or spine near the posterior extremity. They grow rapidly and, if not checked soon, devour all the foliage. When full grown they enter the loose ground and change to the chrysalis, and remain in this condition until the following spring. The most satisfactory method of fighting this pest is hand picking, or use a pair of scissors and cut them in two.

Plowing and cultivating the vineyard during the winter with a disk harrow will destroy numbers of the chrysalis, if gone over several times with the latter implement. A friend remarked to me the other day that he was going to turn a lot of hogs into his vineyard, in hopes that they would root out the chrysalis and destroy them. It could soon be ascertained whether or not the "porkers"

will be likely to assist in the work by placing a few chrysalides within their reach.

The "cut worm" is another pest of the vineyard; they also attack prune and other trees. The trees can be protected from their depredations by placing a band of stout paper round the stem and smearing it with printers' ink in which a little castor oil has been mixed. The oil prevents the ink from drying so quickly. This should be renewed at least twice a week while the worms last. As they work at night they cannot be handled like the sphinx-moth caterpillars. During the day they burrow into the loose soil a short distance; this can be scratched over and the worms destroyed. Paris green can be used as a spray, but can hardly be recommended in a vineyard.

Those are the principal insects that we have any experience with, and I desire to impress upon the farmers and fruit-growers the necessity of guarding against the introduction and spread of new pests and plant diseases into our valley. When you purchase trees or plants don't be afraid that your horticultural inspector, or, as the law designates him, "Quarantine Guardian," will swoop down on you and inspect them to see that they are free from pests. Don't remove them from the depot surreptitiously, but inform him before hand, and when they arrive invite him to make a thorough examination, for it will cost less to clean them before planting than after, and may save your own and your neighbors' orchards from ruin.

\$100 Reward, \$100.

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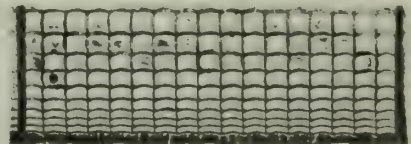
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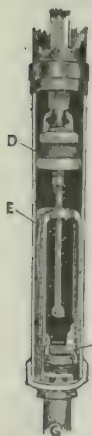
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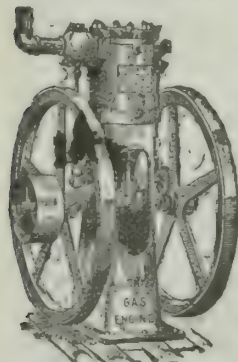
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Put up in SIFTING-TOP CANS, so that any quantity may be used and the balance preserved unimpaired.

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USED AS DIRECTED it will take the place, and at 75% less cost, of all other alkaline preparations, soaps, etc., now on the market. ONE CAN will make 10 to 12 lbs of Hard Soap, or 200 lbs of soft Soap. See directions in can.

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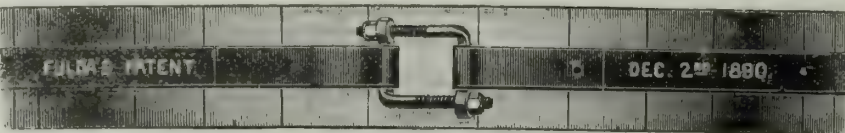
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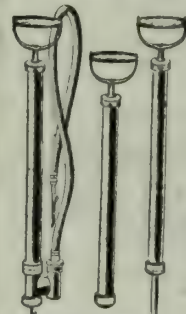
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Manufactured by G. LISSENDEN.

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This implement will take up and carry its load to any desired distance. It will distribute the dirt evenly or deposit its load in bulk as desired. It will do the work of Scraper, Grader, and Carrier. Thousands of these Scrapers are in use in all parts of the country.

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Price, all Steel, four-horse, \$40; Steel two-horse, \$31. Address all orders to G. LISSENDEN, Stockton, California.

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PHILIP KOEHLER, Manager.

S. F. MARKET REPORT

Market Review.

WEDNESDAY MORNING, Jan. 3, 1894.

The year opens on a tame wheat market. The conditions remain as at the date of our last report, business being especially dull owing to the interruptions growing out of the holiday time. Quotable at \$1.02½ per cwt. for No. 1 shipping grades, with \$1.03½ for more choice quality. Milling wheat keeps steady at \$1.05 to \$1.10 per cwt. There are intimations of better activity in the immediate future, although there is nothing very encouraging to offer as to prices. The speculative markets have been so broken up by the holidays that they yield no instruction, and for that reason the usual tables of sales on Call are omitted.

Barley.

There is steady tone to the market, though nothing in the way of buoyancy prevails. Dealers will likely be well satisfied if demand enough should spring up in the near future to make perceptible inroads on stocks. We quote: Feed, 72½¢ @ 73½¢ cwt. for fair to good quality, 75¢ for choice bright; brewing, 77½ to 87½¢ per cwt.

Dried Fruits.

Market quiet, with no indications of any immediate change. We quote as follows: Apples, 3½¢ @ 4½¢ lb for quartered, 3½¢ @ 4½¢ for sliced, and 70¢ @ 75¢ for evaporated; Pears, 50¢ @ 55¢ lb for bleached halves, and 40¢ @ 45¢ for quarters; bleached Peaches, 50¢ @ 55¢; sun-dried peaches, 40¢ @ 45¢; Apricots, Moorpark, 11½¢ @ 12½¢; do Royals, 11½¢ @ 12½¢ for bleached and 60¢ @ 70¢ for sun-dried; Prunes, 4½¢ @ 4½¢ lb for the four sizes, and 30¢ @ 40¢ for ungraded; Plums, 4½¢ @ 50¢ for pitted and 1½¢ to 20¢ for unpitted; Figs, 3 to 4¢ for pressed and 1½¢ to 2½¢ for unpressed; White Nectarines, 5 to 6¢; Red Nectarines, 4 to 5¢ lb.

RAISINS—We quote: London Layers, \$1 to \$1.25; loose Muscates, in boxes, 75¢ to \$1; clusters, \$1.50 to \$1.75; loose Muscates, in sacks, 2½¢ to 3½¢ lb for 3-crown; 2 to 2½¢ for 2-crown; dried Grapes, 1½¢ to 20¢ lb.

General Produce Market.

OATS—The new year opens fairly well. The inquiry is good for the season, with reasonable prospects for improvement. We quote as follows: Milling, \$1.12½ @ 1.20; Surprise, \$1.20 @ 1.30; fancy feed, \$1.17½ @ 1.20; good to choice, \$1.10 @ 1.15; common to fair, 97½¢ @ 1.07½; Black, 85¢ @ 1.22½; Red, \$1 @ 1.15; Gray, \$1 @ 1.10 cwt.

CORN—Trade is rather slow. Quotable at 80¢ @ 85¢ cwt. for large Yellow, 90¢ @ 95¢ for small Yellow, and 90¢ @ 92½¢ for White.

CRACKED CORN—Quotable at \$20.50 @ 21.50 per ton.

CORNMEAL—Millers quote feed at \$20 to \$21 per ton; fine kinds for the table, in large and small packages, 2½¢ @ 3½¢ per pound.

OILCAKE MEAL—Quotable at \$35 per ton from the mill.

SEEDS—We quote: Mustard, brown, \$3 @ 3.25; Yellow, \$3.50 @ 4; Canary, imported, \$4 @ 4.25; do, California, —; Hemp, 3½¢ @ 4 lb; Rape, 1½¢ @ 2½¢; Timothy, 6½¢ per lb; Alfalfa, 8½¢ @ 9¢ per lb; Flax, \$2.25 @ 2.50 per cwt.

CHOPPED FEED—Quotable at \$17.50 @ 18.50 per ton.

MIDDLINGS—Quotable at \$18 @ 21 per ton.

MILLSTUFFS—We quote: Rye Meal, 30¢; Graham Flour, 30¢; Oatmeal, 4½¢; Oat Groats, 50¢; Cracked Wheat, 3½¢; Buckwheat Flour, 50¢ @ 55¢; Pearl Barley, 40¢ @ 45¢ per lb; Normal Nutrient, \$3 per case of 1 dozen cans; Breakfast Delight, \$3.25 per case of 2 dozen packages.

BRAN—Quotable at \$16 @ 17 per ton.

HAY—Receipts are not large, but are ample to meet all current wants. Quotations are undisturbed. We quote: Wire-bound hay sells at \$1 @ 2 per ton less than rope-bound hay. Following are wholesale city prices for rope-bound Hay: Wheat, \$10 to \$13.50; Wheat and Oat, \$10 @ 12.50; Wild Oat, \$10 @ 12; Alfalfa, \$8 @ 10; Barley, \$9 @ 11; Compressed, \$11 @ 12.50; Stock, \$8 @ 10 per ton.

STRAW—Quotable at 45¢ @ 55¢ per bale.

HOPS—Dealers do not look for any active trade for the next week or two. Quotable at 16¢ @ 18½¢ lb.

RYE—Quotable at \$1 @ 1.02½ cwt.

BUCKWHEAT—Quotable at \$1.25 @ 1.40 cwt.

GROUND BARLEY—Quotable at \$16.50 @ 17.50 per ton.

POTATOES—Supplies are heavy, with prices weak. We quote: New Potatoes, 20¢ @ 30¢ per lb; Sweet, 85¢ @ 1 per cwt; Garnet Chiles, 55¢ @ 65¢; Early Rose, 50¢ @ 60¢; River Burbanks, 35¢ @ 50¢; River Red, 50¢ @ 65¢; Salinas Burbanks, 70¢ @ 85¢ cwt.

ONIONS—Quotable at \$1 @ 1.15 cwt.

DRIED PEAS—We quote: Green, \$1.50 @ 1.65; Blackeye, \$1.60 @ 1.75; Niles, \$1.50 @ 1.60 cwt.

BEANS—Trade dull with steady holding of strictly desirable stock. No sale for poor goods. We quote: Bayos, \$1.90 @ 2.05; Butter, \$1.75 @ 1.90 for small and \$2 @ 2.10 for large; Pink, \$1.30 @ 1.65; Red, \$1.75 @ 2.10; Lima, \$2 @ 2.12½; Pea, \$2 @ 2.20; Small White, \$1.90 @ 2.05; Large White, \$1.90 @ 2 cwt.

VEGETABLES—Green peas are dull and slow of sale. Asparagus moves off fairly well. Rhubarb is in light receipt. Trade generally is of quiet order. We quote as follows: Asparagus, 10¢ @ 17½¢ lb; Mushrooms, 8¢ @ 20¢ lb; Rhubarb, 50¢ @ 70¢ lb; Green Peas, 30¢ @ 35¢; String Beans, 8¢ @ 12¢; Marrowfat Squash, \$7 @ 8 per ton; Green Peppers, 8¢ @ 10¢ lb; Tomatoes, 25¢ @ 75¢ box; Turnips, 75¢ @ 1 cwt; Beets, 75¢ @ 1 cwt; Parsnips, \$1.25 @ 1 cwt; Carrots, 40¢ @ 50¢; Cabbage, 50¢ @ 55¢; Garlic, ¼¢ @ 10¢ lb; Cauliflower, 60¢ @ 70¢ dozen; Dry Peppers, 50¢ @ 70¢ lb; Dry Okra, 12½¢ @ 15¢ per lb.

FRESH FRUIT—Supplies of Apples continue in excess of market wants, much of the offerings still being of poor quality. We quote prices as follows: Apples, 75¢ @ 1.25 per box for good to choice, and 25¢ @ 65¢ for common to fair; Lady Apples, 75¢ @ 1 per box; Pears, 25¢ @ 50¢ per box for common and 75¢ @ 1.25 for choice; Persimmons, 40¢ @ 75¢ per box; Cranberries, Eastern,

\$6.50 @ 8.50 per bbl; do Coos Bay, \$3.25 @ 3.75 per box.

GRAPES—Receipts are small, but there is no demand. Quotable at 25¢ @ 50¢ box.

CITRUS FRUIT—Oranges are very slow of movement, while prices shape altogether in favor of buyers. Domestic Lemons are also more or less neglected. We quote as follows: Fair to choice Navel Oranges, \$1.50 @ 2.50 per box; Seedlings, \$1 @ 1.50; Vacaville Oranges, small boxes, 50¢ @ 65¢; Mandarin Oranges, 65¢ @ 1 per box; Mexican Oranges, \$2.25 @ 2.50 per box; Mexican Limes, 50¢ @ 70¢ per box; Lemons, Sicily, \$4 @ 5; California Lemons, 11¢ @ 12¢ for common and \$2.25 @ 3 for good to choice; Bananas, \$1.50 @ 2.50 per bunch; Hawaiian Pineapples, \$2.50 @ 3; Mexican Pineapples, \$3 @ 4 per dozen.

NUTS—We quote as follows: Chestnuts, 8¢ @ 10¢ lb; Walnuts, 6½¢ @ 7½¢ for hard shell, 8¢ @ 8½¢ for soft shell and —¢ @ —¢ for paper shell; Chile Walnuts, 8¢ @ 9¢; California Almonds, 11¢ @ 12¢ for soft shell, 50¢ @ 60¢ for hard shell and 12½¢ @ 13½¢ for paper shell; Peanuts, 3½¢ @ 4½¢; Hickory Nuts, 50¢ @ 60¢; Filberts, 10¢ @ 10½¢; Pecan, 8¢ @ 9¢ for rough and 11¢ for polished; Brazil Nuts, 10¢ @ 11½¢; Coconut, \$4 @ 5 per 100.

HONEY—No activity to the market and none expected for a time. We quote: Comb, 10½¢ @ 11¢ lb for bright, and 8¢ @ 10 for dark to light amber; light amber, extracted, 4½¢ @ 5¢; dark, 4½¢ @ 5¢; water white, extracted, 50¢ @ 55¢ lb.

BEESWAX—Quotable at 22¢ @ 23¢ lb.

BUTTER—Another drop in prices marks the opening of the new year. Arrivals are free. We quote: Creamery, 28¢ @ 30¢; fancy dairy, 25¢ @ 27¢; good to choice, 22½¢ @ 24¢; common grades, 17¢ @ 22¢ lb; picked roll, 19¢ @ 21¢; firkin, 18¢ @ 19¢; Eastern lard-packed, 17¢ @ 18¢ lb.

CHEESE—Choice quality shows firmness, there being no large stocks of such product. Common grades are plentiful and easy in price. We quote as follows: Choice to fancy new, 11½¢ @ 12½¢; fair to good, 9¢ @ 10½¢; Eastern, ordinary to fine, 11¢ @ 14¢ lb.

EGGS—The demand is anything but urgent, and stocks diminish very slowly. We quote: California ranch, 27¢ @ 30¢; store lots, 23¢ @ 26¢; Eastern Eggs, 21¢ @ 23 for ordinary and 24¢ @ 25¢ per dozen for good stock.

POULTRY—Turkeys are falling back again and the general market is beginning to ease off once more, owing to expected Eastern imports. We quote: Live Turkeys—Gobblers, 13¢ @ 14¢ lb; Hens, 13¢ @ 14¢; dressed Turkeys, 18¢ @ 20¢; Roosters, \$4.50 @ 5.50 for old and \$5 @ 6.50 for young; Fryers, \$4.50 @ 5; Broilers, \$4 @ 5; Hens, \$5 @ 6.50; Ducks, \$5.50 @ 6.50; Geese, \$1.50 @ 2 per pair; Pigeons, \$1 @ 1.50 per doz.

GAME—The demand this morning was light, and buyers had matters their own way. We quote as follows: Quail, \$1 to 1.25 per doz; Canvasbacks, \$3 @ 6; Mallard, \$2.50 @ 3; Widgeon, \$1 @ 1.25; Teal, \$1 to 1.25; Sprig, \$1.75 @ 2; Small Ducks, \$1; Gray Geese, \$2 @ 2.50; White Geese, 75¢ @ 1; Brant, \$1 @ 1.25; English Snipe, \$2 @ 2.50 per doz; Common Snipe, 75¢ @ 1 per doz; Honkers, \$3 @ 3.50; Hare, \$1 to 1.25; Rabbits, \$1 @ 1.50 per doz.

PROVISIONS—We quote as follows: Eastern hams, 12¢ @ 15¢ lb; California hams, 11¢ @ 12¢; Bacon, Eastern, extra light, 15¢ @ 16½¢; medium, 11¢ @ 11½¢; do, light, 12¢; do, light, clear, 13¢ @ 13½¢; light, medium, boneless, 12½¢; Pork, extra prime, \$13 @ 13.50; do, prime mess, \$14 @ 15; do, mess, \$21 @ 22; do, clear, \$20 @ 20.50; do, extra clear, \$21 per bbl; Pigs' Feet, \$12.50 @ 13 per bbl; Beef, mess, bbls, \$7.50 @ 8; do, extra mess, bbls, \$8.50 @ 9; do, family, \$9.50 @ 10; extra do, \$11 @ 11.50 per bbl; do, smoked, 10¢ @ 10½¢; Eastern lard, tierces, 7½¢ @ 8½¢; do prime steam, 10¢; Eastern pure, 10-lb pails, 11¢; 5-lb pails 11½¢; 3 lb, 11½¢; California, 10-lb tins, 10½¢; do, 5-lb, 11¢; do, kegs, 11½¢ @ 12¢; do, 20-lb buckets, 11¢; compound, 8¢ for tierces and 8½¢ for hf bbls.

WOOL—Much interest is manifested in the convention of wool-growers that will be held in this city on the 10th inst. Trade quiet. We quote spring:

California, year's fleece, 70¢ @ 75¢; do 6 to 8 months, 70¢ @ 80¢; do Football, 10¢ @ 11¢; do Northern, 12¢ @ 13¢; do extra Humboldt and Mendocino, 11¢ @ 13¢; Nevada, choice and light, 12¢ @ 14¢; do heavy, 8¢ @ 10¢; Oregon, Eastern, choice, 10¢ @ 12¢; do Eastern, poor, 70¢ @ 90¢; do Valley, 12¢ @ 15¢. We quote fall: Free Mountain, 60¢ @ 70¢; Northern defective, 50¢ @ 70¢; Southern and San Joaquin, 30¢ @ 50¢.

HIDES AND SKINS—Quotable as follows:

	Sound.	Culls.
Heavy Steers, 57 lbs up, ½ lb.	50¢ @ 55¢	40¢ @ 45¢
Medium Steers, 48 to 56 lbs.	40¢ @ 45¢	30¢ @ 35¢
Light, 42 to 47 lbs.	30¢ @ 35¢	20¢ @ 25¢
Cows, over 50 lbs.	30¢ @ 35¢	20¢ @ 25¢
Light Cows, 30 to 50 lbs.	20¢ @ 25¢	10¢ @ 15¢
Stags.	20¢ @ 25¢	10¢ @ 15¢
Kips, 17 to 30 lbs.	10¢ @ 15¢	5¢ @ 10¢
Veal Skins, 10 to 17 lbs.	5¢ @ 10¢	4¢ @ 5¢
Calf Skins, 5 to 10 lbs.	5¢ @ 10¢	4¢ @ 5¢

Dry Hides, usual selection, 6½¢ @ 7¢; Dry Kips, 6½¢ @ 7¢; Calf Skins, 6½¢ @ 7¢; Cull Hides, Kip and Calf, 4¢; Pelts, Shearling, 10¢ @ 20¢ each; do, short, 25¢ @ 35¢ each; do, medium, 40¢ @ 50¢ each; do, long wool, 50¢ @ 75¢ each; Deer Skins, summer, 25¢; do, good medium, 15¢; do, winter, 50¢ per lb; Goat Skins, 25¢ @ 40¢ apiece for prime to perfect, 10¢ @ 20¢ for damaged, and 5¢ @ 10¢ each for Kids.

TALLOW—We quote: Refined, 5¢; rendered, 4½¢ @ 4¾¢; country Tallow, 4½¢ @ 4¾¢; Grease, 3½¢ @ 3¾¢ per lb.

San Francisco Meat Market.

Following are the rates for whole carcasses from slaughterers to dealers:

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Secretary's Column.

A meeting of the executive committee of California State Grange will be held Tuesday, Jan. 9, 1894, at 10:30 A. M., for the purpose of transacting such business as may properly be brought before it.

Subordinate granges are reminded to get themselves in proper shape for receiving the A. W. All members must be clear on the books of their respective granges, or in other words have their dues paid up to Dec. 31, 1893, before they are entitled to the evidence of good standing.

We have not as yet mailed all the Sixth Degree certificates, owing to not having the necessary pasteboard tubes for mailing, which have been ordered from San Francisco, and, as soon as they are received, will immediately mail to their respective destinations.

Inquiry regarding the organization of a subordinate grange in the State of Nevada has been received at this office, and the required information forwarded.

We have received the quarterly reports of Florin, March, Stockton, Petaluma, Lockeford, Glen Ellen, Grimes, Merced, Yuba City and Hollister Granges for the quarter ending Dec. 31, 1893; also cash from the respective granges.

Sebastopol and Bennett Valley Granges will install their officers Jan. 6th at their respective places of business. A Harvest Feast and general good time is expected at both places.

Owing to the holidays, very little grange news has been received, outside of elections held and the receipt of quarterly reports, which in most cases is strictly business. I hope that all secretaries and members will furnish this office with all grange news in their respective districts, as we find it very difficult to write grange news without having the required information from your several localities.

Let us all endeavor to commence this year in good shape, and furnish our official organ weekly with good, fresh, readable news. Let us hear from all sections of the State.

Wishing you one and all a happy New Year, I remain, yours fraternally,
DON MILLS, Secretary.

Grange Elections.

TWO ROCK, No. 152.—Master, W. D. Houx; Overseer, Sister E. C. Hinshaw; Lecturer, Geo. W. Gaston; Steward, J. C. Schwobeda; Assistant Steward, J. R. Denman; Chaplain, S. Q. Barlow; Treasurer, C. Nisson; Secretary, R. W. Andrews; Gate-Keeper, M. C. Freeman; Ceres, Sister M. A. Gaston; Pomona, Sister J. R. Doss; Flora, Sister Alice Harvey; Lady Assistant Steward, Sister C. Hunt; Trustee, H. Church. Date of installation, Jan. 4, 1894.

PETALUMA, No. 23.—Master, D. Walls; Overseer, M. D. Hopkins; Lecturer, H. Johnson; Steward, Mrs. D. M. Winans (re-elected); Assistant Steward, W. M. Deckson; Chaplain, D. G. Heald; Treasurer, A. S. Hall (re-elected); Secretary, Mrs. T. Skillman; Gate-Keeper, C. D. Grover; Ceres, Mrs. F. F. Ennis; Pomona, Mrs. J. W. McNally; Flora, Miss Mary Kelsey; Lady Assistant Steward, Mrs. W. M. Dickson; Trustee, G. W. Park. Date of installation, Jan. 13, 1894.

GLEN ELLEN, No. 299.—Master, Mrs. M. A. Miner; Overseer, C. A. Kennedy; Lecturer, J. V. Miner; Steward, Benj. Clawson; Assistant Steward, H. J. Chauvet; Chaplain, Mrs. M. A. Zane; Treasurer, J. M. Zane; Secretary, Electa Z. Bones; Gate-Keeper, C. H. W. Brunning; Ceres, Mrs. Hendley; Flora, Miss Lottie Howard; Pomona, Miss E. Kurtz; Lady Assistant Steward, Miss Minnie Brunning. Installation of officers Jan. 6, 1894.

GRIMES, No. 293.—Master, H. D. Strather; Overseer, G. Beckley; Lecturer, Mrs. C. P. Wilson; Steward, A. A. Thayer; Assistant Steward, J. H. Kilgore; Chaplain, Mrs. T. Watson; Treasurer, Mrs. Gleason; Secretary, F. G. Schilling; Gate-Keeper, W. W. Kilgore; Pomona, Miss Nettie Howell; Flora, Miss Sadie Vau; Ceres, Miss Liza Rose; Lady Assistant Steward, Miss Anna Balsdon; Trustee, J. M. Dixon.

SOUTH SUTTER, No. 207.—Master, Chas. Brown; Overseer, Frank Donaldson; Lecturer, Jessie Donaldson; Steward, H. J. Grunewald; Assistant Steward, Ella Decker; Chaplain, M. E. Donaldson; Treasurer, John W. Jones; Secretary, Francis F. Purinton; Gate-Keeper, Annie Howsley; Ceres, Della Sankey; Pomona, Lucy Purinton; Flora, Edna Jackson; Lady Assistant Steward, Cornelia Purinton; Trustee, Chas. Brown. Date of installation, Jan. 27, 1894.

MARCH, No. 280.—Master, T. M. Bruce; Overseer, Lizzie Sterenson; Lecturer, Aaron Pugh; Steward, Ida Fairlee; Assistant Steward, M. J. Sterenson; Chaplain, Mrs. E.

Young; Treasurer, W. T. Lam; Secretary, Jennie Clyma; Gate-Keeper, J. H. Myers; Ceres, Mrs. Kingsbury; Pomona, Irene Kingsbury; Flora, Mrs. M. T. Lam; Lady Assistant Steward, Clara Fairlee; Organist, N. A. Sterenson; Trustee, J. H. Myers.

Lecturer's Notes.

TO THE EDITOR:—The virtual promise of further hints upon our January topic has been forestalled by the editor's comments on the "Wilson Bill" and "Minority Report," in the RURAL PRESS for Dec. 30th. Instead of the further exercise of my own pen, I earnestly recommend California patrons carefully to read the editor's keen and pointed paragraphs. They will find there the hints I contemplated giving, along with some other valuable considerations that will greatly aid the study of the question, "Does Industry Need Protection?" Politicians are using it for party advantage. Neither party giving it fair and unprejudiced attention. It remains for the farmers and workingmen to do so. It is for us to understand and maintain the right without fear or favor. Personally I thank Editor Holman for saving me a fraction of time that is valuable to a busy man.

S. GOODENOUGH,
Oakland, Jan. 2, 1894. Lecturer C. S. G.

Man's Place in Nature.

President David Starr Jordan of the Stanford University lectured last week at Golden Gate hall in this city on "Man's Place in Nature." "Huxley's essay, published 15 years ago, really tells all that the scientists of to-day know," said the speaker. "No positive new light has been thrown on the subject since then. The study of heredity has been taken up to a great extent, scientists preferring to work upon something which will give results, of which the study of man's origin has not been particularly productive. Homology is the stamp of heredity, and the nearness of blood relationship is proportioned to the closeness of homology."

"At one time, when teaching in an Eastern medical college, an alligator from Florida was given me to dissect for the students. They crowded around, all expectant as I dissected the beast, anticipating the sight of some unusual internal organs. But none of any marked prominence were found. The students had to look most carefully to notice a slight difference in the heart and diaphragm of the alligator to those of a human being. Homology has but one explanation. We believe we are all descended from the common stock, and have but one reason for believing so. By the law of continuity, if in 999,999 species of life homology means blood relationship, it must indicate the same in all other cases."

"Darwin concluded that if each species arises through natural law by processes of orderly change, then man must have thus arisen. The homology of man with the ape family indicates common heredity. Hence both man and apes are from some simian stock; not the same as any apes now living, for all show marks of divergence, but from some stock that we could call monkeys; a stock, according to Darwin, that were arboreal, hairy, long-armed and had moving, pointed ears. On this latter peculiarity there exist at this day men who can move their ears in a like manner to Darwin's prehistoric man-ape. Darwin thought also that man at one time had a tail, and the latter-day theory is that human beings still have tails, which have shrunk away so as not to project beyond the skin. The question as to what has become of the tail is one of later development, but as many monkeys were and are tailless, argument is productive of nothing."

"A group of man primates may be said to be composed of lemurs or semi-apes, new world monkeys, old world monkeys and man. In general structures man goes with the old world monkeys. One great authority so grouped the higher order of mammals, and took the stand that the orang-outang was more akin to man than the common monkey. The lemurs or semi-apes were monkeys without any of the mischievous or cunning habits of the latter-day monkey. In special development lies the great hiatus between lemurs and apes. Another division apparent is the low or high brain capacity of the lemurs as against that of man and the new world monkeys. In the lemurs it was wholly undeveloped. Man goes with higher forms, as an old world ape. If we were not a prejudiced party, and not our own classifiers, we would not hesitate in acknowledging our brotherhood to these creatures."

"Now touching upon an attempt to separate man as a group from other primates: The difference in structural distinctions is

slight. In the embryo man and all animals the tail is just alike. The hair—extremely specialized in higher races. Some are well covered, all monkeys are so, and the hair cells on our bodies are the same as those of monkeys. Toes—monkeys have used their great toe as a finger for climbing, and that member has always showed out prominently. In an Asiatic race at this day the great toes stand out larger than the others. Attitude—that of man becomes more erect, but the apes still shamble and shuffle along. The jaw—that of the larger apes is greater than the human jaw, but in the smaller monkeys there is not so great a difference. The prominence of the eyebrows goes with the development of the jaw, and skulls of the larger apes have been obtained the eyebrows on which were plainly visible looking on the back of the skull. The brain in normal man is much larger than in the normal ape. The brain of man is growing. Admittedly so. Then on that admission we must allow that original man's brain was no bigger than an ape's. A big monkey's brain of this age will compare very favorably with that of some pigmy men of Africa.

"Mental differences, speech—All races of man have some forms of speech. The higher animals sing, roar, growl or emit noise. As to a monkey's speech, we must wait till the result of Professor Garner's investigations are all known. Garner insists that apes can talk and that he can follow their speech, and until evidence to the contrary is forthcoming his statement must stand."

"The use of tools—The most primitive man knew the use at least of flints for producing fire; monkeys have not been known to use flints or any tools to prepare anything. They may sometimes use an article for some visible purpose, such as to throw a tool, but no more. Affection—The possession of it by man needs no reference to. Apes show affection by jealousy, and Rudyard Kipling, in a true story, describes the exhibition of a tragic power in a monkey's affection. The intelligence shown by an ape is that of a narrow-minded, short-sighted old man."

"My own belief is that man was a nomadic ape, but not hairy-tailed. That man's body came from the lower ape forms is likely, but the intellect had an introduction quite separate." The professor concluded his lecture by quoting the closing paragraphs of Darwin's well-known "Descent of Man."

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The book is sent post-paid at the reduced price of 75 cents per copy, in cloth binding. Address DEWEY PUBLISHING CO., Publishers "Pacific Rural Press," 950 Market St., San Francisco.

List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR WEEK ENDING DECEMBER 12, 1893.

- 510,668.—SELF-LAYING TRACK—A. P. Anderson, Oriental, Nev.
 510,674.—DUMPING CAR—D. P. Cameron, S. F.
 510,675.—SAFETY GUARD FOR CARS—L. P. Clarke, Alameda, Cal.
 510,699.—TYPEWRITER—W. S. Cross, Portland, Ogn.
 510,592.—TURN-TABLE—E. W. Edwards, S. F.
 510,593.—SIGNAL FOR CABLE ROADS—E. W. Edwards, S. F.
 510,594.—AIR BRAKE—J. Erdody, S. F.
 510,779.—LUBRICATOR—L. Fawcett, Eureka, Cal.
 510,638.—ELEVATOR—H. B. Gale, S. F.
 510,786.—FURNACE DOOR—E. W. Harris, Palisade, Nev.
 510,802.—GATE—J. E. Knapp, Brownsville, Ogn.
 510,810.—TABLET—A. Marks, S. F.
 510,847.—CONDUIT—J. P. Mitchell, S. F.
 510,649.—CLOSET TANKS—C. Omersbagen, Portland, Ogn.
 510,521.—PIPE ORGAN—F. F. Shoenstein, S. F.
 510,824.—HUCKLE—F. B. Southworth, Marysville, Cal.
 510,822.—CASH REGISTER—E. T. Taylor, Oakland, Cal.
 510,454.—BAR ROUNDING MACHINE—Wagner & Beauregard, S. F.
 22,964.—BADGE DESIGN—J. L. Sale, S. F.

FOR THE WEEK ENDING DEC. 19, 1893.

- 510,679.—GAS ENGINE—Barrett & Daly, S. F.
 511,109.—HAY-LOADER—F. M. Bird, Wenatchee, Wash.
 511,117.—AIR COUPLING—S. C. Brown, Niagara, Or.
 511,075.—HYDRAULIC TIME APPARATUS—J. F. Franke, San Ana, Cal.
 511,298.—BRAKE SHOE—J. T. Hall, S. F.
 511,149.—FILTER—O. K. Lamb, S. F.
 10,19.—TOY—J. D. Latimer, S. F.
 511,243.—SELF BINDER—J. M. Laurence, Mew Whatcom, Wash.
 511,052.—LAMP DRAFT REGULATOR—J. W. Lawson, San Bernardino, Cal.
 511,054.—LAMP-FILLER—J. W. Lord, Cucamonga, Cal.
 511,304.—PAVING BLOCK—E. T. Map I, Antioch, Cal.
 511,444.—TELEGRAPH RELAY—F. P. Medina, S. F.
 511,057.—TOOL-HOLDER—F. Obols, Ventura, Cal.
 511,249.—HOLLOW TILE, Etc.—C. P. Oudin, Spokane, Wash.
 510,990.—STAMP STEM GUIDE—T. Pilkington, S. F.
 510,886.—CATAPULT—C. W. Renear, Stockton, Cal.
 511,54.—ELECTRIC RAILWAY—W. S. Smith, Berkeley, Cal.
 510,944.—STRINGING PLANOS—C. S. Weber, San Jose, Cal.

NOTE.—Copies of U. S. and Foreign patents furnished by Dewey & Co. in the shortest time possible (by mail or telegraphic order). American and Foreign patents obtained and general patent business for Pacific Coast inventors transacted with perfect security, at reasonable rates, and in the shortest possible time.

Whence the Water of the Great Lakes.

Where do the waters of Lake Michigan come from? is an old question, and it is a question as old as the artesian wells, says the Chicago Herald. Where do their waters come from? Colonel Foster, an eminent civil engineer, for many years in charge of Government interests on the lake, was fond of talking on the first subject. "Every drop of those waters," he was often heard to declare, "came from the Rocky mountains." His theory was that they were brought here subterraneously, but he never, to our knowledge, marked out the course of the subterranean stream.

He announced that as his conviction long before—indeed, he died before—the sinking of artesian wells in Chicago, and the consequent discovery of the now undoubted fact.

William B. Ogden held the same view, and used at times to make himself very interesting in expatiating upon it. With him, as well as with Colonel Foster, it was no more than a theory, but he adhered to it firmly.

Mr. Cregier, who is scientific before he is a politician, is wont to talk approvingly of the theory in a manner to convince any man.

The phenomenon is the running out of this lake through the others of the easterly chain and over Niagara Falls of an incalculable quantity of water, and this continually every minute in the hour, every hour in the day, every day in the year, and every year in progressive time!

The lake has no visible inlets; where, then, does it get its replenishment? From the Rocky mountains.

Through rents and crevices, down into caverns at the roots of these mountains, pour ever the waters from melting snow. Four thousand feet they sink to strike a gravity incline that levels with their floor under Chicago.

Under this city and elsewhere on the west side of Lake Michigan this is the proved theory, theory as good as proved—the snow-covered Rocky mountains are constantly sending their waters to supply flowage and evaporation that is ever going forward in the watery expanse.

—The Southern Pacific earnings for 1893 will make a gratifying showing. In 1892 the gross earnings amounted to \$48,972,000 and the operating expenses were \$31,288,000, giving the net result of \$17,684,000 to the good. The operating expenses for this year will aggregate about the same as last year, and though the officers of the company admit that they look for a slight decrease in the net earnings they think the falling off this year will be very slight. The difference will certainly be smaller proportionately than was shown at the end of October in this year, for the reason that the November and December receipts were much in excess of the receipts of those months last year.

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They run 3 and 4 to the pound. The Largest and Finest fruit of the Apricot variety.

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50,000 TOKAY GRAPE ROOTS,

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BY EDWARD J. WICKSON, A. M.

Assoc. Prof. Agriculture, Horticulture and Entomology, University of California; Horticultural Editor PACIFIC RURAL PRESS, San Francisco; Sec'y California State Horticultural Society; Pres. California State Floral Society; Etc.

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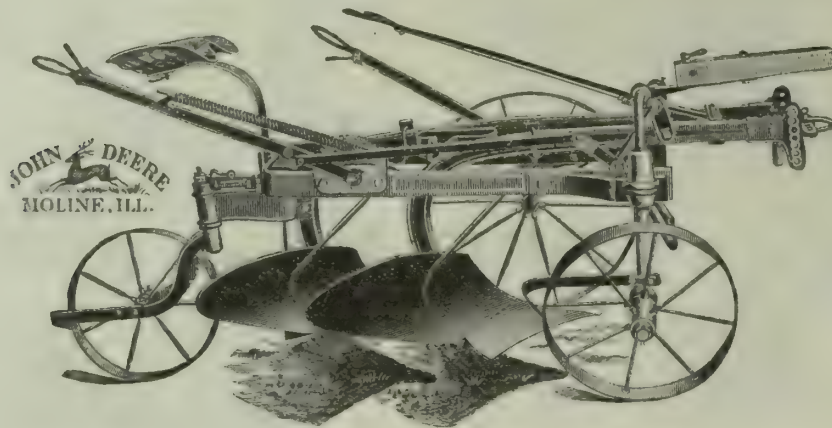
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To quote the Pacific Rural Press of August 5th:

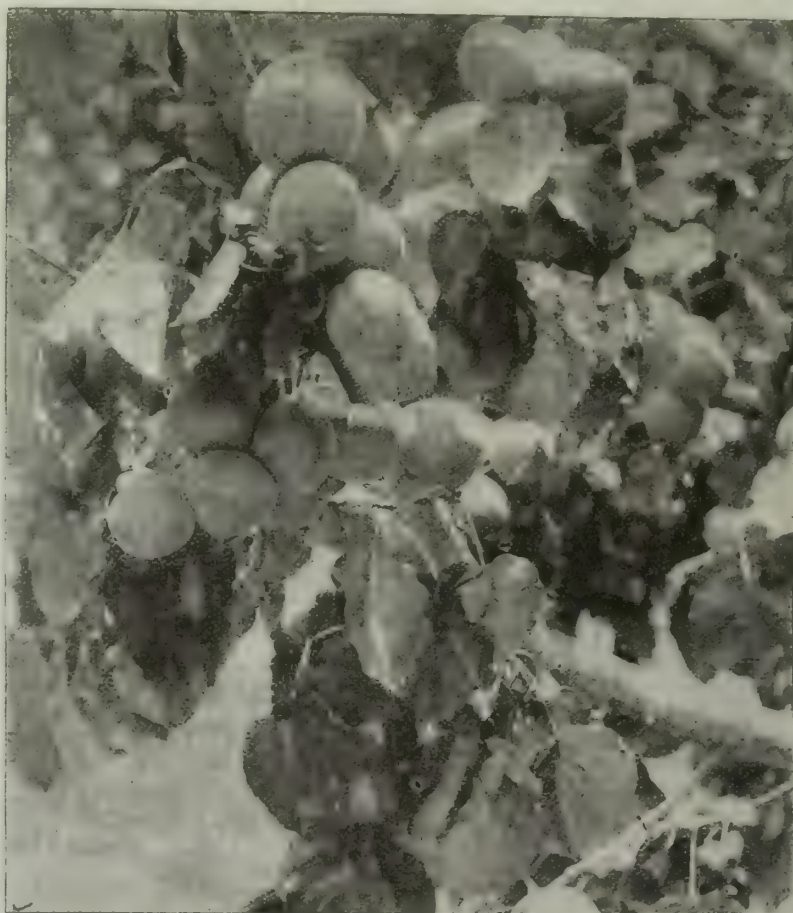
"The MAMMOTH is extra large, exceeding, we believe, even the Moorpark. It is of very symmetrical form, high color, and seems to ripen fully and evenly, which is, of course, a very important point. It is very rich and juicy when fully ripe, and it has exceptionally good keeping and shipping qualities. No doubt all apricot growers will desire to try this promising variety. If it does everywhere as it does in Ventura, it will be a great acquisition to the apricot list."

NIAGARA FALLS, August 3, 1893.

N. B. Smith, DEAR SIR:—The "cots" arrived in Chicago in first-rate condition on the 27th, six days after they were shipped, and they were beauties. Some of them kept in good condition until August 1st and 2d. They are the best keepers I ever saw and I shall try them at Yuma. Yours truly,
H. W. BLAISDEL.

Mr. Blaisdel has Large Interests at Yuma. Six Days in a Hot Express Car, and Kept Six Days Thereafter, Is a Pretty Good Test of Their Shipping and Keeping Qualities.

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Messrs. T. UMAN, HOOKER & CO., San Francisco, Cal.—Gentlemen: The PACIFIC SPIDER which I have purchased from you has done noble work in getting row prairie land with about six inches of tough and thin rough and fine condition. In fact, I believe that my land is in twice as good condition as that of any of the neighbors whose land has been in cultivation for a period of time and who have used other kinds of implements. Yours truly,
J. W. TERRY,
Solicitor for Texas of the Santa Fe Ry. Co.

Write us for full particulars.

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Teaches How to Make Money with A Few Hens.
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It is well worth \$1.00. Send stamps. Sample free. **FARM-POULTRY** is the name of it. Mention this ad. L. S. Johnson & Co., Boston, Mass.

PACIFIC RURAL PRESS

Vol. XLVII. No. 2.

SAN FRANCISCO, SATURDAY, JANUARY 13, 1894.

THE DEWEY PUBLISHING CO.
Office, 220 Market Street.



MIDWINTER FAIR—THE BUILDING FOR AGRICULTURE AND HORTICULTURE APPROACHING COMPLETION.

At the Midwinter Fair.

This great aggregation of industries and entertainments is progressing toward completion as rapidly as circumstances will permit. Every day shows notable advances, and visitors who place a week between calls are surprised at the developments which have progressed as they proceeded. There is a vast amount of work still to be done and amounts of material still to be transported and set up. There was a great fire in Chicago last week, which destroyed a considerable portion of the White City. Many exhibits awaiting shipment to our Midwinter Fair narrowly escaped destruction. Fortunately there was only trifling injury done to these displays, but possibly the wreckage may retard shipment. California exhibitors, though putting forth every exertion, are still far from ready with their buildings and their displays in the main structures. The authorities contemplate the formal opening about January 20th, but the finished exposition must come somewhat later than that.

To come nearer to the buildings than we have done in previous illustrations, we give on this page a picture of one of the entrances to the Agricultural and Horticultural building. The photographic view was taken by Taber on December 10th, so that at the present day the building is much further advanced toward completion. The ribs of the great dome now hold the glass, which of course adds

vastly to the finish. The debris of the builders is also cleared away, and the building is now being tenanted by the exhibits, which have, we understand, nearly or quite covered the available space. Annexes, too, have been, and others will be, constructed for the accommodation of special classes of exhibits.

The building, of which we show an entrance on this page, is generally acknowledged to be one of the handsomest and most fitting of all the Fair structures. It follows the lines of the new and very popular mission type. The design is by Samuel Newsom, who has produced an ornate and artistic effect. The building may be said to be in three parts, one of which is really an annex in the form of a tall redwood tower, about 80 feet high and 25 feet square. It will be connected with the main structure by a bridge. Of the main building, the portion next the tower will be rectangular in form, with an open court in the center. This portion is intended particularly for agricultural exhibits, and in its spacious galleries the products of the field and market garden will be exhibited. The remainder of the building will be covered by a huge dome 100 feet high, which is shown in the engraving. Around it there will be a roof garden, and within it the treasures of the garden can be displayed. The exterior of the building, as this entrance intimates, will be richly ornamented. It is to be 400 feet long and 200 feet wide, and completed at a cost of \$70,000.

Just as we go to press on Wednesday the announcement is made of the failure of the firm of Walter F. Beck & Co., the largest commission house on the Pacific coast. The firm has made an assignment for the benefit of its creditors. The liabilities of the firm amount to \$750,000, though the schedule filed shows but \$315,513. As to the assets, nothing whatever can be stated. They may cover the liabilities, and again they may fall far short. The firm has been dealing in dried and canned fruits, has operated canneries both for fruits and salmon on its own account, and, in short, has been doing an immense and varied business. It has suffered somewhat from the speculations of an employe, but the failure must be traced to other causes. It will take several days, probably, to reach a full statement of the matter.

The Viticultural Commissioners have commenced a campaign against certain features of the Wilson tariff law which would operate to the detriment of the wine and grape interests. This fight will be expensive, and the commission will be obliged to retrench somewhat in order to accomplish its ends in this direction.

A SPECIAL TRAIN of thirty cars of beef cattle was shipped from Carson, Nevada, on Tuesday, to San Francisco. It is the largest shipment ever made out of the State.

PACIFIC RURAL PRESS.

By THE DEWEY PUBLISHING CO.

Office, 220 Market St.: Elevator, 12 Front St., San Francisco., Cal.

ANNUAL SUBSCRIPTION RATE THREE DOLLARS a year. While this notice appears, all subscribers paying \$3 in advance will receive 15 months (one year and 15 weeks) credit. For \$3 in advance, 10 months. For \$1 in advance, 5 months. Trial subscriptions for twelve weeks, paid in advance, each 50 cents.

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	1 Week.	1 Month.	3 Months.	1 Year.
Per Line (agate).....	\$.25	\$.50	\$ 1.20	\$ 4.00
Half inch (1 square).....	1.00	2.50	6.00	22.00
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Large advertisements at favorable rates. Special or reading notices, legal advertisements, notices appearing in extraordinary type, or in particular parts of the paper, at special rates. Four insertions are rated in a month.

Registered at S. F. Post Office as second-class mail matter.

Our latest forms go to press Wednesday evening.

ANY subscriber sending an inquiry on any subject to the RURAL PRESS, with a postage stamp, will receive a reply, either through the columns of the paper or by personal letter. The answer will be given as promptly as practicable.

ALFRED HOLMAN.....Editor
J. F. HALLORAN.....General Manager
E. J. WICKSON.....Special Contributor

San Francisco, January 13, 1894.

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The Week.

The cold snap of 1894 comes rather early in January, and if we get along with one such snap, as we usually do, we have escaped reasonably well. The dispatches from the south at the close of last week were as usual sensational as to extent of injury. Later accounts show that earlier reports were gross exaggerations. It seems that in a few orchards on the low lands the loss was heavy. These instances, however, are very few. Many orchards have been scarcely touched, and others have escaped entirely. Nearly all the reports brought to the Riverside Fruit Exchange on Tuesday were of like reassuring character. From 5 to 10 per cent is now believed to represent the damage. It should be remembered that the orange crop of this year is an enormous one. The loss of a small percentage will not cut much of a figure in the total returns. But of course there are individual growers here and there who will lose considerably, but in the higher slopes and mesas, where the chief orchards are situated, there has been little harm done. Probably a high wind would have injured much more fruit than did the frost.

Although such fortunate reports as these come from careful examination of the citrus regions, the temperature was respectably low everywhere, and those who enjoy a little something to brace them up from the "enervating effects of a semi-tropical climate" must have had it. And to get this without injuring winter fruits and without harm to the tender plants in the flower gardens and parks is something California possesses in marked contrast to other parts of the country. Just about that much of winter goes with a relish and has no after effects.

SAN DIEGO seems to be advancing with the proposition to bond the county for better roads. At a public meeting called by the supervisors, on Tuesday, resolutions were adopted recommending the submission, at the next regular election, of the question of raising \$100,000 by a bond issue, for the construction of five main roads extending in various directions over the county, and for the improvement of laterals. Great interest is manifested, and all the members of the board of supervisors favor the issuance of bonds, hence the recommendation of the convention will be adopted.

Some Reflections for Fruit Producers.

If the world-wide complaint of agriculturists be well founded, that their annual product no longer sustains them according to the standard of comfort attained by other classes of no more intelligence and thrift, it is probably because labor-saving appliances have resulted in the production of more food than mankind requires, or at least more than the social machinery can so distribute as to get eaten. Doubtless there are hungry men enough to relieve the overflowing granaries.

Now, all food competes with all other food. A man can eat but so much. By as much as we can persuade him to eat prunes and olives, by so much, or nearly so much, we diminish the market for beef and potatoes. There is, therefore, constantly going on the inevitable competition between the classes and sections producing the varied food products, just as within each class there is a struggle between individuals. For the past quarter of a century there has been a rapid increase in the amount of fruit consumed as compared to other food products, and the rate of increase continues. All those portions of earth which are fairly adapted to raising fruit are now being "exploited" for fruit production. By "exploit" is meant that land-owners are striving to make land sales at prices which are not justified by any possible annual yield from the property, unless it be from a fruit crop. This is the case in Australia, South Africa and California. In all southern Europe it is certain that the fruit acreage is largely increasing in the hope of advanced profits. There are great areas in South America where, apparently, an enterprising population is the only thing wanting to ensure a great fruit product. All these fruits will compete with each other and with other food materials in the markets of the countries which produce no surplus of fruits.

Assuming equal intelligence, vigor and thrift in the people of the different fruit-producing regions, the matter of supremacy among them is one purely of physical geography. In the end the country will conquer which nature has best fitted for producing fruit. On this score we have probably nothing to fear; it is almost certain that in a struggle for existence by fruit raising California will be in good shape when all other present fruit-producing countries are done up. Our natural conditions are most favorable, the average intelligence of the farmers higher and their average vigor equal to any and greater than most. In one essential we are doubtless deficient, and that is in thrift. It is probable that the proportion of farmers who habitually exceed their incomes is larger in California than elsewhere. It is in the air.

This larger view of affairs is perhaps requisite to an adequate understanding of our position. It is a characteristic failing of farmers that they do not know what even their neighbors are doing, much less what mankind is doing; and yet the doings not only of their neighbor, but of mankind, affect their annual incomes.

Coming now to California, some orchardists are making money and some are not. Since all fruit of similar quality and shipped at the same season brings about the same price, the difference in profit must arise from a difference in cost of production, or difference in the expense of selling. Some men can doubtless make a fair profit if they sell green fruit at \$20 per ton—and great quantities are sold much cheaper. If so, all might do the same if they had invested in the fruit business with the same judgment. But that is not the case. The mass of our fruit is raised, not by the large growers, whose names we all know and from whose carefully kept books come the only accurate figures available, but by small growers, many of whom have invested or incurred debt with poor judgment, who keep no books and don't know what their fruit costs them.

And costs will inevitably differ. The cost of fruit to the small grower, who has only his farm to live by, are his family and working expenses, whatever they may be—since these have to be met—and the interest on his investment. It is useless to show such a man that some can make money raising fruit at \$20 per ton. He may know that if he does not get more he will in time lose his farm, unless he reduces his standard of comfort possibly to that of the French or even Bulgarian peasant. His investment or his indebtedness may have been made with bad judgment, but it is made. If it is investment, he may maintain his standard of comfort and consider that he applies the interest that way. If it is indebtedness, he must live cheaply or have trouble. The small grower will usually have less information, experience and skill than the large grower, so that his ratio of first-class to inferior fruit will be less, and his net proceeds decreased accordingly. This, however, is by no means universal. Sometimes it is the other way. There is also to be considered the very large class of salaried and small business men who have invested in fruit farms, very few of whom probably get

expenses from them. They put outside money into their farms year by year, and thus compete with those who must live by their farms alone—not unfairly, perhaps, but very unfortunately for both.

The large grower has a very great advantage in selling. He is usually a good business man, and his crop is large and its quality known. He is able to inform himself of markets, and sell at the actual necessary cost of selling in the ultimate market; or, if he speculates by selling to a middleman, he does so on equal terms with the purchaser. Sometimes he speculates by buying of his less informed neighbor. The cost of marketing a product is the difference between the price paid by the producer and that received by the consumer. This difference averages very much less to the large grower than to the small.

It is to the interest of California to have the number of small growers of fruit indefinitely multiplied, if with indefinite multiplication they can all continue prosperous. It is a vision of happy homes and contented people. It is not to the interest of California that it have a population which its industries do not support in comfort.

It is probable that California can and will support in comfort, in fruit growing, a population vastly larger than at present. That may come finally by the survival of the fittest after a severe struggle, or come speedily by the wise and united action of those now engaged in the industry. Some of those are trying by State co-operation to bring it about sooner than it would otherwise come, and to the profit of those now engaged in the business. To do that work profitably it is requisite to fearlessly consider the entire situation, that we may direct our efforts to the real evils. If the majority of growers are making money and paying off their debts we should do best to let well enough alone. If many are running behind and dragging the more prosperous down with them there is need of a remedy, which all, both strong and weak, should unite in devising and applying.

The Government Agricultural Work.

There seems to be some apprehension at the East that the policy of the present Administration is to curtail and abridge the work of the Government for the promotion of the agricultural interest. We do not refer to phases of the proposed tariff which place some of our agricultural producers at the mercy of foreign producers of the same articles. There has been already aroused an indignant protest against such enactments, which it would seem should cause the Administration to pause in its ruin-carrying. Nothing that we could say would probably add an atom to the weight of the cry against such legislative action. There is, however, another phase of the Administration's policy which we should think could be easily modified by a general declaration of the popular will.

Our Eastern agricultural exchanges fear that the Government provision for experimental work in agriculture, which has already done so much good at home and won us such credit abroad, may be in some way interfered with. There seems a possibility that the appropriation for such work may fall between two stools, in this way: The Secretary of Agriculture protests against having on the agricultural appropriation bill the item for the support of experiment stations, because (ostensibly) he does not have any control over the expenditure. Thus, he strikes out this item in his estimate for the coming year and then seems to claim credit for saving so much—according to his own showing it is saving what he cannot spend, a method of economy which does not carry much moral force, to say the least of it. As, then, the Secretary of Agriculture leaves this item out of his budget, and the Secretary of the Treasury does not insert it in his budget of the general expenditures of the Government, the item seems to fall somewhere between the two. Of course it does not fall silently, because Mr. Hatch, Chairman of the Committee on Agriculture of the House of Representatives, raises his voice in Congress in this manner:

"Deducting from the annual amount appropriated for the Department of Agriculture the \$1,000,000 that is given to the Weather Bureau, and the \$720,000 for the experiment stations in the States, only about \$1,000,000 is left for the agricultural interests. Yet the President says in his message that the farmers represent more than one-half of the people of the United States, and that their labors resulted in \$800,000,000 being paid to this country for agricultural exports. The repairs to the ironclad that is dancing attendance upon the nations of the earth, and affording an opportunity for some admiral or commodore to get us into a row, more than overbalances all that is appropriated in any one year for the Department of Agriculture."

"If the Administration is really in earnest," concluded Mr. Hatch, "and desires to cut down appropriations that are of no benefit to the United States, I could modestly suggest that there are several other directions in which this can be done, rather than destroy or cripple the one department of the Government in which more than one-half of the people have a direct contact and interest. Outside of the postoffice department the masses of the people come more directly in contact with the Department of Agriculture than any other, and they will not see the few advantages which they enjoy under it curtailed without a protest."

This protest which Mr. Hatch foreshadows should be

persistently and loudly made. For the last twenty years the vast and growing agricultural industry has struggled for some respectable share of the money expended for promotion of national interests. It has achieved some progress and was just beginning to be credited in public councils for something like its proper dignity and importance. As in the nature of things the Department of Agriculture could not be fully aware of the diverse needs of the different States of so vast and varied a domain, it was wisely arranged under Mr. Cleveland's previous administration that there should be some localization of the work in the different States and Territories. This was to be achieved by the Agricultural Experiment Stations under the auspices of the Department of Agriculture. But few years have passed since the inception of this movement. The work of organizing these establishments naturally consumed some time, and the effort of a new form of organization to bring itself into near and useful affinity with the interests it was planned to serve also required time. And yet the experiment stations of the United States during their short life have accomplished wonders. Their publications upon subjects of pressing local importance are in demand in all the States. Condensed statements of their conclusions and deductions from them constitute a large portion of the agricultural literature, both in special agricultural journals and in the press at large. Common farm practice is coming upon a more rational basis and new cultures of great value and promise are being introduced. Farmers are beginning to understand better the obscure agencies and influences with which they have to contend and manufacturers are continually taking hints for improved devices and materials. In fact, the experiment station work, even though it has been but so imperfectly developed, is exerting a most important influence upon the agriculture of the country and is winning the co-operation and approval of all progressive agricultural organizations and individual producers.

It is sincerely to be hoped that the Government's disposition toward this work is not what our Eastern exchanges apprehend. Possibly, with the great vexations of the time, including silver and Hawaii and the tariff, this matter of maintaining the special agricultural work of the Government has not been carefully considered. If this be the case, nothing better can now be done than for farmers who approve this work to take occasion to inform their Congressional representatives of the fact. Mr. Hatch, in the paragraph we have quoted above, shows clearly how insignificant is the sum of money expended for the purpose when compared with some of the flash expenditures of the Government which render no service but entailment of greater expenditures as antidotes for their effects. This matter should receive the attention of our agricultural writers and speakers and the action of our agricultural societies, and if brought before the public and the Administration in its true light and importance, it can hardly be doubted that the present apprehension would pass away, as the occasion for it would be removed.

The State Fruit Exchange.

The newly elected Board of Directors of the State Fruit Exchange will meet at 220 Sutter street on Tuesday next to organize and assume charge of the business for which they were chosen. The movement has received wide discussion by large and small assemblies of fruit-growers in all parts of the State, and may safely be assumed to represent the deliberate judgment of the great body of those most interested.

Nothing which has been proposed as the policy of the Exchange can injuriously affect any legitimate trade interests; but undoubtedly it is directed against the sharp practices of some of the unscrupulous and reckless of them, and from these and those whom they may be able to inspire there will doubtless be active opposition to the movement. No one is likely to oppose the general principle involved, for that would be hopeless and unpopular, and defeat itself. The methods taken will be opposition to all definite plans proposed, on the ground that other plans are better; local and individual rivalries and jealousies will be stimulated and made the most of, so as to prevent united action; the acts and motives of those actually connected with the movement are likely to be attacked and misrepresented; shortcomings of existing and former co-operative associations will be rehearsed and exaggerated; and all other forms of indirect attack will be employed.

We have entire confidence in the vigor and ability of the Directors of the Exchange, and have no doubt that they will be found entirely equal to the occasion.

STARR & Co. incorporated has undergone an internal revolution during the week in which Mr. Alfred Bannister has retired from the management of the concern.

The Mule in Agriculture.

We publish upon another page some practical suggestions upon the breeding of mules by a leading breeder of the famous mule belt of the country, the lower Mississippi valley. These suggestions we consider of direct local importance, because the mule is a very important factor in our agriculture and our mining as well, and in addition to our home product of mules we are continually bringing carloads of them from Missouri and adjacent States. This being the case, it seems assured that the California mule product can be profitably increased, and this may be a suitable direction for the enlistment of a portion of our surplus horse-power.

The mule has always been of great value to the country, and yet this value has not been generally recognized. It is true the mule is lowly in animal society, and it also has a moral aspect which is not inspiring to contemplate. Mule enterprises have also been a little clouded, possibly by the pointed paragraphs of humorists. And yet, viewing the mule as a most satisfactory motive power, and one which it requires no little sagacity and insight to satisfactorily produce, we cannot see why the producer of good mules should not find as much satisfaction for his productive pride as money for his pocket. As a matter of fact, those who intelligently pursue mule-breeding do muster this pride in their business, and rightly too, and yet those who know nothing of the business and its requirements are prone to look upon it as working over some sort of animal refuse, and producing something which bears the stamp of Nature's disapprobation. It is not wise nor profitable to take any such view of the matter.

The mule as an industrial force has an honorable historic record. In the time of Pliny, mules had been used to build temples, and both in Greece and Rome they were used for chariots and saddles as well as for bearing burdens. In all the countries of Europe for centuries they have been prized for their sterling qualities of gentleness and faithfulness. In this country the first great mule-breeder was the immortal Washington, who used jacks sent to him by the King of Spain and by Lafayette, for crossing upon his mares, and produced mules which sold for \$200 each—a lot of money for those days. If we are not mistaken, Mr. Washington also perpetrated some sort of an essay on the mule, in his correspondence or elsewhere.

The mule interest of the United States amounts to considerable in the aggregate. According to the census of 1890 the principal States in which mules are raised are as follows, in their order as to numbers foaled in 1889, viz: Missouri, 34,500; Texas, 25,300; Tennessee, 19,500; Kentucky, 18,200; Kansas, 8200; Arkansas, 6600; Illinois, 6400; California, 5000; Indiana, 4400; Mississippi, 4200; Alabama, 3500; North Carolina, 3300; Iowa, 2300; Nebraska, 2300; Georgia, 2000; Virginia, 2000; Louisiana, 1300; Oregon, 1300; Ohio, 900; South Carolina, 700, and Pennsylvania, 600. Many other States raised mules, making the number foaled in 1889, 157,000. In the same year there were sold 330,000 mules, of which number Missouri furnished 68,300, Tennessee 56,800, Kentucky 50,000, and the other States in proportion, the sales being more than double the number foaled in that year, which is greater in proportion than any other kind of this class of live stock.

We shall be very glad to hear from some of our readers who have raised mules some conclusions from their experience; also from mule-users some tributes to their practical value. The animals are marvels not only of gentleness and faithfulness, but they possess an intelligence in their work which is most gratifying. We never saw a more satisfactory animal in an orchard than a mule which we once saw at work on A. T. Hatch's place at Suisun. This was years ago, and probably the mule is there still, for, to all its other qualities the mule adds longevity. Their effective life exceeds that of mankind, for the mule begins when man is a baby, and, in some cases, continues until a man loses his teeth and totters in his walk. Let's have a symposium on the mule.

THE *Record-Union* tells of a large horse which tarried in the capital city on his way from Minnesota to the Mid-winter Fair. He is 21 hands, or 84 inches, high, and large in proportion, measuring nearly 15 feet from his nose to the end of his tail. He has fallen off in flesh during his journey, so that he weighs only about 1750 pounds. His sire was a Norman horse, and his mother an ordinary mare weighing about 1050 pounds. A Missouri horse 19 hands high has been on exhibition for three years past, but this animal throws him in the shade.

In orange culture in Florida, it is stated that girdling, as of the grape vine, is becoming a part of general practice, and Prof. Meehan says perhaps this may account for the enormously large increase of sour instead of sweet oranges, which is being poured into northern markets from that State.

From an Independent Standpoint.

Whoever takes even passing notice of the current news these days cannot fail to know that the railroads of the country are in extremities. The Northern Pacific system is in the hands of receivers, the Union Pacific is just staggering along from month to month, while the Santa Fe, the Burlington & Missouri, the Chesapeake & Ohio, the Reading, the Denver & Rio Grande, the Atchison—and others too many to name—are in varying stages of financial tribulation. The assumption is that the railroads, like the rest of us, are hard hit by the stress of the times; and, in a superficial sense, this is the truth. Their revenues have been cut down by conditions which effect all forms of business alike; and to this fact obviously is chargeable the immediate effects now so severely felt. But the root of the trouble lies deeper. It lies in the fact that the railroads are trying to earn interest on too much capital; that they must earn it, in fact, or go bankrupt. Every one of them is required to pay interest on what is called its "capital" over and above the charges of operation, repairs, wear and tear of equipment, etc. Now, on the face of things, nothing could be fairer; but the curse of the situation is that the so-called capital in most cases represents two, three, four or five times the actual cash value of the property. To illustrate, there is a railroad in the Columbia river basin in the States of Oregon and Washington worth in cash to-day about \$15,000,000—that is, it could be duplicated for approximately that sum. It is capitalized at about \$46,000,000 and leased upon that basis, the lessees being bound to pay to the owners six per cent annually on that vast sum. Is it surprising that the lessees find it impossible to make the property pay its running expenses and, in addition, six per cent on three times its real value? Is it right that the people who support the road should be taxed in railroad charges to support the interest on \$46,000,000 when they have the service of a property worth only one-third of that amount? Of course the thing is absurd. A railroad company has the right to a fair interest on the value of its property, with fair allowance for contingent losses, but it has no right to exact interest upon a capitalization which in all but the half, third, fourth or fifth part is mere wind, water and buncombe. Something like this, as some of our readers may remember, has been said before in the *RURAL*; but it cannot be too often repeated until it is fully comprehended by the public. At this time when so many railroads are going to the wall, it is right that the public should know the reason why, and not be led into a mistaken sympathy based on false claims and misunderstanding of the facts.

The ways by which bogus railroad capitalization is created make, in their recitation, a familiar song; but our readers may not be unwilling to trace how the game of wolf and lamb continues to be played. The latest disclosure is in connection with the Northern Pacific system and is in the form of allegations made by certain stockholders in applying for the removal of receivers who are identical, personally, with the managing officials of the system before it got into the bankruptcy court. The allegation is that these men—Thos. F. Oakes, Henry C. Paine and Henry C. Rouse—while filling the higher official places in the Northern Pacific organization and thereby controlling its policy, sold to the company at various times within the past four years lands, buildings, rolling stock and branch lines of road for sums aggregating *sixty millions of dollars* more than actual value; that these purchases were of small use to the Northern Pacific even if they had been valued fairly; and that the transactions were not in the interest of the company, but of its dominating ring of officials. In plain terms, it is charged that President Oakes and his associates have swindled the company out of \$60,000,000.

Now this sixty million, thus, according to the plaint of stockholders in court, "lost," still figures—every penny of it—in the capitalization upon which the public is required to pay interest in the form of passenger and freight charges. Not even those stockholders who complain of and denounce the alleged fraud would be willing to see the sum stolen marked off to the profit and loss account. It is of course to be kept up as part of the "investment," upon which it is claimed that the public owes six per cent or more per annum. And, really, there seems no more reason why this particular sixty million should be lost, in the sense of being thrown out of the books of capital account, than the various other stupendous capital figures created in the same way and always reckoned in support of demands upon the public for "fair treatment." It is by such methods of figuring that the railroad capitalization of the country has largely been built up. In other kinds of business something—very often, indeed, much—goes to the account of profit and loss. If a merchant makes an unwise purchase, the loss is with him; if he is robbed by his book-keeper, again he suffers; and so with

the farmer, and with every other man of affairs, and with every private company. But not so with the railroad. All the mistakes and extravagances and frauds and robberies practiced upon it or through it go to swell not its loss account but its capital account, to be used as the basis of further exactions from the public upon specious demands for fair and honest treatment.

The worst of this absurd and sinful system is that it imposes upon the producing public—for in the disposition of public burdens the producer is made always the pack horse—an unreasonable and intolerable load in the form of transportation charges. It would not be hard to pay a fair rate of interest on the actual value of railroad properties, but it is oppressive and ruinous to pay on the actual value swollen by the sums of all the mistakes and villainies practiced on railroads since railroading began. There is another bad thing about it, too, in the fact that "securities" representing these inflated and fictitious capitalizations have been palmed off upon careless investors. The swindlers have gotten the swag, and, largely speaking, have made off with it, leaving innocent people to hold the empty bag. When it is proposed to put the railroad business on a fair basis, to make it rest content with a fair income upon the actual value of its property, a cry goes up from and in behalf of innocent stockholders, asking if they are to be damaged because somebody who came before them did wrong. It is hard to say so, but in the end they must suffer. The public cannot go on forever paying interest on railroad capital that has no tangible existence, simply because a host of careless and foolish people have invested in the funds. If people make bad bargains in railroad stocks, they must suffer the consequences, just as in any other form of human folly.

The present times, by showing the inability of the country in periods of extremity to support the load of bogus railroad capital, are leading up to the day when the whole vast fabric of falsehood and fraud shall be swept away. Such a consummation would be worth all the pains involved in a season of business stress.

The Hawaiian business gets in worse shape as time goes on. When we last made reference to it, the President had, in his special message, formally turned the whole matter over to the "wider powers" of the legislative branch of the Government. That was three weeks ago. But it seems that in turning the matter over to Congress, Mr. Cleveland forgot or neglected to withdraw his instructions to Minister Willis, who had been told to arrange with the Queen for amnesty for all rebels, and then to invite the rebels to step down and out. And now comes news from Honolulu that ten days after the President had asked Congress to take charge of the matter, Minister Willis, acting under orders from the President which had not been recalled, invited the Provisional Government to surrender. The islanders declined with civility but firmly to surrender, and so the matter stood at last accounts. Now, either the United States must enforce this demand, absurd and outrageous as it is, or submit to the snubbiest kind of a snub from the weakest government on top of the earth. We ought, in fact, to submit to it—to take the dose, nauseous though it be—because our position is utterly false and wrong. That Mr. Cleveland should allow his original instructions to stand after he had in express terms yielded the matter into the hands of Congress, is perhaps no greater violation of propriety than his original assumption and disregard of Congress. The whole matter illustrates the tendency of things to persist in wrong-going when they have once been started wrong. There is a certain momentum in moral as in physical forces, and as difficult to check in the one as in the other Mr. Cleveland is said to be deeply chagrined at Willis' obvious blunder, and there is, perhaps, small comfort in the reflection that it is but the natural outcome of his own graver blunder at the beginning.

On the whole, the Hawaiian matter—with all its humiliations—may do the country good, since it has brought to the bar of public judgment a question which must be settled some time, and would better be settled in quiet than in stormy times. The issue is well put by Gen. N. P. Chipman of Red Bluff in a recent letter, as follows:

Mr. Cleveland is the exponent of a construction of our fundamental law which has been steadily growing, and has been enforced by other Presidents, but which has too long escaped public censure and criticism. He will have done our country signal service if by his alleged usurpations he shall have aroused public thought, and shall have brought the judgment of the people to a proper understanding of executive limitations. It will not hurt even partisans to halt a moment and re-examine our fundamental law and recall the scheme of government handed down to us by the fathers of the republic.

Wisely said indeed; and there will, we fancy, be few to reject the conclusion which follows that in all this business of quasi-nullification President Cleveland is wholly wrong.

The men engaged in the sheep industries of the State

are taking active measures to mass the influence of California against the proposed tariff changes as they affect wool and dressed meats. Last week the Wool-Growers' and Dealers' Association telegraphed to each California member of Congress a demand that he work and vote against the Wilson bill. As we go to press (on Wednesday) a convention representing the sheep industries of the State is in session in this city under the presidency of Mr. Barclay Henley (a Democrat and former member of Congress), and with all parts of the State represented. Resolutions have been proposed reciting that 4,500,000 sheep are owned in California; that they produce annually 35,000,000 pounds of wool; that \$50,000,000 is invested in the business; that it directly employs 30,000 of our citizens, and that, in the judgment of the convention, to admit wool free would, in its effects, destroy the whole sheep interest, wipe out the capital employed in it, and turn many of those dependent upon it penniless upon the highways. An emphatic protest against the proposed changes follows, the resolutions concluding with a ringing declaration that the higher interests of American character and life are bound up in the continuance of the present system of protection to industry. The meeting is wholly non-partisan, there being as many Democrats as Republicans in attendance.

A Note from Mr. Hatch.

TO THE EDITOR:—It seems to me that Mr. Adams' pessimistic articles should not be encouraged by being published. They go to an unwarranted extreme, and are just as unreliable as those extravagant articles written so often by real estate agents and others for boom purposes. There should be a midway between the extreme isolated cases in either direction, a la Adams or Mr. R. E. Agent, wherein are shown average facts based on industry and intelligence. It does not to me seem necessary to imply that our fruit industry is necessarily going to the bow wows, if this season just passed we did not make the large profits we are used to. Everybody knows the circumstances leading to these bad results. I refer to the season of poverty and disaster in all lines of business through which we are passing. It is not at all strange that luxuries are abstained from to a great degree—our fruits are luxuries in every sense of the word, yet we can produce them profitably and sell them at prices which ought to cause them to be considered as the poor man's delicious, healthful, nutritious every-day food. Therefore why (apparently) for the purpose of frightening fruit-growers into co-operation, should it be deemed by any one necessary to publish pessimistic facts that are only true to a small extent?

The benefits of co-operation can be shown clearly to the average intellect without the publishing of articles calculated to mislead all who do not know the object of them. Put me down as in favor of co-operation. A. T. HATCH.
San Francisco, Jan. 9, 1894.

"THE adoption of resolution No. 6, for immediate subscription to the capital stock of the Exchange, acted like a fire alarm in emptying the hall. While Mr. Adams was making a vigorous appeal to those present to come up and complete what they had pledged themselves to do, his audience rapidly melted away through the front doors leaving him nearly alone with the empty chairs."—*California Fruit Grower*, Jan. 6.

No one who attended that convention could have any doubt of the earnestness of its members. While subscriptions were being handed in Gen. Chipman arose and said that he should certainly take stock in the Exchange, but that he thought the best way was to wait until after actual incorporation; to which Mr. Adams assented, remarking that if upon reflection it seemed a good thing, then was time enough to subscribe, and if it did not seem good after deliberation no stock ought to be taken. The amount of stock required, if all paid up, would be from \$15,000 to \$20,000. At the close of the meeting, 21 persons had subscribed for 322 shares of stock, amounting to \$1610, or nearly one-tenth of the amount required.

THE State Board of Examiners has resolved that it will not pay any more coyote-scalp bounties until further orders by the Legislature, on the grounds that funds are low and that the act providing for the payment of coyote claims is not in itself an appropriation, and, therefore, that a specific appropriation should be made by the Legislature to pay the same. According to State Controller Colgan over \$187,000 has been paid out of the treasury for coyote scalps, while claims to the amount of \$118,000 remain unpaid. The present action is due to the fact that no one has pressed these claims by suit, and therefore there could not be any decision by the Supreme Court as to whether the money had been properly appropriated or not. The resolution adopted by the Board will no doubt result in some holder of a coyote claim bringing suit against the State, and the question as to whether or not the act providing for the payment of coyote claims is in itself an appropriation will be speedily settled.

THE thanks of the editor are due to Mr. O. H. Leggett for a box of white Adriatic figs, produced and cured at his place near Oroville. They are simply perfect—superior in all the points of flavor, texture and cleanliness to the best Smyrna figs. Mr. Leggett's methods of curing and packing are his own, and he has promised to give them to the readers of the RURAL at an early date.

Fruit Transportation.

Members of the State Horticultural Society and Others Interested:—I, in common with all fruit-growers and shippers, am interested in the problem of cheaper and better transportation. We are told that our refrigerator cars are too heavy and carry too much surplus weight to make either good time or cheap freight, which to a certain extent is doubtless true; but I am satisfied that practical relief can be had by a much cheaper and better method. In order to render the proposition plain, I will give a short description of my plan. First, the refrigeration as well as ventilation is accomplished by compressed air alone. I will begin at the front end of the train. A locomotive arranged to supply steam to the operating car, a larger tender car than usual, two water tanks—one about three times the capacity of the other, with a four-inch chamber between them filled with charcoal or some other non-conductor, the small tank to hold hot water, made by compressing the air, partly compensating for the use of the steam from the locomotive. Next we want a light car with a small engine taking its steam from the locomotive, a compressor air pump, a water force pump, an air tank with a cold water jacket, a safety valve at the top and a blow-off cock at the bottom for the purpose of freeing the water of condensation. Next, a train of light cars as well insulated as the C. F. T. cars. Each of these cars should be arranged to take compressed air from both ends—no other air to be admitted; a ventilating door at the top and middle of the car; a telemeter and electric connection with the operating car where, from its connecting telemeter, the exact temperature of each car can be known. This train can be of from five to fifty cars, and the expense would be trifling in comparison with ice refrigeration. The gross weight would be much reduced.

Some of the reasons for the success of a train thus constructed I will now give. As our fruit in going East passes through a very moist air, we must get rid of this moisture before admission to the car, and we also must get rid of the heat caused by compression, otherwise there would not be the proper condition of refrigeration for the preservation of fruit in transit. We now have compressed air, which is both cold and dry. The expansion of the air, when admitted to the car rapidly, takes up the heat from the fruit and at the same time creates a positive movement of all the air in the car, making the best ventilation possible. The air, being very dry, takes up the free moisture constantly exhaling from all green fruit. This moisture going into the gaseous state is another source of refrigeration. Thus, it is seen, we have two sources of refrigeration, and, combined, they produce the best possible conditions for preserving fruit—namely, coolness and dryness. The ventilator door is at the top and center of the car; at the top because moist air is lighter than dry air, at the center of the car because for equal and perfect ventilation the compressed air is admitted at both ends. In practice it will be found that half an hour, or at most an hour, will place the car in good condition, and less after the right temperature is reached. Six cars or more can receive the compressed air at a time, and thus a large train can be put in condition in a very few hours, much sooner than by the ice process.

There may be some objections to this method proposed which would not be tenable. One, that operating cars could not be sent to all shipping points. Admitted; but a car of fruit which had been subjected to this treatment as far east as Omaha, provided the car had been properly insulated from outside heat, would carry two days in perfect condition—certainly time enough to reach any place from the main railroad lines. I have not gone closely into a description of all the machinery to carry out this plan, but enough to show its practicability and comparative cheapness and lightness. As refrigeration from compression is no new thing, the only value in this article is to show how the principle can be applied to practical railroading.

R. B. BLOWERS.
Woodland, Cal., Dec. 29, 1893.

THE auction sale of oranges in this city has opened promisingly, and will proceed hereafter with tri-weekly offerings. The San Francisco Fruit Auction and Storage Company has been incorporated for this purpose. Its capital stock amounts to \$50,000. The incorporators are: The Judson Fruit Company, Allison, Gray & Co., Dalton Bros., Eveleth & Nash and W. H. Wood & Co. The incorporation is the result of the unsatisfactory experience of orange-growers with the old ways of doing business. The auctions will be held Mondays, Wednesdays and Fridays. For every auction it will be arranged to have in readiness about what the state of the market seems to warrant. At present the trade will be confined to oranges almost exclusively, but the purpose is to handle all kinds of fruits.

If there is anything in past experience and present conditions, the season of '94 will prove both light and unprofitable for canners of California fruits, says the Cutting Packing Co.

THE DAIRY.

What Governor Hoard Thinks of Cow-Keeping.

Ex-Governor W. D. Hoard of Wisconsin is a creamery owner and a pleader of humane treatment for cows. We take the following from a recent address of his on the latter subject:

Handling a cow should be placed before feeding her, for environment or "handling" will always and easily alter the effect of feed. Many farmers forget in handling their cows that they are dealing with problems of life and maternity. Such forgetfulness lies at the bottom of a large portion of so-called ill luck. The mystery of these maternal functions is just as great in the bovine mother as in the human mother.

As the pasture grows short the cows increase their exercise to obtain food, causing shrinkage of milk. There is an intimate relation between bodily ease and full-fed contentment and the largest production of milk. A profitable cow with plenty of feed never seeks exercise.

Serious losses occur frequently through hasty and inconsiderate driving, particularly from the pasture at night. Every owner should provide himself with the means of detecting these losses before it is too late to correct them. A small feed of bran to each cow at the milking stable will soon bring the whole herd regularly to the yard.

Cows need shelter in summer much oftener than we think. I doubt if it is wise to allow them to remain in a rain storm even in midsummer. In our eight creameries we have found that a long rain storm, even in hot weather, is almost sure to reduce the fat percentage of the milk. The Babcock test is telling some important truths.

The modern dairy barn must be well ventilated, must not be over crowded, must be well lighted. The matter of cheap and effective ventilation is a difficult one. I can see only one way and that is to allow at least from 800 to 1000 cubic feet to each animal. We must either stable a less number in a room or build wider or higher. Lumber is cheaper than tuberculous cows. Square wooden ventilating pipes can easily be built from the stable to the roof, starting two feet from the floor. It is well to insert a sliding damper to regulate the current.

It is a serious question whether to store hay and fodder over the cows. The finest barn I ever saw was in the form of an L. The hay and ensilage were at the short end. The cows were tethered heads toward a center feeding alley in the longest end. The alley was ten feet wide, ran through both wings; seven feet over head was hung an iron railway. Suspended thereto was a large box on rollers capable of holding 1000 pounds of ensilage or about 300 pounds of hay. One man can easily push the box along loaded with all it can hold.

In this way the fodder was kept free from all effluvia from the stables and thorough ventilation was easily secured. The barn was only a story and a half, quite cheaply built, but I never saw cows thrive better. Every barn should contain one or more box stalls for a sick cow or one about to calve. Milk fever may often be averted if the cow is placed in the box stall a few days before calving, where she can have full, free use of her body during parturition. The box stalls should command view of the other cows to promote contentment in the occupant. They should be thoroughly and often cleaned and well disinfected after each birth.

To promote the efficiency of the cow we must promote her comfort. In fastening the cow in the stable it is of the highest profit to first consider her physical economy and the promotion of her milking function. Too many first consider "how many can I crowd into a given space," or economy of time and labor.

The rigid anchion should be indicted for being a barbarous and unprofitable device. It was invented solely for the comfort and convenience of the owner and not for the cow.

An ordinary cow of 1000 pounds will drink on winter feed from 80 to 150 pounds a day. Cows giving a large flow of medium quality milk will drink the most water as a rule.

Allow as little exercise as is possible, consistent with health and vigor. Exercise costs feed and a lessened production of milk. A certain amount of exercise is no doubt necessary for health. If we shut the cow up in a barn for six months for the sake of extra flow of milk, no doubt we will get it; but we must take extra pains to make the environment as perfect as possible. She must have good air, plenty of light and dry quarters. The natural instinct of a cow, when left to herself, is to eat her fill, if she can get it easily, and then lie down and digest it.

Milk is a highly nitrogenous compound, composed of about four per cent butter fat, three and one-half per cent casein, 4.70 per cent milk sugar, etc. The composition of milk should teach us approximately, at least, how to feed.

If you are fattening a pig which has attained its growth, you feed for fat, and corn meal will do the work well. But if the pig is not full grown and you feed a fat-producing food, you hinder growth. To get that you must produce sufficient muscle and bone-producing food. This sort of food is known under the three names of nitrogenous, albuminoid and protein, all practically meaning the same in their effect on physical economy.

In butter making we make direct commercial use of only one part, the fat, but we must feed for the production of all the constituents in the milk. To this end it becomes necessary to select largely of foods that most abound in albuminoids. These are cotton-seed meal, oil meal, pea meal, bran, gluten meal in grain, etc. There is another reason why the cow should have plenty of nitrogenous or muscle and nerve-supporting food. Milk giving is a maternal function, drawing exhaustively from the nervous forces. The cow that produces a pound of butter a day has drawn more on her nervous force than the ox who pulls at the plow all day. For this reason she must be handled so as to prevent nerve exhaustion, and fed so as to

support the nervous system. The protein foods are essentially nerve and muscle supporting.

Care, comfortable cows, milk test, dissatisfaction with low yields, search, constitute the keystones to the development of a successful dairyman.

Cow Losing Her Cud.

The superstition entertained by some people that cows possess a certain something, which they may lose by being a little careless, and which must have a substitute in the form of a piece of salt pork or other thing, is described by Prof. Law, who says: This idea is fundamentally wrong, as the "cud" which is brought up and chewed by the healthy cows is simply a small portion of the solid food that has recently been swallowed, and in ruminating the animal is simply working over this solid material, portion by portion, until the whole contents of the stomach have been worked over and more finely divided by this second chewing. All animals that do "chew the cud" have the stomach divided into at least three separate compartments, of which the first one is simply a temporary store for the accommodation of food hurriedly swallowed and very imperfectly chewed. When the healthy animal has leisure, it sets to work to bring this up, morsel by morsel, and to grind it down to a condition of fineness better fitted for the work of the manufolds and the chemical or digesting stomach. In doing this, each morsel is floated up in a mass of liquid and on reaching the mouth the liquid is swallowed, the solids being held between the tongue and the roof of the mouth for mastication. As only the solids are detained in the mouth for this second and thorough chewing, the finely divided material being swallowed with the liquid before this second mastication begins, it follows that each successive "cud" is made from new and different material from the last.

Her failure to "chew the cud" is due to ill health, just as a lack of any desire for food characterizes a sick man. A cow that fails to chew the cud is a sick cow, and as soon as she recovers from that sickness she will recover her ability to chew the cud. The exceptions to this are very few, and are almost all due to a mechanical impediment to the bringing up of the cud. For example, a cow fed exclusively on dry hay and grain, and denied all water, will soon cease to chew the cud until water is again supplied. In this case the available water in the paunch is soon used up in floating the food over into the third stomach, and soon there is too little liquid left in the paunch to float any part of its contents. These contents, under the compression of the contracting walls of the paunch, are formed into one semi-solid mass, and no small morsel can be detached and floated up through the gullet to be masticated. Furnish water and the trouble is gradually corrected. Under the movements of the paunch, portions of the semi-solid mass are detached, floated and finally brought up to the mouth.

But it will be asked how, then, is the "cud" restored by giving a large mass of salt pork? It does not by any means follow that the salt pork was in every case the cause of recovery. The majority of diseases tend to recovery after a few days of their own accord, and if the salt pork has been given in the interval, it gets the credit of what was the successful effort of nature to cast off the illness. We hear little of the many cases in which the salt pork was given, but the cud was not restored. The only way in which the salt pork can assist in the recovery is by the action of the salt as a condiment encouraging digestion, and of both salt and lard as a laxative serving to unload the stomach of food that had tended to keep up indigestion. In the case submitted to us, in which the recovery occurred two days after the giving of the salt pork, there may possibly have been an action of this kind, but there is no direct evidence of this and the resumption of cud chewing may have been but the result of a spontaneous recovery from some temporary illness. It may be said in conclusion that no part of the system of the ox is so frequently deranged as the complicated chain of stomachs, and under almost any derangement the contents of these tend to become drier and impacted; also that in all cases of illness attended by fever the same result is brought about, so that a dose of laxative medicine to relieve the stomachs is a help toward the recovery of health. But in any such case it is much more rational to give a pound or of glauher salts and an ounce of ginger than to force upon the animal a mass of salt pork. To a carnivorous animal such a morsel might be appetizing, while to a herbivorous one like the cow it can only be disgusting.

Creameries in Humboldt County.

Senator McGowan reports that the business depression in Humboldt county is keenly felt. "Hard times," said he, "have stopped building on the coast, and that of course immediately affects the lumber trade. The mills are doing but little work, and many men are idle. As the lumber interests of Humboldt county constitute one of its great sources of wealth and trade, naturally all other lines of business are more or less affected. The agricultural and dairy interests of the county are quite prosperous, and they serve to keep matters from going from bad to worse. Humboldt is the great dairy county of the State. Owing to the cool summers of the northern coast, the feed on the ranges and in the valleys keeps green through a great portion of the year, and this greatly assists the dairymen. Many new creameries are in operation in the vicinity of Ferndale, in the Eel River valley. The butter product of the county for the past year is estimated at \$1,000,000."

Black Pepsin Brings Its Own Reward.

Readers may remember the exposure in these columns last year of a bungum butter-making compound bearing the name "black pepsin," the promoter being identified as one James A. Bain of Ohio, already known as the author of other frauds of the same description, notably of a swindle

in the spring of 1892, in which he signed himself secretary of a bogus "North American Poultry Association," and offered information about incubators which proved to be worthless. The outcome of these operations is the sentencing of Mr. Bain last week to three years in the penitentiary and a fine of \$300 for using the U. S. mail for a fraudulent purpose. The case was stubbornly contested in the courts, but justice and common sense have triumphed. We hope we shall now have a respite from the many petty frauds which have emanated from Ohio.

POULTRY YARD.

The Chance for Profit in Poultry.

Referring to what we said in the *RURAL* recently concerning the desirability of wider attention to the smaller industries of the farm, we introduce the following, especially relating to the services of the hen in farm economy:

By a wise selection of breeding fowls and a little of the best kind of care, the farmer may supply himself with a real luxury for his own table, but at the same time establish an income which will sum up an amount not at all insignificant at the end of the year. Upon the conditions named, any of the prominent breeds of chickens will fill the bill. Slipshod methods in the care of poultry will not pay any more than in the pursuit of any other branch of husbandry. A Pennsylvania correspondent says that in the Eastern States grain and cattle can no longer be raised at profit, and the farmers are casting about to find some other production which will enable them to make a living. I would suggest, what others have already suggested, that the poultry business offers an inviting field to increase the farmer's income. While breadstuffs and beef have gone down to ruinous rates, the price of eggs is nearly twice as great as it used to be. Instead of there being an over-production of eggs in this country, our Eastern States are importing them from France and Canada every year to supply the demands of our own people.

That the poultry business properly conducted can be made profitable in connection with farming has been proved over and over, and the methods practiced by the successful have been printed many times in the agricultural papers, and yet in the year 1889 we imported nearly two and a quarter million dollars' worth of eggs, and the year following almost as much. I have not the figures at hand, but there is no doubt we are still importing as many eggs as ever and sending the gold to pay for them. We can raise eggs cheaper than the French, because wheat, wheat screenings, meat and meat scraps and milk, which are the best egg-producing foods, are cheaper here than in France. Our hens can produce eggs cheaper than the Canadian's hens because our winters are not so severe, and our fowls, if well taken care of, can be made to lay more eggs in the winter when they are the dearest. Instead of buying over two million dollars' worth of eggs from other countries every year, we ought to supply our own markets and the markets of Great Britain.

An English book on poultry says: "Poultry is a class of stock deserving more attention than farmers generally give it. It is rare to meet with an instance where the breeding and management of poultry is conducted with the care and intelligence bestowed on other kinds of stock." The same might be said of the farmers of the United States—they do not give poultry-raising the attention which its importance demands. Not only this, but by many it is considered too small a business, not very profitable, and beneath the dignity of full-grown men. The poultry business on the farm is generally left on the hands of the wives and daughters without the provisions of a poultry-house or any coops for raising young chickens, and even the grain fed to them is given grudgingly by the head of the family. The poor creatures are forced to roost in trees, the wagon-shed or the toolhouse, where they defile the buggy and the tools with their droppings. If hens do not pay kept in this manner, it is not their fault. It is the testimony of reliable people that their hens have yielded them a clear profit of \$1.50 a head per year. If a farmer keeps but 50 hens, which are about as many as can be kept in one flock without breeding disease, and we say the clear profit is but \$1 per head, they will supply him \$50, which will be found very convenient to have in these hard times. Dressed poultry generally brings a good price except when the market is glutted about Christmas, and eggs are always in the best demand of anything raised on the farm.

Dryness in the Poultry House.

H. B. Greer writes in *Texas Farm and Ranch* as follows: Dryness in the poultry house is all important. A good roof should be the main feature. It don't pay to fool with any sort of a new fangled, cheap and weak roofing stuff, simply because it is only a "chicken house." It is best to get right down to business, and put on a first-class shingle roof at the start. It is the cheapest in the long run, and will be a source of satisfaction and congratulation as long as it lasts. In the first place, the hen manure is highly valuable for fertilizing, and should be saved dry. The best way to preserve it during the winter is to store it in barrels in the proportion of two parts of dry earth to one part of hen droppings. To effect this the latter must be kept dry, and dry earth should be stored in advance and, for convenience sake, under the same roof, and used as a deodorizer under the perches. In this way the droppings and the dirt are mixed naturally, and may be shoveled into convenient barrels and set aside until needed.

A good roof and dryness, however, is necessary for the preservation of the droppings. A dry hen house is a blessing to the poultryman, and it insures health to the fowls. It is easier and more pleasant in every respect to care for the chickens under a good roof, where all is dry and dust plentiful, than under an old leaky shed where mold and

bad odors abound. The latter is freighted with disease and discomfort.

"Fanny Field," some years ago, fooled us into building several straw poultry houses with straw roofs. We had read her account of some she had seen, and we liked the idea. We made the walls of rails—double walls—and filled in with straw. Then we laid rails on top of them four or five feet deep. It certainly made a snug, warm house, and we were well satisfied at first. It rained a little, but still we were happy. Finally, however, the rains developed into storms. The winds blew and surged about and drove the rain through the sides of our straw houses, and a little later it trickled down through the straw piles on top, and in a short time we had several good sized puddles right under the roosts, and the houses became chilly and uncomfortable inside. The chickens took the roup, and we lost a great many of them. So much for following theory. It is all very pretty on paper, but the only roof that is of any account is a shingle roof, or a tin one, and the best is the cheapest.

How a Florida Woman Manages a Setting Hen.

There are many good ways to handle a hen during incubation and they are always interesting to read about. The following is a woman's way, as described for the *Florida Agriculturist*:

Select a healthy, gentle hen, of medium size, not a very large or heavy one; get 13 good fresh eggs, have a box two-thirds full of clean dried pine straw, or hay (I prefer the pine straw, as insects do not thrive in it), put in three or four eggs, then let the hen sit on them. Give her the rest of the eggs as she draws them under her. In warm weather the nest should be cleansed once a week, while the hen is off for food and water. Remove the eggs carefully from the nest and have a small tin bucket with cotton in the bottom, in which to place the eggs; empty the straw out, and burn it; brush the box carefully, replenishing with clean straw. The third time this is done let it be done two days before the eggs are expected to pip. When chicks are heard chirping, pass the right hand directly in front of the hen, under her breast, and if several chicks are hatched, lift the hen off the nest by taking firm hold of her wings close up to the body, while with the other hand remove the empty shells. Then turn all pipped eggs with the holes down, so that the hen's toe nails cannot stick into them. If all the eggs are not hatched in 24 hours after the first chick is hatched, there is no use in keeping the hen and chicks in the nest. Put the hen and her little family in a clean, comfortable coop with a plank floor, so that the hen cannot scratch and cover up the chicks with the earth, and that there may be no chance for vermin to dig under. The hen now needs nourishing food after sitting so long—something fresh and green, such as lettuce, onion tops, or tender grass, also a handful of oats and plenty of water put in a shallow tin pan so the chicks can drink too. Put the pan close in the corner so that it will not turn over easily. Feed the chicks with coarse grits well soaked in water, but not sour. Occasionally sprinkle in a little red pepper. Young chicks should be fed five times a day the first week of their lives, just a little at a time. Keep them cooped up about three days. It is better to set two hens at the same time, so, if the eggs do not hatch well, all of the chicks hatched may be given to one hen. Hens will not carry their chicks long in the early spring, scarcely long enough for them to get feathers. One February I had three hens to wean their chicks, 36 in all, when only three weeks old. The first night their mothers left them; it being a cold night, they all huddled together in one coop. In the middle of the night they suffered so with the cold that they woke us up with their chirping. My husband, feeling sorry for them, got up and placed a gunny sack over them, and they immediately hushed their racket and went to sleep. The sack had to be placed over them every night until they had feathers enough to keep them warm. None of them ever got smothered, and I raised all of those chickens.

Give the Hens Teeth.

Grit takes the place of teeth possessed by all quadrupeds, says the *Farmers' Guide*. Fowls swallow all their food whole and when supplied with grit it is ground by the action of strong muscles of the gizzard bringing it in forcible contact with the short grit; they thus grind it upon the same principle that the old-fashioned millstones ground our wheat and corn. If no grit is within the gizzard then the action of the muscles proves abortive, the food is not ground up and the juices essential to proper digestion cannot be incorporated with it, and as a natural consequence it passes from them undigested, and while feeding an abundance of food, from lack of digestion our fowls starve to death. It is not the food eaten that determines the food problem, but the food actually digested and taken up by the blood and carried up by this agency to every part of the living animal. When food is masticated, as by the horse or pig, as soon as it enters the stomach it is ready to receive these juices of digestion, and no internal machinery is necessary as a further aid to proper digestion. With fowls it is entirely different. They must consume sufficient grit to complete the machinery in their gizzard mill. I have dwelt upon this subject because I have found so many to be so careless about supplying their fowls with grit.

MAYOR CARLSON of San Diego, president of the San Diego, Yuma & Phoenix Railroad, has returned from Mexico, having secured the right of way through General Andrade's lands, and the most valuable concession granted by Mexico for years—the freedom from all taxes for thirty years. The road will run ninety miles in Mexican territory, and parallel to the big canal for forty miles. Eastern capitalists wired Carlson that the money was ready to build the road.

DEPUTY FISH COMMISSIONER HUNT, of California, has left Carson, Nev., with 90,000 ova of Eastern brook trout, to be placed in the water at Bear Valley, Cal.

TRACK AND HARM.

Shall Farmers Breed Horses?

"Will it pay farmers to breed horses?" is a pertinent question to us all, and worthy of careful and earnest discussion. We all admit that the business of breeding horses, especially since the trotting boom, has been greatly overdone. The country to-day is full of horses, trotting-bred horses, that cannot trot and are not fitted for any practical purpose. Surely it will not need any argument to convince the farmer that it will not be profitable for him to add to this overproduction by breeding a few more.

The chances for getting a fast colt by breeding an ordinary mare to a fast stallion are remote indeed. Under the most favorable circumstances, when the fastest and best-bred animals are mated, the prizes are far from plenty. We see C. J. Hamlin, or Miller & Sibley, or William Corbett, send a stable of trotters through the grand circuit, and a Fantasy, with her record of 2:08½ at three years, or a Belle Flower or a Muta Wilkes wins many thousands of dollars, and we are apt to think good fortune will strike us, and we breed a few more trotting foals in the hope of getting a world-beater. If we stop a moment to consider the other side we may do differently. Does it ever occur to you, dear reader, that each of these breeders has probably half a million dollars tied up in trotting horses? That from among 300 to 400 under the most careful training the few sensational performers are found? That it costs at least \$10,000 a year for the salaries of trainers and attendants upon the horses in training, to say nothing of the traveling expenses, entrance fees and other expenses incidental to campaigning a stable of horses? If any one will take these figures and make a fair comparison with his own resources, he can figure out the probable chances of his success in breeding trotters. There was a time when the farmer—when any one—could make money breeding trotting stock, but that time has passed.

What, then, shall the farmer breed? This is a hard question to answer, but I believe the Hackney will for some time to come be the most profitable horse for the farmer and small breeder to produce. By this I do not mean the pony without a tail that one can see every day prancing through Central Park. I mean horses of substance and size. Many people think the Hackney fit only to draw a tandem cart or fancy trap for style, but this is a great mistake. The Hackney is a type of much more powerful build than the trotter, and a much more useful animal for general utility. Where a trotting-bred horse, 15½ hands, will weigh 950 to 1000 pounds, a Hackney of the same height will weigh 1200 pounds. This size is fully heavy enough for the coach or heavy family carriage, and a pair of nice half-bred or full-bred Hackneys, from 15½ to 16 hands, will bring a price representing a nice profit to the breeder. Those that range from 15 to 15½ hands will make ideal road horses and also be adapted for general farm work.

It has been aptly remarked that trotters have too much nervous energy for farm work. This nervous energy is the essential thing for extreme speed, but when extreme speed is not attained it does not follow that the speed failure will be an ideal plow horse or family driver. Give a farmer a pair of compact, full-bred Hackneys, 15 or 15½ hands and weighing 1000 to 1100 pounds each, and he has an ideal team for the plow, the mowing-machine, the market wagon, the family carriage—in fact, for every purpose except to enter in the speed classes at the county fair.

As to the expense of raising a horse, every reader can figure that for himself. It will certainly cost less to get a horse of this type ready for market than the trotter that must be developed and the speed shown to command any price. A Hackney is ready for sale when matured and nicely broken, although, of course, if driven about the adjoining town and accustomed to the sights of the city, this is a great advantage. One point I believe every breeder should study, and that is finish. Breed handsome horses and good size. Many trotting families incline to be small, and the greatest sires and many of the greatest performers were small. George Wilkes was a small horse, less than 15 hands; Electioneer was a small horse and very plain in conformation; Daniel Lambert was under 15 hands; Dictator is only 15 hands, and Harold, the sire of Maud S., was no larger. Size seems of little importance in extreme speed. Fantasy, that trotted to a record of 2:08½ this year at three years of age, stands nearly 16 hands, while Sea King, that acquired a record of 2:21½, is 13½ hands high. When, however, a horse cannot trot fast, size becomes very important. I bred two trotting mares this year to a Hackney stallion. The mares were small, one being 14½ hands, and the other 15½ hands. Both are mares of high nervous energy and fast at the trotting gait. I bred them to a Hackney stallion standing nearly 16 hands, and I find by referring to the catalogue of Bloodgood Farm that his sire was 15½ hands, his grandsire 15½ hands, his great-grand-sire 15½ hands and his great-great-grand-sire 16 hands. His dam was by a horse 15½ hands, and her dam by a horse of the same size, and all through the pedigree the prevailing size is from 15½ to 16 hands.

If there is any law of heredity—and we know there is—the produce will be larger than the dam, and I shall have made a beginning to breed up in size. Unless a farmer or small breeder has a natural adaptation for handling horses there is little prospect of profit in breeding trotters. There was a time when young stock could be sold on the pedigree—and sometimes on a mighty poor pedigree at that—but that time has passed, never to return. A buyer now demands to see speed and value before he pays out his money, and the only way to get speed is to develop it.

The Hackney type is the farmer's type *par excellence*. By breeding his mares in the fall, they can be used to do nearly or quite the entire work on the farm, and any breeding animal is really better for moderate work rather than to be kept in idleness. Again, if the foal is liberally fed as it should be for the first two years, it can then be put at light

work, such as the harrow, the hay rake and the family carriage; in this way it can be made to more than pay its keep, and it will at the same time be receiving lessons that will add to its future usefulness. Under such circumstances it will scarcely cost the farmer more to raise a first-class horse than it would to raise a cow or an animal for beef, and certainly the horse would far outsell either of the others.—L. C. Underhill in *Country Gentleman*.

THE FIELD.

Significant Changes in American Agriculture.

New farms were created in the United States to a number exceeding 600,000 during the ninth decade, which closed with 1889—almost three times as many farms as there are in the Empire State. Yet the increase in production was nothing like the marvelous expansion which American agriculture witnessed in the eighth decade. The figures afforded by the eleventh census, taken in June, 1890, compare as follows:

TABLE A—FARM STAPLES OF THREE DECADES

Census Year.	1889.	1879.	1869.
Population.....	62,480,540	50,155,788	38,568,371
Wheat, bushels.....	468,906,778	459,483,137	287,745,626
Corn, bushels.....	2,124,689,312	1,764,591,676	760,944,549
Oats, bushels.....	809,198,797	407,858,999	282,107,159
Cotton, pounds.....	8,646,564,880	2,572,645,478	1,337,326,224
Tobacco, pounds.....	488,255,896	472,681,157	262,785,841
Hops, pounds.....	39,171,270	25,646,378	25,466,669
Sheep, No.....	38,935,364	36,192,074	28,477,951
Wool, pounds.....	201,998,890	165,681,751	100,102,387
Milch cows, No.....	16,511,950	12,443,120	9,835,332
Other cattle and oxen.....	34,852,622	23,482,391	14,885,276

To get a fair idea of the development indicated by these figures, their relation to population must be considered. If we produce twice as much of a food staple now as we did when our population was only one-fourth its present size, this means retrogression—failure of consumption to keep up with production. Hence Table B is given, showing (1) the percentage increase in the production of the various staples during the two past decades, and (2) the supply of each staple per 1000 population at three intervals:

TABLE B—PERCENTAGE INCREASE—SUPPLY PER 1000 POPULATION.

	Percentage Increase.			Supply per 1000.		
	In '89 over '79	In '79 over '69	In '89 over '69	1889.	1879.	1869.
Population.....	24.6	30.1	62.0	*62,480	*50,155	*38,568
Wheat, bushels.....	1.9	59.7	62.8	7.496	9.161	7.468
Corn, bushels.....	21.1	130.6	179.2	34.008	34.983	19.785
Oats, bushels.....	98.4	44.6	186.8	12.961	8.132	7.316
Cotton, pounds.....	28.6	92.4	147.6	52.969	51.393	34.638
Tobacco, pounds.....	3.3	79.9	85.8	7.814	9.424	6.814
Hops, pounds.....	47.6	4.3	53.9	627	523	259
Sheep, No.....	2.1	23.6	26.2	578	702	734
Wool, pounds.....	29.8	65.6	101.8	8,258	3,104	2,596
Milch cows, No.....	32.7	39.7	84.8	248	245	232
Other cattle & oxen.....	48.4	57.8	134.1	568	468	386

*Population, last 000's omitted.

The attention is at once arrested by the fact that while population increased nearly one-fourth from 1880 to 1890, the wheat crop of '89 gained only one-twelfth as much, or two per cent, whereas in the previous ten years the wheat crop gained 60 per cent. The corn supply did not keep pace with population, instead of the tremendous increase of the previous period. Much the same was true of cotton; the supply of tobacco was actually less than ten years ago, though hops show a large gain, but the increase of oats took on enormous proportions. Though sheep have not added much to their numbers, the wool clip has kept up with population; milch cows have gone ahead of it, and the gain in other cattle and oxen has been still greater.

TABLE C—CHANGES IN AND RELATIONS OF AREA OF STAPLE CROPS.

Census Years.	1889.	1879.	1869.
Wheat, acres.....	33,574,341	35,430,333	19,181,004
Corn, acres.....	72,076,074	62,368,504	37,103,000
Oats, acres.....	28,297,272	16,144,693	9,462,000
Cotton, acres.....	19,970,040	14,480,019	7,750,000
Tobacco, acres.....	692,990	638,841	481,000
Hops, acres.....	60,212	48,800	35,000

	Acres per 1000 of Population.			Percent'ge Increase in Ac'ge.		
	1889.	1879.	1869.	1889 over 1869	1879 over 1869	1889 over 1879
Wheat.....	537	706	495	5.3	84.7	78.9
Corn.....	1,163	1,243	962	16.6	68.1	94.3
Oats.....	458	322	245	75.3	70.7	199.1
Cotton.....	320	288	201	38.0	86.7	159.1
Tobacco.....	11	18	18	8.5	32.8	44.1
Hops.....	0.8	0.9	0.9	7.8	33.7	49.5

It is the acres of each crop, however, that form the only true basis for comparison, owing to the many influences that affect yield. Table C gives this information. There were actually five per cent fewer acres of wheat in 1889 than ten years earlier. The breadth of corn, tobacco and hops has not increased at any such rate as population in the past decade, but the cotton acreage has made great strides, and oats have increased in acres even more than in yield.

The census of 1890 is certainly offering strong evidence in favor of the theory that production is not likely to increase faster than consumption. Certainly the conclusion is justifiable that the era of over-production by extensive farming has reached its limit in the United States, with a consequent upward tendency to land values and an increase of yields per acre only as market prices warrant intensive farming.—American Agriculturist.

GRAPELAND irrigation district, San Bernardino county, has run a tunnel 800 feet under the bed of the Lythe creek. Recently the workmen broke through the bedrock and struck a large stream of water and work had to be suspended until the tunnel can be protected from the wash of the stream. It is proposed to extend the works 150 feet further and tap the entire overflow of the stream, with which it is expected to irrigate the entire district.

THE STABLE.

How to Breed Mules.

The Report of the Bureau of Animal Industry just issued has an excellent paper on breeding mules which has much local interest in California, for here the mule is in high esteem, and no doubt more mules could be profitably produced. The essay is from a leading Tennessee breeder, and we make the following extracts:

The Kind of Sire to Breed From.—There are two kinds of jacks—the mule jack and the jennet jack, or combined jack, that is, good for either mares or jennets, and is used chiefly in breeding jacks for stock purposes. It is only with the mule jack that we will deal, as the jennet jack is too costly to breed to mares, as a rule, unless the mares are of extra quality.

A good mule jack ought to be not less than 15 hands high, and have all of the weight, head, ear, foot, bone and length that can be obtained, coupled with a broad chest, wide hips and with all the style attainable with these qualities. Smaller jacks are often fine breeders, and produce some of our best mules, and, when bred to the heavier, larger class of mares, show good results; but, as "like produces like," the larger jacks are preferable.

Black, with light points, is the favorite color for a jack, but many of our gray, blue and even white jacks have produced good mules. In fact, some of the nicest, smoothest, red-sorrel mules have been the product of these off-colored jacks; but the black jacks get the largest proportion of good-colored colts from all colored mares.

The breed of the jack is also to be looked into. There are now so many varieties of jacks in the United States, all of which have merits, that it will be well to examine and see what jack has shown the best results. We have the Catalonian, the Andalusian, the Maltese, the Majorca, the Italian and the Poitou—all of which are imported—and the native jack. Of all the imported, the Catalonian is the finest type of animal, being a good black, with white points, of fine style and action, and from 14½ to 15 hands high, rarely 16 hands, with a clean bone. The Andalusian is about the same type of jack as the Catalonian, having perhaps a little more weight and bone, but are all off colors. The Maltese is smaller than the Catalonian, rarely being over 14½ hands high, but is nice and smooth. The Majorca is the largest of the imported jacks, the heaviest in weight, bone, head and ear, and frequently grows to 16 hands. These are raised in the rich island of Majorca in the Mediterranean sea. While they excel in weight and size, they lack in style, finish and action. The Italian is the smallest of all the imported jacks, being usually from 13 to 14 hands high, but having good foot, bone and weight, and some of them make good breeders. The Poitou is the latest importation of the jack, and is little known in the United States. He is imported from France, and is reported to be the sire of some of the finest mules in his native land. These jacks have long hair about the neck, ears and legs, and are in some respects to the jack race what the Clydesdale is to other horses. He is heavy set, has good foot and bone, fine head and ear, and of good size, being about 15 hands high.

The native jack, as a class, is heavier in body, having a larger bone and foot than the imported, and shows in his entire make-up the result of the limestone soil and grasses common in this country. He is of all colors, having descended from all the breeds of imported jacks. But the breeders of this country, seeing the fancy of their customers for the black jack with light points, have discarded all other colors in selecting their jacks to breed to jennets, and the consequence is that a large proportion of the jacks in the stud now, for mares, are of this color.

The native jack, being acclimated and to the manor born, seems to give better satisfaction to breeders of mules than any other kind. From observation and experience, it is believed that our native jacks, with good imported crosses behind them, will sire the mules best suited to the wants of those who use them in this country, and will supply the market with what is desired by the dealers. The colts by this class of jacks are stronger in make-up, having better body, with more length, larger head and ear, more foot and bone, combined with style equal to the colts of the imported jacks.

While many fine mules are sired by imported jacks, this is not to be understood as meaning that imported jacks do not get good foals, yet, taken as a class, we think that the mule by the native jack is superior to any other class. This conclusion is borne out by an experience and observation of some years, and by many of the best breeders and dealers in the United States.

The Kind of Mare to Breed From.—As the mule partakes very largely in its body and shape of its mother, it is necessary that care should be taken in selecting the dam. Many suppose that when a mare becomes diseased and unfit for breeding to the horse, then she is fit to breed for mules. This is a sad mistake, for a good, growing, sound colt must have good, sound sire and dam.

The jack may be ever so good, yet the result will be a disappointment unless the mare is good, sound and properly built for breeding. First, she should be sound and of good color—black, bay, brown or chestnut is preferred. Her good color is needed to help to give the foals proper color, and this is a matter of no small importance, as we shall see further on.

This should not be understood as ignoring the other colors, for some of the best mules ever seen were the produce of gray or light-colored mares, as many dealers and breeders will attest. The mare should be well bred—that is, she would give better results by having some good crosses. By all means, let her have a cross of thoroughbred, say one-quarter, supplemented with strong crosses of some of the larger breeds, and the balance of the breeding may be made up of the better class of the native stock. The mare should have good length, large, well-rounded

barrel, good head, long neck, good, broad, flat bone, broad chest, wide between the hips and good style.

How to Breed the Mule.—Having selected the sire and the dam, the next thing is to produce the colt. The sire, if well kept and in good condition, is ready for business, but not so with the mare. The dam is to be in season—that is, in heat. She should be bred about the first of April in the latitude of Tennessee, and at other places as the season opens, according to climate. Before being bred, to prevent accidents, the mare should be hobbled or pitted. Having taken this precaution, the jack may be brought out, and both will be ready for service. Care should be taken not to overserve the jack, as he should not be allowed to serve over two mares a day, and not nearer than eight hours apart.

The mare, after being served, may be put to light work, or put upon some quiet pasture by herself for several days until she passes out of season, when she may be turned out with other stock to run until the eighteenth day, when she should be taken up to be teased by a horse to ascertain if she be in season; and, if so, she should be bred again. Some breeders think the ninth, some the twelfth and some the fifteenth day after service is the proper day to tease, but observation has taught us that the best results come from the eighteenth-day plan. After she becomes impregnated, she should have good treatment; light work will not hurt her, but care should be taken not to overexert. She should have good, nutritious grass if she runs out and is not worked, but if worked she should be well fed on good feed. The foal will be due in about three hundred and thirty-three days. As the time approaches for foaling, the mare should be put in a quiet place, away from other stock, until the foal is dropped. She will not need any extra attention, as a rule, but should be looked after to see that everything goes right.

After the foal comes, it will not hurt the mare or colt for the dam to do light work, provided she is well fed on good, nutritious food. Should she not be worked and is on good grass, and fed lightly on grain, the colt will grow finely, if the mare gives plenty of milk; if she does not, the foal should be taught to eat such feed as is most suitable.

In weaning the colt, much is accomplished by proper treatment preparatory to this trying event in the mule's life. It should be taught to eat while following its mother, so that, when weaned, it will at once know how to subsist on that which is fed to it. The best way to wean is to take several colts and place them in a close barn, with plenty of good, soft feed, such as bran and oats mixed, plenty of sound, sweet hay and, in season, cut grass, remembering at all times that nothing can make up for want of pure water in the stable. Many may be weaned together properly. After they have remained in the stable for several days they may be turned on good, rich pasture. Do not forget to feed, as this is a trying time. The change from a lactic to a dry diet is severe on the colt. They may all be huddled in a barn together, as they seldom hurt each other. Good, rich clover pastures are fine for mules at this age; but, if they are to be extra fine, feed them a little grain all the while.

There is little variety in the feed until the mules are two years old, at which time they are very easily broken. If halter-broken as they grow up, all there is to do in breaking one is to put on a harness and place the young animal beside a broken mule and go to work. When it is thoroughly used to the harness, the mule is already broken. Light work in the spring when the mule is two years old will do no hurt, but in the opinion of many breeders and dealers make it better, provided it is carefully handled and fed.

CEREAL CROPS.

Indian Wheat Production.

Until we get large enough to eat all our wheat in this country, we shall be interested in knowing what other countries can do. The situation in India as described by a resident, Mr. T. P. Hughes, in the *American Agriculturist* is interesting reading. He says that now that the rupee of British India is a recognized factor in the monetary conditions of the commercial world, it is interesting to note that India ranks third among the countries of the world as a wheat-producing country, with every prospect of taking a second if not a first place, both as to production and export. The United States exports some eighty-three millions of bushels out of its annual yield of four hundred and forty, and Russia is able to spare about the same quantity out of its production of two hundred and forty millions of bushels. And although France stands second on the list, as a producer of three hundred and ten millions of bushels, she is the importer of thirty-eight millions of bushels, and the rapidly increasing population of the United States would indicate a gradually increasing demand for home consumption. In the meantime the growth of wheat in India is rapidly increasing, and the yearly exports of wheat from the ports of Kurrachee and Bombay show a marvelous development of the country as a wheat contributor to the markets of Europe. During the last year the estimated growth of wheat in India was two hundred and three millions of bushels, or about one bushel to each unit of the population of that vast empire. Out of this quantity, thirty millions of bushels were exported, being about one-eighth of her production, as compared with the one-fifth of America and the one-third of Russia. This year the yield is estimated at two hundred and sixty-seven million bushels. But while the export of wheat from the United States may be expected to dwindle, as her population and industrial development progresses, the surplus of wheat in India must be an increasing quantity.

Owing to a magnificent system of irrigation carried on throughout the Indian empire, under the control of skilled experts in the science of irrigation employed by the government, the growth of wheat in those sunburnt regions no

longer depends upon the rainfall. In those fertile districts where the government irrigation works have been constructed, the farmer gets his spring and autumn harvests without waiting for the "former and latter rain." This is especially the case with the valley of the Punjab, which only 30 years ago was dry and arid, but now blossoms as the rose under the fertilizing influences of those great works of irrigation so efficiently worked and controlled by the government irrigation department. The opening of a railway to Cashmere brings another almost unknown wheat-producing country into the market. And the recent annexation of Burmah another. In fact, British India is still undeveloped. It is a country in which you can never say of any enterprise, it is finished. The Indian zamindar, or land-owner, is as ignorant of the possibilities of his country as a settler in the Wild West. He has not yet awaked to the fact that there is a wheat market beyond the limits of his own land. The native farmer never reads a newspaper, and is a man destitute of ambition in commercial life. It was only a few years ago that he had to protect his lands against the inroads of the enemy, and he can scarcely realize that a reign of peace and commercial prosperity has begun. There is, in fact, no organized system of commercial development beyond the paternal rule of "the barra sahib," or the "great gentleman," as the district magistrate is called. This officer, to use the native expression, is literally the "mabap" or "mother and father" of the Indian farmer. But such a form of rule is not conducive to the development of private enterprise, and it might safely be said that whatever India has done in the way of increasing its export of wheat, it has been the result of a happy "kismet" rather than of any organized system of trade. What is needed is increased capital and increased energy. A few millions of British capital and an importation of American enterprise would make Kurrachee a very important metropolis, and the Chicago of Asia. The great obstacle to the expansion of the Indian wheat trade is the less remunerative price which it commands in the market, owing to its dirty condition. The Indian farmer garners his wheat under the enlightened rule of the Queen-Empress very much as he did in the warlike days of Barber. He threshes his wheat on the dry sod in front of the village hostel just as Gideon did in the time of the Judges, and this wheat is stored in earthen barns which are pulled to pieces when the native agent from Kurrachee or Bombay pays the village his annual visit. It is therefore not surprising that hundreds of tons of "pure dirt" are shipped to Europe at the exporter's expense, and that the London and Liverpool brokers still depreciate the wheat produce of British India. But all this will be changed in the course of a few years, and ere long India, the land of the silver rupee, must rank second, if not first, among the wheat-producing countries of the world.

THE IRRIGATIONIST.

Irrigation Practices in Eastern Washington.

In eastern Washington there are between 500,000 and 1,000,000 acres of land which is being made tillable and fertile to the highest measure by irrigation. Large tracts are brought under cultivation by this method also in Idaho and Oregon. During the past four years many large companies have been organized, extending ditches hundreds of miles into the arid districts, and are successfully supplying water to growing crops, which increases the value of these lands more than twenty-fold. The *Northwest Horticulturist* gives an account of operations in this new country which is interesting to compare with our own methods and policies. The products mostly grown on these lands to this time are the various orchard and root crops and alfalfa.

Practical growers are united in the opinion that the lands should be well soaked in the fall, about the last of November, then again early in spring, after which the harrow should be run over the ground to break the crust and to keep it from baking, when after a few days it will be ready either for the cultivator or plow.

The methods of irrigating orchards are very simple. It is only necessary to put the water where it will do the most good, and that is as near as possible to the extremities of the rootlets. The extent of the roots of a tree bears a ratio somewhat approaching that of the branches. Near the stem there are few of the root hairs or fine fibers by which nutriment is absorbed. In irrigating an orchard the most perfect method of applying the waters is to distribute it in a broad, circular channel around the tree, distant about six feet from the stem. Small distributing channels are made from the lateral ditches, which will best serve the purpose, on the soil irrigated, to bring the water in position to the tree and roots as described. Care must be taken not to apply too much water, as stagnant water is fatal to the life of all useful vegetation, and where water is applied too freely it will be necessary to underdrain. Persons beginning are very apt to make the mistake of applying too much water after once turned on. When the ground has been made damp and mellow for seeding, and crops have started, then water should only be applied when the ground needs it; and when the water is turned off, shallow cultivation should follow shortly after to stop the loss of moisture by evaporation, except after the last application for root crops.

The penalty for excessive irrigation in orchards is a crop of fruit of inferior quality, watery, soft and without flavor; the wood and leaf are pushed at the expense of the fruit. It is therefore necessary to act with extreme caution. Early fruiting trees require little or no irrigation, and the late ones are watered only after the fruit is set and needs to grow vigorously. As the ripening season approaches, the water is withdrawn unless the necessity is absolute. During flowering no water is given at all, unless exceptional drouths occur, and then with moderation and at intervals. In irrigating fruit trees properly, the operator is obliged to exercise the greatest care in not going to extremes—on the

one hand the evils of excess, and on the other hand the periodical and certain damages which this practice enables him to obviate or mitigate when intelligently applied.

Having excellent slope and great depth of soil the lands under this ditch will hold much water, or good crops may be grown with even a moderate supply which Mr. H. K. Bicknell says has been demonstrated by his personal experience through a number of years. After giving the ground a thorough wetting first in the fall, then in early spring, it is best to follow by harrowing and plowing, which on most of these slopes can be done a few days after stopping the water. The crops and young trees are then planted, and for fruit trees use no more water until the fruit is well set; apply about the same time for growing trees. Use no more for early fruits, but the winter apples may be watered again in July. For potatoes wet the ground thoroughly before planting and keep the water off until the vines are about 15 inches high; meanwhile give constant shallow cultivation at intervals with harrow or cultivator. Apply the water again when the tubers are setting, then again at intervals when the ground needs it, but do not cultivate after the potatoes are in blossom. For alfalfa after the spring watering no further irrigation is needed until after the first crop is matured and harvested, which is along in May, when the ground is again thoroughly soaked, the water taken off, and a second crop matured; following in like manner with the third crop.

These general principles govern for other crops as they partake in the nature of any of those described. The general tendency of those now located on these lands where water was applied last year and previous to then, is to use water excessively and give too little cultivation. Less water and more constant use of harrow and cultivator when crops are growing will in most cases produce much better results.

In constructing the head ditches it has been found most satisfactory to use board troughs made by using boards of suitable lengths, $1\frac{1}{2} \times 8$ inches for bottom, and side pieces each of 1x8 inches nailed to the bottom. Large holes are then bored at suitable distances for the "leaders." Head ditches of above size will be sufficiently large to carry the water for ten acres, and can be made at a cost of three cents per foot.

HORTICULTURE.

California Canned Goods.

We are indebted to the Cutting Fruit Packing Company for the following review of the California canned goods trade in 1893:

The condition of the market when the season opened was not especially favorable, owing to the large "carry over" that had accumulated during the packing seasons of 1891 and 1892, not only at prominent points but in foreign markets as well. As jobbers, however, at all points were not presumed to carry as large stocks as usual, it was estimated and hoped that the surplus would be used up during the spring trade, and that the packers might count on producing an average pack during the season, with fair returns. It was expected, too, that the World's Fair would somewhat increase demand, both on account of the location and domestic consumption, as well as to the attention drawn to the goods through an unusual number of strangers visiting the country. Under these prospective conditions canners made their usual engagements for cans and other supplies outside of green fruit, while for the latter they made as many engagements as they were able during the spring months, considering the high values fixed by fruit-growers, who based their ideas largely on the prospective increased consumption, but without full regards to actual facts.

The packing of early varieties in May and June was very heavy, particularly of cherries, of which there was doubtless a larger pack made than ever before known. The final cataclysm, lasting from the middle of June to the present time, knocked all previous calculations to such an extent that the prices for raw material were fully 50 per cent less. This, however, fortunately, did not cause a corresponding increase in pack, as sufficient funds could not be realized by any packers, even had there been any encouragement that they could sell their product, there being quite a period during which absolutely no pecuniary accommodation whatever was furnished by banks or any other financial source.

The pack of cherries was doubtless about 85 per cent of the previous years, while that of peaches doubtless reached 50 per cent. Plums and pears had little attention given them, and it is fair to presume not over 25 per cent of the usual pack was made of these two varieties. Little attention, as well, was paid to other varieties, and the total pack of all together was doubtless not exceeding 60 per cent of previous years—possibly 50 per cent would be nearer.

The usual pack of peas was almost wholly neglected on account of there being a tremendous "carry over" from 1892. The tomato pack for the year was quite up to the previous season, there being an absolute clean up of all stocks on hand by the first of July, both on this coast and throughout the East, so that there was a very heavy advance up to the time the goods of new pack went on to the market.

The sale of fruits for the year has been very light and at prices corresponding with low values of all merchandise throughout the country, so that it is problematical if much net profit has been realized by any packers on the year's work.

Touching the stocks on hand at present, nothing absolute can be ascertained, as each packer of course keeps his business to himself, and no statistics worthy of consideration can be reached. It is fair, however, to presume, through the small and light demand ruling throughout the season, that the large "carry over" a year ago, together with the 60 per cent pack of the present season, leaves a large stock on hand that could not have been found at any

previous similar date for many years past. If such is the fact, the prospects are far from being satisfactory, and it is a serious question how much encouragement there is for canners to continue business to any great extent the coming year. Certainly there is no strong advance in prices or values to be looked for, even though the stocks in jobbers' hands are, as is confidently asserted, much lighter than heretofore, as it has become almost a settled fact that jobbers will not hereafter carry large stocks, but will rather pursue a hand-to-mouth course and oblige packers to carry stocks from which they can draw.

Meeting of the County Commissioners.

The pressure upon our columns last week in setting forth the transactions of the Fruit Exchange Convention compelled postponement of an outline of the doings of another very important body, viz., the organization known as the County Horticultural Commissioners' Association of Northern California. H. P. Stabler, one of the most extensive Sutter county fruit-growers, is president, and George M. Gray, of Chico, secretary. "This is not a close organization," explained Chairman Stabler at the meeting on Dec. 28th, "but simply a convention of horticultural commissioners."

The commissioners present put in a full day, holding three sessions. They were as follows: From Alameda county, William Barry; Butte, George M. Gray and Eben Boalt; Yolo, Joseph Lamme and H. C. Howard; Tulare, N. W. Motheral; San Joaquin, W. H. Robinson; Nevada, Stephen Richards; Colusa, F. W. Willis; Sutter, R. C. Kells and H. P. Stabler. Besides these there were Dr. N. H. Claffin of Riverside, ex-commissioner of San Bernardino county, and D. M. Pyle of Bakersfield, ex-commissioner of Kern county.

Before the meeting reached the business for which it had come together, Secretary Lelong of the State Board called attention to the unsettled balance of \$600 on the Young & Powers claim for drafting and lobbying through the Legislature the tree pest bill.

Of the original amount of \$1109 the commissioners from the principal fruit-growing counties had succeeded in liquidating as much as \$500, and though one or two of them, like Mr. Robinson, had had to pay the assessment made on their counties from their own pockets, it was felt that the best thing to do was to make a reapportionment by assessing the liberal counties once more, which was eventually done. It is expected that the fruit-growers generally will come to the rescue of the commissioners on the matter, since the bill was made a law for their particular benefit.

That disposed of, the commissioners settled down to a discussion of fruit-tree pests and remedies, Messrs. Motheral, Boalt, Kells, Barry, Stabler, Gray and others giving their experiences and observations.

The habits and ravages of the pernicious scale, as it is called, the woolly aphis, and the peach root borer, an Eastern pest which now gives much trouble in this State, and various other insects, were dwelt upon at length; also the formation and effect of root-knot. The questions taken up were:

"What insects or diseases have we to contend with and how shall we proceed?"

"What plan shall we adopt in shipping trees from one county to another so as to have as little friction as possible?"

"Shall we allow Eastern stock shipped here? If so, upon what conditions?"

At the request of Chairman Stabler, the State quarantine officer, Alexander Crow, gave his observations on pests, which, in substance, were:

"The pernicious scale is rapidly becoming a thing of the past. It is almost extinct in the San Jose district. Resin wash and the usual wash of lime, salt and sulphur are very beneficial. The brown-necked scymnus (ladybird) is the most beneficial parasitic destroyer of the scale. I don't advise sparing the trees where ladybirds are numerous, but rather the protection of the parasites."

Mr. Boalt interrupted to say that in the mountainous sections there was still plenty of scale. Mr. Crow continued:

"The woolly aphis is a more serious pest to fight, as it is mostly in the roots of trees and out of reach. It doesn't thrive upon resisting stocks, however, like the Northern Spy and an Australian variety of apple. It is a good idea to scatter wood ashes around the trunks of trees when dormant, and to spray the trees with a resin wash in the summer time. The aphis breeds in both the roots and the branches."

Speaking of washes, he recommended a very good quality of whale-oil soap, if that were used, but said the resin wash was more penetrating.

About the root knot there was much that was mysterious, according to Mr. Crow. It is found chiefly upon peach trees, and experiments by Secretary Lelong and himself had not proved it to be contagious. Even inoculation had been unsuccessful. He advised the rejection of infected trees only.

On the question of shipping trees from one county to another, it was decided to have the most rigid inspection made, and a system of bale tags and certificates will be used to fortify fruit-growers against suspicious nursery stocks.

Mr. Crow thought there was very little danger in fruit shipments, as the fruit was usually consumed and the pests destroyed in peeling. To dip or fumigate fruit might hurt its market value. If anything were done at all, citrus fruit should never be dipped; it might be fumigated with hydrocyanic acid gas, but he felt very little apprehensiveness about the likelihood of red scale infection spreading from orange shipments.

The Commissioners decided to exercise the utmost vigilance respecting the shipments of graftings, buds, pits and trees from the East. Some Pike county (Mo.) stock had been found very badly infected. A committee composed of Messrs. Motheral, Boalt, Howard, Kells and Crow was

chosen to arrange with railroad station agents for the notification of county horticultural commissioners whenever Eastern shipments arrived.

The evening was spent in a general discussion of the different scales and their natural enemies, the ladybird parasites.

Room for More Fruit.

TO THE EDITOR:—The tree-planting season is with us again and the question whether to plant or not to plant is being seriously considered by many who had planned to set out extensive orchards during the present season. A combination of causes resulting in low prices for fruit have combined to give a serious aspect to this question, and to arouse to activity the periodical bugaboo of overproduction. The extreme tightness of the money market during the past season, the inability of packers to secure from the banks the necessary advances to carry their usual volume of business, the consequent small local demand for fruit, a large eastern crop and a natural curtailment of that market, all combined to depress the fruit industry of California during the past season. Added to this is an uncertainty as to the future caused by the prospective tariff reduction. All these causes have combined to make the outlay of capital in new orchards a very serious one.

Were this condition of depression the first one which California fruit-growers had experienced, the outlook would indeed be gloomy, but there have been numerous occasions when they have had to face a depressed market, when overproduction has been aired extensively, yet the area in orchards has steadily increased and the markets have as steadily widened, and despite the dull season, we do not appear to be nearer the dreaded epoch of overproduction to-day with our vast acreage of fruit, than we were ten years ago with the comparatively small area then under cultivation. A glance at the annual expenditures of the United States for imported fruits will indicate that there is yet a vast unsupplied field in our own country which California should and, with proper encouragement, will fill. For the fiscal year ending June 30, 1893, there were imported into the United States the following list of fruits, which California should supply and for which nearly \$15,000,000 were sent away:

Figs.....	\$ 548,995
Lemons.....	4,994,342
Oranges.....	2,901,228
Plums and prunes.....	1,162,318
Raisins.....	1,266,342
Currants.....	1,185,537
Preserved fruits.....	864,166
Unclassified fruits.....	1,239,582
Almonds.....	938,054
Other nuts.....	51,941
Olive oil.....	891,424

Total.....\$16,043,929

It is evident from the above list that there is yet ample room for our California fruits in competition with the foreign product, to say nothing of the large foreign demand for our fruit products in China, Japan, Australia, South America and the islands.

The present depressed market is largely the result of the financial flurry and will be of temporary duration. While it is not probable that the Democratic Congress will take any action that will seriously injure so important an industry as fruit-growing is to California, and in view of these facts and the history of the past, those who have contemplated planting need not hesitate on account of prospective overproduction, that *ignis fatuus* of the Californian, which has always existed in the distance. The probabilities are that there will always be a good demand at fair prices for good California fruit.

Each year gives us a wider market for our fruits, improvements are making in the means of preserving fresh fruits, improvements in drying and canning, more rapid and better means of transportation are given us, and all these keep pace with the increased output. The product of California is not now, nor ever has been equal to the consumption of our own land; it is not probable that it ever will be, for by the time our young orchards come into bearing the facilities for reaching the consumer will correspondingly increase, and the demand be very much enlarged. That there will come seasons of depression cannot be doubted; that many orchardists will lose money is equally true; but the man who plants intelligently, who watches the market closely, who supplies what that market requires, will make a success in the fruit business in the future as he has done in the past, and no other kind of man should engage in it.

INCREASE OF OLIVE PLANTING.

A very marked interest in olive growing has developed in the past two years, and the present season will see a larger plant of this fruit than has been known in any preceding year. The olive presents many advantages to the fruit-grower. While fully appreciating good soil and careful attention, it will grow in locations where other trees would fail. It is easily propagated and requires comparatively little skill or care in its cultivation. It will endure a greater degree of cold than trees of the citrus family, and has a much wider range in both latitude and altitude than most varieties of fruit. In addition, it gives its crops in a season when there is little other fruit to be attended to, and its product is not forced upon the market. The grower can hold his oil or his pickles for a market. These are a few of the advantages offered by the olive that may account for its present popularity, and, added to this, there is a feeling that olive growing has not been nor is it likely to be overdone, as is evidenced by the statements of profits made by some of the leading growers of the State.

There has been a steadily increasing demand for olive products in our own State and from the East, which gives promise for the consumption of all that can be produced for some years to come, and Mr. Cooper states that the demand for his oil was so large that he had to very largely increase the price, and even then the demand upon him was greater than he could supply.

San Francisco.

WE GIVE ESPECIAL ATTENTION TO

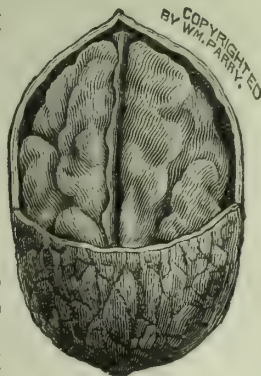
Fruit Trees! Deciduous Fruit Trees!**ALEXANDER & HAMMON'S**

Rio Bonito Nurseries, Biggs, Butte Co., Cal.

KAGHAZI**PERSIAN**

:- SOFT SHELL :-

:- WALNUT! :-

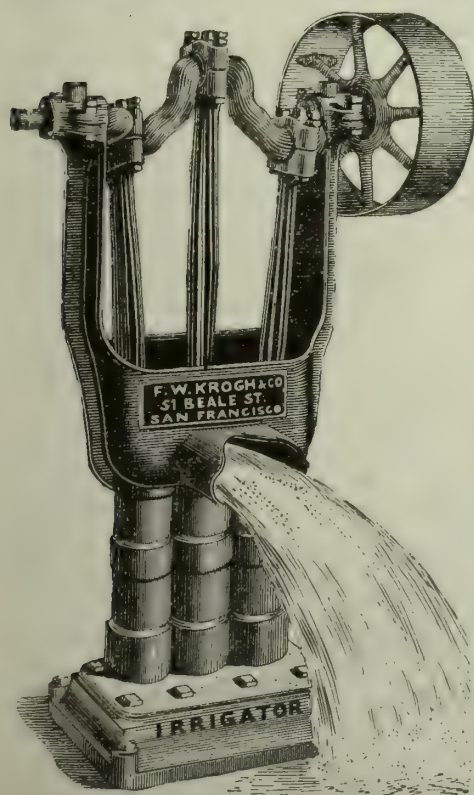
Our Stock of TREES and VINES is Most Complete
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DURING the last three years, trees grown on the FEATHER RIVER BOTTOM LANDS, at RIO BONITO, BUTTE COUNTY, have been much sought after, and the demand for them is increasing all over the State where they have been planted. Owing to the peculiar adaptability of the soil and climate of this section for growing nursery stock, the trees making a very large and well-furnished system of root growth, and maintaining a correspondingly strong and vigorous top, maturing the wood thoroughly, we are enabled to supply our patrons with the best of trees, healthy in every respect, entirely free from insect pests, and in perfect condition for transplanting.

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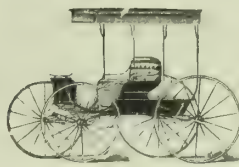
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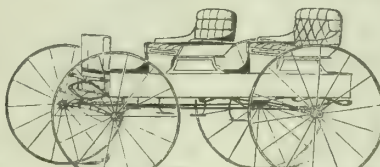
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THE HOME CIRCLE.

Growing Old.

The fairest lilies droop at eventide,
The sweetest roses fall from off the stems,
The rarest things on earth cannot abide,
And we are passing, too, away like them.
We're growing old.

We had our dreams, those rosy dreams of youth,
They faded, and 'twas well. Their after prime
Hath brought us fuller hopes, and yet, forsooth,
We drop a tear now in this later time
To think we're old.

We smile at these poor fancies of the past—
A saddened smile almost akin to pain.
Those high desires, those purposes so vast,
Ah, our poor hearts, they cannot come again!
We're growing old.

Old? Well, the heavens are old; this earth is, too;
Old wine is best, maturest fruit most sweet;
Much have we lost, more gained, although 'tis true
We tread life's way with most uncertain feet.
We're growing old.

We move along and scatter as we pace
Soft graces, tender hopes on every hand.
At last, with gray streaked hair and hollow face,
We step across the boundary of the land
Where none is old.

The Children's Room.

How peaceful at night
The sleeping children lie.
Each gentle breath so light,
Escaping like a sigh!
How tranquil seems the room, how fair
To one who softly enters there?

Whose hands are those, unseen,
That smooth each little bed?
Whose locks are those that lean
Over each pillowed head?
Whose lips caress the boys and girls?
Whose fingers stroke the golden curls?

Whose are the yearning eyes,
And whose the trembling tear?
Whose heart is this that cries,
Beseeching God to hear?
Whose but the mother's, in whose face
Love shows its sweetest dwelling place?

Her hopes in beauty bloom,
And heaven sends down its light,
Which lingers in the room
Where mother says "Good night."
Soft treading by the sleepers there,
Her very presence seems a prayer.

—Buffalo Commercial.

Her Answer.

"I'm going to be married," he softly said.
She looked up in swift surprise;
The color from out of her bright face fled,
The light grew dim in her eyes.

"You're going to be married?" she echoed low—
Her voice had a steady tone—
"I hope you'll be happy wherever you go,"
A cough hid a little moan.

"I know that your bride will be good and true—
You never could love any other."
She steadily looked into his eyes, dark blue—
"I tender you joy, my brother."

"I'm going to be married—that is, I hope
To be, though I hardly know.
Dear Love, shall I longer pine and mope?
I tremble for fear of a 'no.'"

The color that out of her face had fled
Came back with a deeper hue.
"Why, isn't it funny," she shyly said,
"That I'm to be married, too."

A Fairy Story.

AMONG the mountains in Norway lived Hans. One day he lay on a sunny bank watching the fleecy clouds, swift messengers of thought, as they sped across the blue ether, and he saw them take on many strange shapes. Now a monstrous troll, as the mountain giants are called in Norseland, would stand out in bold relief, and again curious beasts and birds would present themselves to his eager eye.

All at once he was afloat in folklore land, where he was to meet face to face beings of whom he had heard so much. He was bound to visit the castle of the Mountain King, the mightiest of trolls. The air was full of music, and he heard the birds singing about this king and his treasures.

Hans now heard a whizzing in the air, and there appeared before him the biggest bird he had ever seen in his life. As it plunged down beside him, it almost seemed as though a huge load of hay had been dumped on the ground.

If Hans would get on his back, the bird told him he would bear him to the Mountain King's castle, but the boy must hold fast to the feather at the nape of Bird Dan's neck lest he fall. This feather, you must know, was as big and as tall as a half grown spruce tree.

Hans did as he was bid, and away they went sailing through the air so fast that the wind whistled after them. Presently they reached some noble grainfields, and here

Bird Dan paused to fill his crop. It frightened Hans to see how much he could devour. The boy himself sat down to partake of the modest lunch he carried with him, when he saw a man lying with his ear close to the ground.

"What are you doing?" asked Hans.
"I am listening to the grass," was the reply. "My ears are so fine I can hear every blade as it grows. I need less sleep than a bird, and I can see a hundred miles by night as well as by day."

"You'd be a useful man to have on my journey," said Hans. "Will you go along?"
"Yes, if Bird Dan will take me, and if you'll give me some of your lunch."

"My lunch isn't much, but such as it is I'll gladly share it with you," said Hans.

Bird Dan consented, and away they went with the new comrade.

When next they paused, Hans saw a man walking about with his hand over his mouth.

"What is the matter with you?" cried Hans.

"I'm the man that has swallowed seven summers and fifteen winters, and I keep my hand over my mouth lest they all escape at once and make utter confusion in the world."

"You'd be a useful comrade," said Hans. "Will you join my party?"

The man was willing if he might have some lunch and if Bird Dan would consent. So it was quickly arranged for him to go.

After Bird Dan had pursued his swift flight for a time with these three comrades on his back, Hans asked:

"How far shall we have to go?"
"As far as the east lies from the west," was the reply.

"How long will it take us?"
"As long as it takes the sun to make the same journey."

At this moment the man whose eyes and ears were so sharp cried out:
"I can see into the Mountain King's castle. There is one who has told him you are coming, Hans, and the king is ready for you."

"I think I'm afraid," said Hans.
"Don't fear," said the man with the seven summers and the fifteen winters. "I'll help you."

"We're most there now," said Bird Dan. Sure enough, there flickered and flamed before them a hedge of fire, and beyond it a castle glowed like the noonday sun.

"Now," cried Bird Dan, "our good friend with the many seasons may let out a piece of a winter."

The man sent forth a chilling blast that quickly parted the flames and made Hans shiver.

"Go boldly into the castle," now said Bird Dan to Hans, "and perhaps the Mountain King will not be so dangerous as you think. His body is bigger and stronger than yours, but you have more sense than he. Keep your wits about you, and if you need help call on your ready helpers."

Hans made his way to the castle. He passed through room after room, but saw no one. At length he came to the great hall where the king sat at a table counting his money.

"Hu-te-tu!" cried the king. "How dare you enter my castle? Don't you know I could grind you to powder with one blow of my hand?"

"That I do," cried Hans in a flattering tone. "But I know you won't harm me for all that."

"And why, pray?" thundered the Mountain King.
"Because I'll make myself so useful to you," said Hans.

"You useful to me!" sneered the Mountain King.
"Try me," cried Hans.

"Very well," said the Mountain King. "If you're man enough to sit in my smokehouse and tend to the furnace while 300 cords of wood are burned in it, I shan't harm you."

"I'll do it," said Hans, "if I may take a friend of mine along."

"Take all your friends," was the reply, given with an air of assurance.

"May I have a peep at your treasures if I come out alive?"
"Aye, truly, if you come out alive!"

So Hans took the man who had swallowed so many winters and summers, and they entered the smokehouse about dusk. There was already a scorching fire in the furnace, and there was no escape, for the king had locked the door.

"You will have to let loose six or seven winters," said Hans to his friend.

The man did as he was asked, and as the night wore on the temperature became actually chilly. Now a few summers were let out, and the friends slept comfortably until dawn.

When the king opened the door in the morning, the man of many seasons blew a

cold blast right in his face, so that the royal nose was pinched with frost.

"May I see your treasures now?" asked Hans.

"First you must find my son, the child prince. He is lost, and I mourn for him night and day," declared the Mountain King.

"I'll find him," said Hans.

He now sought the man who could see and hear so far.

"Help me find the Mountain King's son," cried Hans.

The man listened and looked, and at last he said:

"He is on the mountain, 100 miles from here. I can both see him and hear him cry. Bird Dan must carry us to the spot."

So they called on Bird Dan and soon restored the young troll prince to his father. Now Hans was told he might ask for his pay.

"Give me," said he, "the rusty sword that hangs on the wall."

"That you cannot wield," replied the Mountain King.

"Yes, I can," said Hans, "for I will drink of the water of life in the bottle on yonder shelf."

So he got the sword and the refreshments.

"Now," cried he, "for a lamp to light my path, and then I'm off to see the treasures in the cavern beneath the castle."

"The lamp you will find in the chamber of light," said the Mountain King, "but you will be powerless against the dragon that guards my treasures."

"We shall see," said Hans, and finding the lamp he went down into the bowels of the earth, lighted by its bright glow.

The dragon reared its hideous head at his approach, but with one blow of his sword he severed this from its body. Just as the Mountain King came to the door to find out what was going on, the sun burst in full glory from behind a cloud.

Then troll and castle disappeared, and Hans was left alone with the treasures he had so faithfully earned. Bird Dan was quickly summoned, and he bore Hans, with the treasures and the ready helpers, to the place where they could be most useful.—Exchange.

Gems of Thought.

By conversing with the mighty dead we imbibe sentiment with knowledge.—Hazlitt.

One only "right" we have to assert in common with mankind—and that is as much in our hands as in theirs—is the right of having something to do.—Miss Murlock.

The golden moments in the stream of life rush past us and we see nothing but sand; the angels come to visit us, and we only know them when they are gone.—George Eliot.

There is no greater work on earth than that of developing everything in man, of bringing it into harmony, of holding it back from wrong-doing, and pushing it forward to positive excellences. He builds a great thing who builds a pyramid, but he builds a greater thing who builds a character.—H. W. Beecher.

The soul of a true philosopher, being convinced that it should not oppose its own liberty, disclaims as far as is possible the pleasures, lusts, fears and sorrows of the body, for it knows that when one has enjoyed many pleasures or given way to extreme grief or timorousness, or given himself to his desires, he not only is afflicted by the sensible evils known to all the world, such as the loss of health or estate, but is doomed to the last and greatest of evils—an evil that is so much the more dangerous and terrible that it is not obvious to our senses.—Plato.

Private devotion is essential to the spiritual life; without it there is no life. But it cannot replace united prayer, for the two things have different aims. Solitary prayer is feeble in comparison with that which rises before the throne echoed by the heart of hundreds, and strengthened by the feeling that other aspirations are mingling with our own. And, whether it be the chanted litany or the more simply-read service or the an-

them, producing one emotion at the same moment in many bosoms, the value and the power of public prayer seem chiefly to depend on this mysterious affection of our nature—sympathy.—F. W. Robertson.

The Arab Steed.

The origin of the best strain of Arabian blood has been related by some romancer. While Mohammed was fighting his way to greatness, he was once compelled to lead his corps of 20,000 cavalry for three days without a drop of water. At last, from a hilltop, they descried the silver track of a distant river. Mohammed ordered his trumpeter to blow the call to dismount and loose the horses. The poor brutes, starving for water, at once sprang into a mad gallop toward the longed-for goal. No sooner loosened than came the alarm—false, as it happened—of a sudden ambush. "To horse!" was blown and repeated by a hundred bugles. But the demand was too great; the parched throats were not to be refused; the stampede grew wilder and wilder as 20,000 steeds pushed desperately for the river banks. Of the frantic crowd, but five mares responded to the call. To these, duty was higher than suffering. They turned in their tracks, came bravely back, pleading in their eyes and anguish in their sunken flanks, and stood before the Prophet. Love for their master and a sense of obedience had conquered their distress, but their bloodshot eyes told of a fearful torment—the more pathetic for their dumbness. The danger was over; the faithful mares were at once released; but Mohammed selected these five for his own use, and they were the dams of one of the great races of the desert. From them have sprung the best of Arabian steeds. It can, however, scarcely be claimed that the average horse of the Orient comes up to this ideal. He must have been bred from the 19,995.—From "Riders of Turkey," in Harper's Magazine.

Popular Science.

A bat can absorb and digest in one night three times the weight of its own body. Bats never have more than two little ones at a time.

Refined crystallized sugar, whether made from the beet or the sugar cane, is almost pure saccharose, and is the same substance in both cases. Few articles of food are so generally free from adulteration as granulated—not powdered or coffee-crushed—sugar.

Why do flocks of wild ducks and geese form a triangle when they have to fly long distances? It is because they know that in that form they can cleave the air most easily. The most courageous bird takes its position at the apex of the great triangle, and when it becomes weary of the heavy task another takes its place.

In South America among the mountains the evergreen oak begins to appear at about 5500 feet, and is found up to the limit of the continuous forest, which is about 10,000 feet. The valuable cinchona tree, from which Peruvian bark is obtained, has a range of elevation on the mountain slopes running from 4900 to 9500 feet.

Water boils at different temperatures, according to the elevation above the sea level. In Baltimore, water boils practically at 212° F.; at Munich, in Germany, at 209½°; at the City of Mexico, in Mexico, at 200°; and in the Himalayas, at an elevation of 18,000 feet above the level of the sea, at 180°. These differences are caused by the varying pressure of the atmosphere at these points. In Baltimore the whole weight of air is to be overcome. In Mexico, 7000 feet above the sea, there are 7000 feet less of atmosphere to be resisted; consequently less heat is required, and boiling takes place at a lower temperature.

The Intrinsic Cash Value of a Man.

We have it on the authority of Thackeray that you have to wait until 40 years before you know the worth of a lass. The knowledge would not then appear to have much

Highest of all in Leavening Power.—Latest U. S. Gov't Report.

Royal Baking Powder
ABSOLUTELY PURE

value; and it is fortunate that science now presents an exact means of determining the worth of a lad of any age. The last census officials, or some other infallible authority, have had his constituent ingredients weighed, appraised and filed away as a permanent standard of value in the archives of the National Museum at Washington—much as the Smithsonian Institution or other grave authority preserves the standard yard-stick or the standard quart. It is somewhat of a relief thus to find the value of an every-day 154-pound young man placed by the government as high as \$18,300. We had not deemed they took so exalted a view of human nature at Washington. But they give us chapter and verse for the same, or rather weight and measure; for they have the body of such a man neatly decomposed and put up in jars or bottles on the shelf.—From "The Point of View," in Scribner's Magazine.

Good Luck In Stones.

There are, happily, very few girls in existence who are entirely without a spice of sentiment in their disposition.

A ring of beautiful design and workmanship always proves an acceptable gift, and will remain a valued souvenir long after the first flush of youthful romance has left the heart, never to return.

The girl born in January should wear a garnet, for that will win friends for her wherever she goes.

The girl born in February must have an amethyst, because that will make her sincere, protect her from poison and from slanderous tongues.

The girl born in March must have a blood-stone, because that will make her wise and give her patience and strength to bear trouble.

The girl born in April must have a diamond, because that will keep her innocent and pure, happy and generous.

The girl born in May must have an emerald, for that will make her a happy and healthy wife.

The girl born in June must have a topaz, for that will make her truthful and protect her from fairies and ghosts.

The girl born in July must have a ruby, because they will bring her great love and keep her free from jealousy.

The girl born in August must have a sardonyx, because that will make her a happy wife and mother.

The girl born in September must have a sapphire, for then she will never quarrel with her sweetheart.

The girl born in October must have a carbuncle, for that will make her love her home and family.

The girl born in November must have an opal, for that will bring her luck in money matters and in love.

The girl born in December must have a turquoise, for that will bring her friends, health, happiness and riches.

Humorous.

The next best thing to owning something is to be willing to do without it.

A scientist has discovered that women live longer than men because they talk more.

As regards most men, it is less dangerous to injure them than to put them under an obligation.

"It was awfully clever of baby. He had never been told what flowers were, but the minute he saw them he said 'Bwobs!'" "But what does Bwobs mean?" "Flowers, of course."

Jenks—"I can't understand how shipwrecked sailors ever starve to death." Filkins—"Why not?" "Because I just came over from Liverpool and I never once felt the least desire to eat."

Sutor—"And do you really think you could support us in the style to which I have been accustomed?" Her father—"I really think so." Sutor—"Then you may become my father-in-law."

Inebriated Party—"Wish (hic) I knew shome way of coming home shober." Sober Friend—"That's easy enough. Make it a rule always to go home on a bicycle. No man ever went home drunk on his bicycle."

Traveler (taking out a well filled cigar case)—"Pardon me, but have you a match?" Seedy Individual (suggestively)—"Yes, but I have nothing to smoke." Traveler—"Then you won't need the match. Thanks."

Hungry Higgins—Gee! What's the matter with your eyes?" Dismal Dawson—"It all comes from reading the funny things in the papers. I got the fool notion into my head that a woman don't know how to throw a brick."

Fashion Notes.

At present the women of Paris are wearing gowns of black wool satin, made very plain, the skirts being gored and finished with seven or nine rows of colored stitching, giving the effect of bordered goods, which is very charming.

A very pretty gown is made of green hopsack with a plain, full skirt, while the bodice is arranged with the plaited basques, which are so much worn, and prettily cut reverses of the fashionable black moire arranged very effectively.

Among the new tailor-made gowns is a very effective one of chestnut-brown diagonal cloth, with the skirt made to button on the bodice, opening slightly at the waist in a point, showing a broad braid of the same color on which is a button at each side where the skirt fastens. The back is round at the waist and with two buttons for holding the skirt. Over the bodice is a wrap of three capes of the same material as the gown, lined with surah, with a band of braid on each cape.

The favorite gowns for little children are the wool dresses of bright, warm plaids in soft art serges, and the newly revived cashmeres that come in every shade are daintily ornamented. These little gowns have borders just scalloped with silk embroidery and hems laid in with a fine vine of silk embroidery.

The evening dress for little boys is the Eton suit with long trousers, short coat and broad round linen collar. Boys of ten years wear this suit.

Younger boys wear dressy suits of black velvet with white waistcoat and shirt very much ruffled with lace.

Some very stylish cloth coats this season are made double-breasted, with large buttons of smoked mother of pearl, and arranged with a turn-down collar of velvet. This is cheap, but effective.

Another pretty coat is of brown beaver cloth, made tight-fitting and edged with wide black braid. It is made with a turn-down collar and wide reverses, and is fastened in a double-breasted shape with large black buttons.

Curious Facts.

Somebody who claims to know says that a child three years old is half the height it will ever be.

An English officer, being hypnotized in South Africa, began to speak in Welsh, which he had known as a child, but forgotten for 20 years.

The idea of an ancient tropical continent at the south pole, uniting South America, Madagascar and Australia, is arousing considerable interest and discussion in scientific circles.

A break in the main water pipe in a street in Tombstone, Arizona, recently, was found to have been caused by the roots of a tree which had grown around the pipe and crushed it so that it burst.

The rudder of the Cunard steamship Campania consists of a single plate of steel 22 by 11 feet 6 inches and 1 1/4 inches thick. It was rolled at Krupp's German gun factory.

A new pneumatic tire brought out in England, which is described as a really good thing, has a pad of prepared cotton wool covered with soft cloth, which is inserted between the cover and air chamber, rendering it almost impossible to puncture it even with a sharp awl. The weight of this pad is 50 ounces, and the cost is trifling.

Hints to Housekeepers.

Sweet oil and putty powder, followed by soap and water, makes one of the best medicines for brightening brass or copper.

Never rub your eyes nor allow your children to do so from their cradles.

A restaurant-keeper says celery wants to lie in cold water an hour before it is chewed.

A large, soft sponge, either dry or slightly dampened, makes a good duster.

Silver, brilliantly polished and arranged on the finest of snowy damask, is the chief ornament of the smart dinner table of the moment.

A good remedy for chapped lips is made by mixing together two spoonfuls of clarified honey with a few drops of lavender water. Anoint the lips with the mixture frequently.

The correct way to use doilies on the table is to place them under finger bowls and other simple dishes for which they are made. If no tablecloth is used, and the surface of the shining mahogany table is exposed, the doilies are placed under the plates in order that the table may not be scratched.

DOMESTIC ECONOMY.

Six Savory Soups.

Cauliflower Soup.—Boil a medium-sized head of cauliflower in boiling salted water until quite tender, and set aside to cool. Mince fine a very small green onion and two small tender stalks of celery. Put these in a granite saucepan with a teaspoon of butter and let simmer on the back of the stove. When done, but not brown, add a dessert spoon of flour and stir until well mixed. Now cut off the blossom ends of the cauliflower and set aside. Then rub the rest through a coarse strainer and add to the mixture on the stove. Salt and pepper to taste, after adding one pint of milk. Let boil slowly 20 minutes, and just before serving add the blossoms of the cauliflower minced fine.

Vegetable Soup.—Take three carrots, three stalks celery, two turnips, a tender cabbage leaf, a sprig of parsley, half a parsnip, and a small onion. Chop all pretty fine. Put these in a granite saucepan with a generous teaspoonful of butter and let them brown well, stirring constantly to prevent burning; then add three pints cold water and let simmer slowly two hours.

Ojiaca (A Cuban Soup).—Take a ten-cent soup bone and one pound round steak cut in small pieces, and put on to boil with two quarts cold water. Add one pint of tomatoes, two onions, six chill peppers (for the American taste use mild ones), a tiny bit of sweet marjoram and a teaspoonful of Worcestershire sauce. Let boil very slowly four hours. The result will be a compromise between a stew and a soup, but of delicious flavor and very strengthening. Salt to taste. The fiery Cubans even add a dash of red pepper.

Clam Soup.—Fifty clams, one quart of milk, one pint of water, two tablespoons of butter. Drain off the liquor from the clams and put it over the fire with six whole allspice, six whole peppers, three blades of mace, and salt to taste. Let boil ten minutes and strain out the spices. Put in the clams and let boil half an hour, closely covered. Then add the milk, scalded, in another vessel and a dessert spoon of ground barley rubbed into the butter. Let come to a boil and serve.

Delicious Oyster Stew.—Pour one pint of cold water over a quart of oysters, stir well and drain the liquor into a buttered stewpan. Let it boil, skim and then add one-half a teacup of Highland evaporated cream, or one teacup of cream, and one of milk. Let come to a boil, put in the oysters and the moment the edges curl remove from the fire. Salt and pepper to taste.

Bean Soup.—Soak over night in lukewarm water one quart of bayou beans, or white, if preferred. Next morning cut in small pieces a pound of salt pork and fry in a granite saucepan until brown. Add the beans, with one gallon of water, and let boil slowly three hours, well covered. Then add six stalks of celery and two tomatoes. Salt and pepper to taste and let simmer one-half an hour longer. Strain through a colander and serve.—Kate C. Hubbard, in Santa Cruz Surf.

POTATO SALAD.—Cut ten medium-sized potatoes into thin slices or dice, according to taste. Put them into a salad bowl with one tablespoonful of chopped parsley and some slices of pickled cucumbers or capers. Put a heaping saltspoon of salt and an even saltspoon of pepper into a cup and add one tablespoonful of oil. Mix thoroughly and add two tablespoonfuls of oil, one of vinegar and four or five drops of onion juice. Pour this dressing over the potatoes, toss them over carefully and serve. The onion juice is obtained by peeling the onion, cutting it in half and squeezing it in a lemon-squeezer exactly as you would squeeze a lemon. A good-sized onion will give about a tablespoonful of juice. This is a much quicker and easier method than grating.

ORANGE MARMALADE.—The Riverside Press says Mrs. E. J. Davis furnishes an excellent receipt for making marmalade. It is known as the Cross & Blackwell recipe, and is as follows: Take same weight of oranges and sugar. Boil the oranges as they come from the tree until they can be pierced with a straw, then pour off the water and pour on cold water and peel them as hot as the oranges can be handled with a sharp knife; remove all the white from the inside of the rind and slice the peel in very thin shreds with a pair of scissors. Cut up the pulp, removing all shreds and seeds, and mix the whole together and boil fast for 20 minutes and jar hot.



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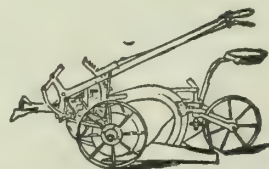
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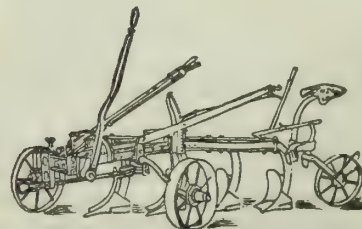
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PATRONS OF HUSBANDRY.

Random Thoughts.

By A. P. ROACHE, W. M. S. G. of California.

Don't try to reach your distant goal by any kind of luck.
Pull off your coat and buckle down and win it square by pluck.

The new A. W. will soon go out to many granges; no member who is not clear on the secretary's books up to and including Dec. 31, 1893, is entitled to receive it. None but masters of subordinate granges can impart it to the members of their respective granges, except in the case of a deputy who organizes or reorganizes a grange. He may impart it, by direction of the proper authority, to the masters of granges he institutes or revives.

The following general deputies have been appointed for the year, and it is hoped none will refuse to act: I. C. Steele, E. W. Davis, J. V. Webster, G. P. Loucks, Daniel Flint, B. F. Walton, S. T. Coulter, Cyrus Jones, Wm. Johnston, B. F. Frisbie, W. L. Overhiser, George Steele, C. W. Norton, D. A. Ostrom, A. J. Woods, A. T. Dewey, J. D. Huffman, Delos Wood, O. N. Cadwell and J. A. Perry.

District deputies will be appointed as soon as the names of those desired by the various districts are forwarded to the master's office. Send in the names of your choice patrons and let us get to work early.

In accordance with a resolution passed by the last State Grange, the Legislative Committee to serve during the next two years shall be: Thomas McConnell, Wm. Johnston and J. D. Huffman.

The worthy lecturer and secretary have set a splendid example in supporting the columns of the RURAL PRESS with items of interest and information. Let all the facile pens of our able sisters and brothers come to the rescue and let us inaugurate a literary crusade that will arouse many a sleeping grange from its "Rip Van Winkle" slumber.

A merchant attempting to do business without a commercial paper could not long hope to compete with his reading, hence better posted rivals. To a farmer, dealing with so vast a variety of natural and artificial causes, an agricultural paper becomes even more valuable than does the commercial to the merchant, yet two out of three farmers read only political papers, get their political provender all second-handed and partizanized, and read but little in the farm papers they do take because they cannot spare the time. Farmers, such things are short-sighted and unworthy of us; if we would make our business pay we must make a business of it, for the days of slim margins promise to linger long with us.

This space is reserved for week after next for Hon. Past Master Steele (who never stole anything but the hearts of many patrons). As the senior past master he will christen the pages of the RURAL for the new year with seed thoughts for patrons, after which it is proposed to no longer suffer the extreme modesty of our able patriarchs to hide their "lights under a bushel."

Bro. Holman, regretted much to miss your "Independent Standpoint," even for so good and grand a cause as you mention.

A. P. ROACHE.

From Pescadero.

TO THE EDITOR:—From the long silence of Pescadero it might be inferred the grange was dead or declining. We are still trying to fulfill the obligations to which all members of our order have pledged themselves. We can count on having a good attendance at every meeting, of earnest workers, and most of them are heard from on every question brought before the house. At our last meeting, Jan. 6th, the officers for the ensuing year were installed by Worthy Past Master B. V. Weeks, assisted by Bro. Isa Steele.

Bro. I. C. Steele, that grand old grange warhorse and champion of all that is good and noble, was the recipient of the master's jewel, which was placed upon his breast for the seventeenth time. Our grange, under the leadership of Worthy Master Steele, has been brought out of the Slough of Despond to its present high standard. Each officer, on being conducted to his seat, responded to the call of the worthy master in a neat and appropriate speech.

"Does industry need protection?" has been decided on for debate at our next meeting, and I expect we will hear from some of our grange orators. The question, no doubt, is a deep and complicated one, and requires much earnest thought; but, then, a woman is not supposed to understand the intricacies

of these tariff questions, so will listen to those who are better posted on the subject.

There have been sufficient rains here for all agricultural purposes. Grass has been growing nicely until the last few days, which have been quite cold with some frost and frozen ground, which has put a check on its growth. Farmers are plowing and preparing their ground for seeding.

Dairying is the principal business carried on in this part of San Mateo county; but its capabilities are not confined to that particular business alone. Fine apples, pears, plums, prunes and cherries are raised here, and all kinds of small fruits, such as blackberries, raspberries, strawberries, currants and gooseberries, can be produced in abundance with proper and skillful attention to their culture. Some of the products of our orchards, in all probability, will be seen in San Mateo county's exhibit at the Mid-winter Fair. I understand that some of the ladies of Pescadero intend placing on exhibition, at the fair, such articles as moss work, pebbles from Pebble Beach, paintings, etc.

EMILY A. LEIGHTON,

Pescadero, Jan. 7, 1894.

From Yuba City.

TO THE EDITOR:—Our Grange installed its officers on Saturday, the 6th, in accordance with previous arrangements. Past Master of the State Grange, Daniel Flint of Sacramento, was the installing officer and performed his part like a veteran in the cause, assisted by Bro. B. F. Walton. The latter has been among us from his Eastern tour nearly two weeks, but has bounced around so lively that his nearest neighbors could no more than catch a glimpse of him as he dodged around the corners. But grange day brought him up standing and gave all an opportunity to give him a shake. It soon became apparent that circulating among the big stars of the order and the great cities East had no injurious effect on our brother. Time being limited, he deferred to a later time giving us a chapter of his experience while gone.

Aside from the installation services, which were very impressive, the meeting was rendered interesting by remarks from Bros. Flint, Walton, Carpenter, Frisbie and others on the good of the order. Bro. Flint was particularly apt and happy in pointing out the good the order had done him and was capable of doing for others who place themselves within the fold. The theme of individual and corporate advancement was touched upon, and it was felt that the present spirit throughout the State of co-operation had its origin in the Grange, in which our community had taken a leading part.

State Deputy B. F. Frisbie announced that installation of the other granges of the county would take place as follows: March Grange, at Pennington, January 13th; North Butte Grange, at Live Oak, January 20th; South Sutter Grange, at Pleasant Grove, January 27, 1894.

Invitations to attend were read by the secretary, and Yuba City Grange will doubtless distribute itself over this jurisdiction.

Two events have occurred with four members of our grange that deserve to be chronicled. Two young brothers took unto themselves two young and accomplished sisters in marriage, on the sole theory, I presume, that "it is not good for man to be alone," or words to that effect. Evidences of the coming co-operation were visible a long while back, and the happy day had been set, by the public, so long ago that all lost interest in it, when it came like a flash from a clear sky. First it was Enos E. Grover and Nannie Guinn, and, second, Lawrence Schillig to Belle Evans Greely. It is said the ceremony makes man and woman one, but in this instance it is a comfort to know that our membership is not to be curtailed by the event.

It should also have been mentioned at the proper time, which occurred months ago, that Bro. L. H. Woodworth, editor and manager of the Sutter County Farmer, heeded the above admonition about living alone, and took to himself one of Sutter's accomplished daughters as a life partner.

Bro. Lon found his affinity without the gates of the grange. Our many attractive ladies are inclined to pronounce this an unpardonable offense. But he is not alone. Another brother, Chas. W. Gupitill, is a two months' old victim of woman's wiles without our circle. All cherish the hope that both brothers will lead their charming partners to our inner band.

The writer was again selected to represent Yuba City Grange in the columns of the RURAL for the present year. As he is contemplating a trip East on indefinite leave of

absence, I hardly see how he is going to fulfill this duty.

The unprecedented acreage that is to be of grain this year is about two-thirds seeded. It would all be in except for the late rains, which retard sowing if not plowing. The earlier sown is looking very fine and all are encouraged over the favorable prospects for the year 1894. Fraternally.

Jan. 9, 1894.

GEORGE OHLEYER.

San Jose Grange.

TO THE EDITOR:—San Jose Grange is neither dead nor sleeping, but the regular grange correspondent has for some time been wrestling with Monsieur La Grippe, with at times a question of who would be the victor. But by the aid of a good doctor and an excellent nurse (my good wife), La Grippe was compelled to beat a retreat, and the correspondent allowed to resume his duties.

Between the labors in the vineyard, the orchard and the farm, our meetings were poorly attended during the later summer and fall months, but now that the crops are secured, and mostly marketed, the vacant places in our hall are being filled, as at our last two meetings from sixty to eighty were present.

Last week a class of ten were taken to the Master's office to receive the fourth and last degree a subordinate grange can confer.

To-day the following officers were installed: R. P. McGilncy, Master; G. W. Worthen, Overseer; Mrs. Amos Adams, Lecturer; W. Beauchamp, Steward; D. Coats, Assistant Steward; Mrs. M. Wingate, Chaplain; G. W. Tarleton, Treasurer; Mrs. J. M. Worthen, Secretary; W. Lister, Gate-keeper; Miss Jennie Saunders, Pomona; Miss Ada Ross, Flora; Mrs. N. J. Tarleton, Ceres; Miss Ada Unglish, Lady Assistant Steward; Miss Nellie Jeffers, Organist; and D. H. Blake, Trustee.

It is conceded by all, that we have elected the right men and the right women to the right places, and if San Jose Grange does not enjoy a boom the coming year it will not be for lack of zeal or efficiency on the part of the newly installed officers.

Last week our grange adopted a protest against changing the tariff on green or dried fruit, and a committee consisting of Pettit, Wheeler and Hersey were instructed to telegraph it to our members in Congress.

Notice was given that, at our next meeting, a resolution would be introduced favoring "tariff reform."

An interesting feature of the meeting to-day was the able and instructive remarks by three visiting members from Illinois—Mrs. J. J. Brown and the Messrs. J. B. and R. S. Hanlen. The consensus of opinion expressed was that the grange was purely an educational and social institution, and that for granges to succeed the elements of success must be in the members of the grange.

Now, Mr. Editor, if it were only possible to rivet in the minds of each member of the order that to his or her individual effort depended in a measure the success or perhaps the life of their grange, and would always enter the grange hall with something to impart that would interest or instruct the grange, less failures and less dormant granges would exist.

When grangers become thoroughly imbued with the idea that the grange as at present constituted is but an educational (I give this word the broadest definition) and social institution, and that permanent success can only be attained by individual effort, for this effort itself is one of the educational features of the grange, or, as a brother in our grange to-day said: "One of the best ways to educate ourselves is to help educate others." And then, as soon as possible, we must unlearn and eradicate from our minds the belief that the State or National Grange will or can do anything to put life or vigor into subordinate granges. Success or failure lies within the walls of each grange.

Our secretary informs us that San Jose Grange has contributed to the State Grange during the last year nearly \$110. While we do not think this is more than some other granges paid, it is a goodly sum to pay to keep up an organization.

And here let the writer express his individual opinion that, if the late State Grange failed to indicate in the slightest degree any object to attain—any course of action for granges in their organized capacity to pursue—it has at least given us one of the best, if not the very best, set of State Grange officers we have ever had; and if they cannot, during their terms of office, build up the order in this State, it will not be a fault of theirs.

AMOS ADAMS.

San Jose, Jan. 6, 1894.

The Secretary's Column.

Bennett Valley Grange installed their officers January 6th, and a good time in general was had. A harvest feast was furnished by the sisters and all report having a good time. Bennett Valley Grange intends holding one of its meetings during the month on an evening, at which time they will have literary exercises, and, after grange, a hop until 12 P. M.

Owing to business I was unable to visit Sebastopol Grange and install their officers on Saturday, January 6th. Brother James Moran acted as installing officer, and they report having a good time and an excellent meeting. More enthusiasm was displayed than there has been for some time. I regret that I was unable to be with the good people of Sebastopol, but trust I may be able to promptly answer their calls in the future.

I acknowledge receipt of quarterly reports from March, Stockton, New Hope, San Jose, Watsonville, Grass Valley, Woodbridge, North Butte, San Antonio, Two Rock, Danville, Santa Rosa and Florin Granges, for the quarter ending December 31, 1893, with the necessary cash accompanying.

The sixth degree certificates were forwarded to all those who received that degree at the late session of the State Grange, held in Petaluma. Should any of those who received the degree at that time fail to receive their certificate, please notify this office.

We have received a communication from the office of the lecturer of the National Grange which will be immediately forwarded to all the subordinate granges in the State.

At a meeting of Roseville Grange, held January 6, 1894, the resolutions adopted by Tulare Grange regarding the income tax were indorsed.

Granges which have not sent in report of their election of officers will please do so at their earliest opportunity as I have a letter which will be forwarded them as soon as they report their elections which, no doubt, will be greatly appreciated by the newly-elected masters, and will no doubt greatly assist them in their labors during the coming year.

All communications for California State Grange should be addressed to Don Mills, Santa Rosa.

Grange Elections.

AMERICAN RIVER, No. 172.—Master, L. G. Rodman; Overseer, S. M. Warnock; Lecturer, Geo. Criswell; Steward, H. L. Warnock; Assistant Steward, Geo. Fitzgerald; Chaplain, Mrs. Hall; Treasurer, Miss Cicely Cornell; Secretary, J. D. Cornell; Gate Keeper, C. Halverson; Ceres, Miss Ada Haywood; Pomona, Miss Mary McDonald; Flora, Miss Zera Dunlap; Lady Assistant Steward, Miss Mary Cornell; Trustee, D. W. Taylor. Date of installation, Jan. 13, 1894.

NEW HOPE, No. 301.—Master, F. O. Housken; Overseer, Mrs. P. A. Kise; Lecturer, Geo. H. Barber; Steward, Miss Kate Housken; Assistant Steward, D. O. Jordan; Chaplain, Mrs. Carrie Carleton; Treasurer, Mrs. Katrina Housken; Secretary, W. E. Journeay; Gate Keeper, W. W. Fogg; Ceres, Mrs. Rosa Jory; Pomona, Miss Jessie Thornton; Flora, Mrs. Josie Conner; Lady Assistant Steward, Mrs. Clara B. Thompson.

WATERLOO, No. 295.—Master, C. B. Pearson; Overseer, R. J. Drullard; Lecturer, Carl Salback; Chaplain, T. J. Truscott; Steward, Oscar Sayles; Assistant Steward, Walter Anderson; Treasurer, James Brumby; Secretary, G. R. Drullard; Gate-keeper, Willie Sayles; Pomona, Sister Ida Bunch; Ceres, Sister H. M. Jones; Flora, Sister Emily Fitzgerald; Lady Assistant Steward, Sister Minnie Howland.

At a regular meeting of Woodbridge Grange held Jan. 2, the following officers were duly installed: Master, J. P. Jefferson; Overseer, Mrs. Kate Thompson; Lecturer, Mrs. W. B. White; Steward, N. Vesper Williams; Assistant Steward, Otto Spenker; Chaplain, Miss Jessie Spenker; Treasurer, Ezra Fiske; Secretary, H. C. Shattuck; Gate-keeper, H. M. Woods; Pomona, Mrs. Kate White; Flora, Mrs. J. Emde; Ceres, Mrs. J. P. Jefferson; Lady Assistant Steward, Miss Cassie Ellis; Organist, Miss Etta Williams.

From Watsonville.

TO THE EDITOR:—On January 6th, Watsonville Grange installed officers in due form. They had an all-day session and a bountiful harvest feast. There was a good attendance, and a large number of patrons are ready for the new word. The new master was cordially welcomed to the chair and the past master, E. Z. Roache, was wel-

comed to the past master's ranks. There were several spirited speeches made, and good work for the coming year promised.

S. M. R., Sec'y.

Watsonville, Jan. 8, 1894.

From Waterloo Grange.

TO THE EDITOR:—Waterloo Grange is still holding its own, having just finished initiating a class of three at our last meeting, on December 23d, and of course we had a regular harvest feast, which was well attended, considering the stormy weather we are now having.

The young people of this grange (of which it is mostly composed) have been gradually coming to the front since its organization, and they are now filling all the offices, Ceres excepted.

We have accepted an invitation from Stockton Grange to have our officers installed by the State lecturer at their hall, on the first Saturday in January. G. R. D. Stockton, Dec. 26, 1893.

Breeders' Directory.

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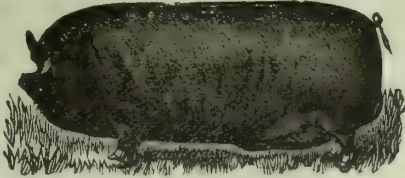
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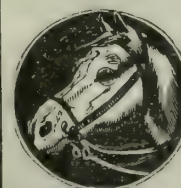
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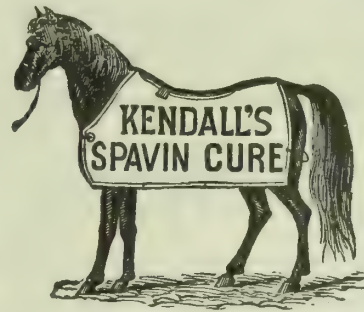
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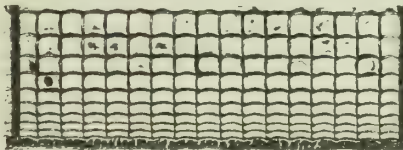
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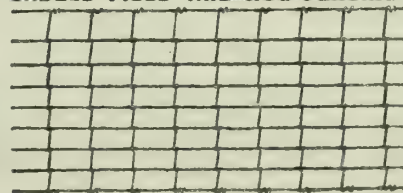
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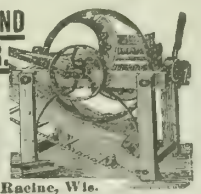
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FRUIT MARKETING.

How Much More Fruit Should the East Take?

For the season ending October 31, 1893, 1955 carloads of fresh deciduous fruits were sent to Chicago over the lines of the Southern Pacific Company. With Chicago's population of 1,099,850 this would give an allotment ratio of 563 inhabitants to each carload. Applying this ratio to the 118 Eastern cities containing a population of over 25,000 each, the following table as to distribution is produced:

CITY.	Rank.	Population, census 1890.	Carloads actually received season of 1893.	Carloads distributable at ratio of season 1893 shipments to Chicago.
New York, N. Y.	1	1,515,301	2,691	857
Chicago, Ill.	2	1,099,850	1,955	1,955
Philadelphia, Pa.	3	1,046,964	1,800	34
Brooklyn, N. Y.	4	806,343	1,435	
St. Louis, Mo.	5	451,770	802	
Boston, Mass.	6	448,477	797	187
Baltimore, Md.	7	434,439	772	
Cincinnati, Ohio	8	296,938	527	
Cleveland, Ohio	9	261,863	454	
Buffalo, N. Y.	10	255,664	430	
New Orleans, La.	11	242,038	424	69
Pittsburg, Pa.	12	238,917	410	
Washington, D. C.	13	230,392	366	
Detroit, Mich.	14	206,378	363	
Milwaukee, Wis.	15	204,468	363	
Newark, N. J.	16	181,890	322	
Minneapolis, Minn.	17	164,738	289	189
Jersey City, N. J.	18	163,008	288	
Louisville, Ky.	19	161,129	286	
Omaha, Neb.	20	140,432	249	171
Rochester, N. Y.	21	137,896	235	
St. Paul, Minn.	22	133,156	236	109
Kansas City, Mo.	23	132,716	235	100
Providence, R. I.	24	132,146	235	
Denver, Colo.	25	106,718	189	180
Indianapolis, Ind.	26	105,436	187	
Albany, N. Y.	27	105,287	187	
Albany, N. Y.	28	94,923	168	
Columbus, Ohio	29	88,150	150	
Syracuse, N. Y.	30	85,143	150	
Worcester, Mass.	31	84,656	150	
Toledo, Ohio	32	81,484	144	
Richmond, Va.	33	81,388	144	
New Haven, Conn.	34	81,295	144	
Pateron, N. J.	35	78,347	139	
Lowell, Mass.	36	77,696	138	
Nashville, Tenn.	37	76,168	137	
Scranton, Pa.	38	75,216	134	
Fall River, Mass.	39	74,398	132	
Cambridge, Mass.	40	70,028	124	
Atlanta, Ga.	41	65,633	116	
Memphis, Tenn.	42	64,497	115	
Wilmington, Del.	43	61,431	109	
Dayton, Ohio	44	61,220	109	
Troy, N. Y.	45	60,958	108	
Grand Rapids, Mich.	46	60,278	107	
Reading, Pa.	47	58,661	104	
Camden, N. J.	48	58,313	104	
Trenton, N. J.	49	57,453	104	
Lynn, Mass.	50	55,727	99	
Lincoln, Neb.	51	55,154	99	
Charleston, S. C.	52	54,955	98	
Hartford, Conn.	53	53,230	95	
St. Joseph, Mo.	54	52,324	93	
Evansville, Ind.	55	50,756	90	
Des Moines, Iowa	56	50,093	89	
Bridgeport, Conn.	57	48,866	88	
Saginaw, Mich.	58	46,822	82	
Salt Lake, Utah	59	44,848	80	
Lawrence, Mass.	60	44,654	79	
Springfield, Mass.	61	44,179	78	
Manchester, N. H.	62	44,126	78	
Utica, N. Y.	63	44,007	78	
Hoboken, N. J.	64	43,643	77	
Savannah, Ga.	65	43,199	77	
Peoria, Ill.	66	41,024	75	
New Bedford, Mass.	67	40,753	72	
Exeter, Pa.	68	40,634	72	
Somerville, Mass.	69	40,182	71	
Harrisburg, Pa.	70	39,385	70	
Kansas City, Kan.	71	38,316	68	
Dallas, Tex.	72	38,067	68	
Sioux City, Iowa	73	37,806	67	
Elizabeth, N. J.	74	37,764	67	
Wilkesbarre, Pa.	75	37,718	67	
San Antonio, Tex.	76	37,673	67	
Covington, Ky.	77	37,317	66	
Portland, Me.	78	36,426	65	
Holyoke, Mass.	79	35,937	63	
Fort Wayne, Ind.	80	35,393	63	
Binghampton, N. Y.	81	35,006	62	
Norfolk, Va.	82	34,371	62	
Wheeling, W. Va.	83	34,522	61	
Augusta, Ga.	84	33,540	59	
Youngstown, Ohio	85	33,220	59	
Duluth, Minn.	86	33,115	59	
Yonkers, N. Y.	87	32,033	57	
Lancaster, Pa.	88	32,011	57	
Springfield, Ohio	89	31,895	57	
Quincy, Ill.	90	31,494	56	
Mobile, Ala.	91	31,076	56	
Topeka, Kan.	92	31,007	56	
Elmira, N. Y.	93	30,895	55	
Salem, Mass.	94	30,801	55	
Long Island City, N. Y.	95	30,506	54	
Altoona, Pa.	96	30,387	53	
Dubuque, Iowa	97	30,311	53	
Terre Haute, Ind.	98	30,217	53	
Chattanooga, Tenn.	99	29,100	52	
Galveston, Tex.	100	29,084	52	
Waterbury, Conn.	101	28,646	51	
Chelsea, Mass.	102	27,909	49	
Bay City, Mich.	103	27,839	49	
Pawtucket, R. I.	104	27,633	49	
Akron, Ohio	105	27,601	49	
Houston, Tex.	106	27,557	48	
Haverhill, Mass.	107	27,412	48	
Brookton, Mass.	108	27,294	48	
Williamport, Pa.	109	27,132	47	
Davenport, Iowa	110	26,872	47	
Canton, Ohio	111	26,189	46	
Birmingham, Ala.	112	26,178	46	
Little Rock, Ark.	113	26,374	46	
Auburn, N. Y.	114	26,358	46	
Taunton, Mass.	115	26,448	45	
Allentown, Pa.	116	25,228	45	
La Crosse, Wis.	117	25,190	45	
Total.		13,439,828	23,863	8,821

That the frequent claim that California fruit is not well distributed at the East has

a good basis, is shown by some studies by W. H. Mills of San Francisco. It is very pertinent to the present co-operative movement among growers, for the figures strikingly illustrate the possibilities of an organized effort to place the shipment of fruits upon a different basis from that which it now occupies.

A consideration of some of the features of the fruit business, which this table makes manifest, will be found of interest. It will be observed that the estimate of the number of carloads of fruit all the cities mentioned should handle is based upon the actual shipments to Chicago.

Unfortunately, the actual shipments of fruit during the season of 1893 are only obtainable as to ten cities, but they will suffice for illustration.

For instance, why should Chicago be a better market for fruit than Kansas City? The only answer to this question is that Chicago is the central point of distribution for fruits.

While this is true, it does not follow that such is the case because Chicago itself consumes all the fruit received or because it is absolutely necessary to ship fruit to that city in order to reach a proper market.

Chicago has simply exploited the fruit business until it is looked upon as the great central market. It has the machinery, so to speak, to control the market, and has become the center of such because shippers know of no other.

But, returning to the first proposition made as to why Chicago should be a better market than Kansas City, it is found upon examination of the table that, on the basis of actual shipments to Chicago, Kansas City should have handled 235 carloads of fruit, whereas it only received 100. A still more striking illustration is given by the figures relative to Philadelphia. With a population only a few thousand less than Chicago, it only received 34 carloads of fruit, whereas, by the same comparison, it should have received 1860. Comparisons of the other cities, for which the actual shipments are given, can be made by the reader at a glance.

When there is but one great central market, as at present, what is the natural result of a congested market—a state of affairs which is unavoidable at times and which cannot be foreseen? The prices are cut so far as the returns to the producers are concerned without being lowered proportionately to the consumer. That which reaches Chicago in a partially unsalable state must be disposed of there because it will not bear reshipment, and all that which is not in a condition for shipment to other points of distribution (after waiting until those points have been discovered) does not increase the consumption because it must be disposed of on the spot and only appeals to a limited number of consumers.

Another feature of the matter is the frequent reshipment of fruit back over roads which it has just traversed in reaching Chicago. The consequent increase in freights is apparent at a glance, and the commission man at Chicago gets his pay also, while both of these large items of expense could have been avoided had the fruit been shipped directly to the point at which it was finally disposed of.

The difficulty in finding a market for fruits outside of Chicago has always been that no concerted effort was made to establish such. Measures must be taken to thoroughly acquaint the public, which it is expected to serve, that shipments are to be made and when they are to be made, so that there can be no possible danger of delay in reaching the consumer.

But the table which Mr. Mills has prepared will suggest many more ideas to the fruit men and others interested than it is possible to enumerate in this article, and the figures are submitted for their consideration.

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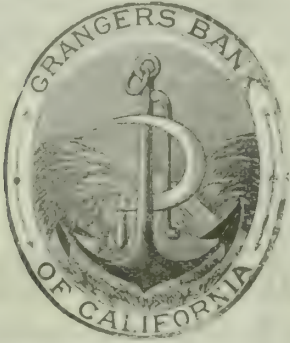
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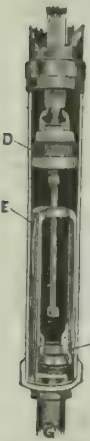


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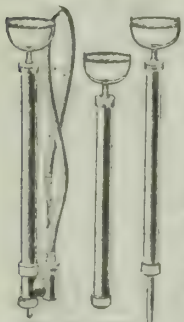
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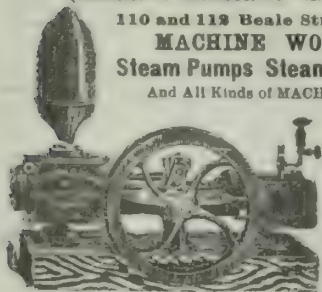
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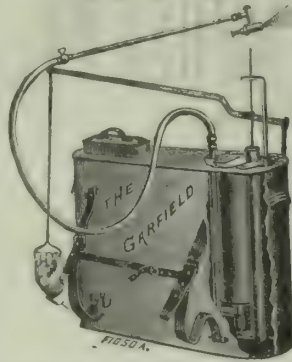
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S. F. MARKET REPORT

Market Review.

WEDNESDAY MORNING, Jan. 10, 1894.

Wheat prices are a little better the past few days, though there is no special activity in the market. The demand for shipping purposes is very light, and whatever improvement there may be in the situation is to be attributed largely to speculative operations in the Call Board. Good to choice shipping Wheat is quotable in the sample market at \$1.05@1.06½ per cwt, with slightly upward tendency. For milling purposes, buyers have to pay \$1.07½@1.10 per cwt. In the Call Board, spot Wheat sold at \$1.13 per cwt, season's storage paid.

Barley.

There is no large array of offerings on 'Change, while an absence of selling pressure is noted. These circumstances tend to keep the market steady and give good tone to values. Trade, however, is slow, and a period of activity is very desirable. We quote: Fed., 73½¢ for fair to good quality, 76½¢ for choice bright; brewing, 82½¢ to 92½¢ per cwt.

Dried Fruits.

Business is rather light, but dealers look for a better inquiry in the near future. Apples are scarce and prices are against buyers. Stocks of Prunes are liberal. We quote as follows: Apples, 4½¢ to 5¢ lb for quartered, 5¢ to 5½¢ for sliced, and 8¢ to 8½¢ for evaporated; Peaches, 5¢ to 6¢ lb for bleached halves, and 4¢ to 5¢ for quarters; bleached Peaches, 5¢ to 7¢; sun-dried peaches, 4¢ to 5¢; Apricots, Moorpark, 11¢ to 12¢; do Royals, 11¢ to 11½¢ for bleached and 6¢ to 7¢ for sun-dried; Prunes, 4½¢ to 4¾¢ lb for the four sizes, and 3¢ to 4¢ for ungraded; Plums, 4½¢ to 5¢ for pitted and 1½¢ to 2¢ for unpitted; Figs, 3¢ to 4¢ for pressed and 1½¢ to 2½¢ for unpressed; White Nectarines, 5¢ to 6¢; Red Nectarines, 4¢ to 5¢ lb.

RAISINS—Prices are weak. Supplies still being large. We quote: London Layers, \$1 to \$1.25; loose Muscates, in boxes, 75¢ to \$1; clusters, \$1.50 to \$1.75; loose Muscates, in sacks, 2½¢ to 3½¢ lb for 3-crown; 2 to 2½¢ for 2-crown; dried Grapes, 1½¢ to 2¢ lb.

General Produce Market.

OATS—Now that the new year is fairly entered, dealers anticipate a more liberal movement than has prevailed for the past month or so. Stocks are moderately liberal and tolerably well concentrated, so that good handling of the market may be expected. The situation generally inclines rather in favor of sellers, especially for stock that is of first-class quality. We quote as follows: Milling, \$1.12½@1.20; Surprise, \$1.20 @1.30; fancy feed, \$1.17½@1.20; good to choice, \$1.10@1.15; poor to fair, 90¢@1.05; Black, 85¢@1.12½; Gray, \$1.02½@1.12½¢ lb.

CORN—The demand is light and slow, but holders are not forcing trade, and quotations are therefore kept in steady position. Quotable at 80¢ to 85¢ cwt for large Yellow, 90¢ to 95¢ for small Yellow, and 90¢ to 92½¢ for White.

CRACKED CORN—Quotable at \$20.50@21.50 per ton.

CORNMEAL—Millers quote feed at \$20 to \$21 per ton; fine kinds for the table, in large and small packages, 2½¢ to 3½¢ per pound.

OILCAKE MEAL—Quotable at \$37.50 per ton from the mill.

SEEDS—We quote: Mustard, brown, \$3@3.25; Yellow, \$3.50@4; Canary, imported, \$4@4.25; do, California, —; Hemp, 3½¢ lb; Rape, 1½¢ @2½; Timothy, 6½¢ per lb; Alfalfa, 8½¢@9¢ per lb; Flax, \$2.25@2.50 per cwt.

CHOPPED FEED—Quotable at \$17.50@18.50 per ton.

MIDDLINGS—Quotable at \$18@21 per ton.

MILLSTUFFS—We quote: Rye Flour, 3½¢; Rye Meal, 3¢; Graham Flour, 3¢; Oatmeal, 4½¢; Oat Groats, 5¢; Cracked Wheat, 3½¢; Buckwheat Flour, 5¢ to 5½¢; Pearl Barley, 4¢ to 4½¢ per lb; Normal Nutrient, \$3 per case of 1 dozen cans; Breakfast Delight, \$3.25 per case of 2 dozen packages.

BRAN—Quotable at \$16@17 per ton.

HAY—The market is fairly well supplied with all descriptions. Wire-bound hay sells at \$11@12 per ton less than rope-bound hay. Following are wholesale city prices for rope-bound Hay: Wheat, \$10 to \$13.50; Wheat and Oat, \$10@12.50; Wild Oat, \$10@12; Alfalfa, \$8@10; Barley, \$9@11; Compressed, \$11@12.50; Stock, \$8@10 per ton.

Wool Trade in 1893.

The annual circular of George Abbott gives the production of wool in California in 1893 as 33,169,375 pounds, against 35,802,930 pounds in 1892. Last year's production was the smallest since 1888. The receipts at San Francisco were as follows: California spring, 19,668,250 pounds; fall, 7,885,125 pounds; from Oregon, 4,184,000 pounds; Nevada and Territories, about 1,000,000 pounds; foreign, 149,000 pounds; shipped from interior, 3,942,000 pounds spring, and 795,000 pounds fall. The shortage in receipts occurs in fall wool, and is largely to be accounted for by growers (chiefly in the lower portion of the State) not shearing their flocks on account of not being able to get advances from the commercial houses, owing to the tightness in the money market; also, the low prices ruling deterred many from shearing. The exports were 22,008,334 pounds, valued at \$2,500,000, of which 21,242,156 pounds went by rail and 766,178 pounds by sea. The stock on hand December 31, 1893, was 5,000,000 pounds.

Auction Sale of Oranges.

The system of disposing of fruit by auction was inaugurated in this city January 8th. Those who are directly interested seemed much pleased with the working of their plan, customers appeared to be satisfied, and brokers who came in to watch the experiment obtained some new ideas.

The auction rooms are at 104 Washington street, convenient to the wharf and near the center of the fruit-commission business. The rooms are large and well lighted and the building new. W. W. Jones acted as auctioneer. There was a crowd on the floor when the sale opened at 1:30, and the bidding began at once and was lively to the end. Only one

carload was disposed of, this consisting of the first of an extensive shipment of oranges from Riverside. The prices realized were about such as had ruled. Fancy navel brought \$.02½; choice, \$.175 to \$.2; fancy seedlings, \$.1.35; choice, \$.1.15 to \$.1.25.

STRAW—Quotable at 45¢ to 55¢ lb bale.

HOPS—No business worth mention. Prices easy. Quotable at 16¢ to 18¢ lb.

RYE—Quotable at \$1@1.02½¢ cwt.

BUCKWHEAT—Quotable at \$1.25@1.40¢ cwt.

GROUND BARLEY—Quotable at \$16.50@17.50 per ton.

POTATOES—Market quiet, with liberal supplies, and prices favoring buyers. We quote: New Potatoes, 2¢ to 3¢ per lb; Sweet, 75¢ to \$1.25 per cwt; Garnet Chiles, 55¢ to 65¢; Early Rose, 45¢ to 55¢; River Burbanks, 35¢ to 47½¢; River Red, 40¢ to 45¢; Salinas Burbanks, 70¢ to 85¢ cwt.

ONIONS—Choice stock sells readily at full figures. Quotable at 90¢ to \$1.20¢ cwt.

DRIED PEAS—We quote: Green, \$1.50@1.65; Blackeye, \$1.60@1.75; Niles, \$1.50@1.60¢ cwt.

BEANS—Trade is not brisk. First-class offerings, however, are firmly held. We quote: Bayos, \$2@2.15; Butter, \$1.75@1.90 for small and \$2@2.25 for large; Pink, \$1.30@1.70; Red, \$1.75@2.10; Lima, \$2.10@2.15; Pea, \$2@2.20; Small White, \$2@2.10; Large White, \$2@2.10¢ cwt.

VEGETABLES—Very little doing in this line, as the market presents no stock of attractive character. We quote as follows: Asparagus, 10¢ to 20¢ lb; Mushrooms, 8¢ to 25¢ lb; Rhubarb, 6¢ to 8¢ lb; Green Peas, 2¢ to 4¢; String Beans, 8¢ to 10¢; Marrowfat Squash, 7¢ to 8¢ lb; Green Peppers, 6¢ to 8¢ lb; Tomatoes, 25¢ to 75¢ lb box; Turnips, 75¢ lb cwt; Beets, 75¢ to \$1 lb sack; Parsnips, \$1.25 lb cwt; Carrots, 4¢ to 5¢; Cabbage, 5¢ to 5.5¢; Garlic, 3¢ to 4¢ lb; Cauliflower, 60¢ to 70¢ lb dozen; Dry Peppers, 5¢ to 7¢ lb; Dry Okra, 15¢ per lb.

FRESH FRUIT—Nothing of interest in the market. Apples are the leading feature, being in large offering, with but moderate demand. We quote prices as follows: Apples, 75¢ to \$1.25 lb box for good to choice, and 25¢ to 65¢ for common to fair; Lady Apples, 30¢ to 60¢ lb box; Persimmons, 40¢ to 60¢ per box; Cranberries, Eastern, \$8@9 per bbl.

GRAPES—Are not worth quoting any longer.

CITRUS FRUIT—A new feature was introduced this week, in the shape of auction sales. The first offering occurred on Monday, being well attended and resulting as good as expected. The catalogue comprised 1000 boxes of Oranges, which were disposed of in parcels to suit buyers. It is the intention to hold three sales each week. We quote: Fair to choice Navel Oranges, \$1.25@2.25 per box; Seedlings, 75¢ to \$1.35; Vacaville Oranges, small boxes, 50¢ to 65¢; Mandarin Oranges, 65¢ to \$1 lb box; Mexican Oranges, \$1.75@2.25 per box; Mexican Limes, 56¢ to 7¢ per box; Lemons, Sicily, \$4@5; California Lemons, \$1@2 for common and \$2.25@3 for good to choice; Bananas, \$1.50 @2.50 per bunch; Hawaiian Pineapples, \$2.50 @3; Mexican Pineapples, \$3@4 per dozen.

NUTS—Peanuts are less plentiful and prices are firmer. We quote as follows: Chestnuts, 8¢ to 10¢ lb; Walnuts, 6½¢ to 7½¢ for hard shell, 8¢ to 8½¢ for soft shell and —¢ to —¢ for paper shell; Chile Walnuts, 8¢ to 9¢; California Almonds, 11¢ to 12¢ for soft shell, 5¢ to 6¢ for hard shell and 12½¢ to 13½¢ for paper shell; Peanuts, 3½¢ to 5¢; Hickory Nuts, 5¢ to 6¢; Filberts, 10¢ to 10½¢; Pecan, 8¢ to 9¢ for rough and 11¢ for polished; Brazil Nuts, 10¢ to 11½¢; Coconuts, \$4@5 per 100.

HONEY—We quote: Comb, 11¢ to 12¢ lb for bright, and 9¢ to 10½¢ for dark to light amber; light amber, extracted, 4½¢ to 5¢; dark, 4½¢ to 4¾¢; water white extracted, 5¢ to 5½¢ lb.

BEESWAX—Quotable at 22¢ to 23¢ lb.

BUTTER—Receipts continue free and prices shape favorably for consumers. We quote as follows: Creamery, 26¢ to 27½¢; fancy dairy, 23¢ to 25¢; good to choice, 21¢ to 22½¢; common grades, 17¢ to 20¢ lb; pickled roll, 10¢ to 20¢; firkin, 17¢ to 19¢; Eastern lardle-packed, 17¢ to 18¢ lb.

CHEESE—The market is not heavily supplied with a strictly choice article, and prices for such product show firm tone. For defective stock the market is slow at low figures. We quote as follows: Choice to fancy new, 11½¢ to 12½¢; fair to good, 9¢ to 10½¢; Eastern, ordinary to fine, 11¢ to 14¢ lb.

EGGS—Prices for ranch Eggs have weakened of late, in consequence of some little pressure to realize, while buyers purchased less freely. Store Eggs now arriving are mostly of good quality, and the ordinary run of ranch Eggs are in consequence difficult to place at materially better prices. Eastern shipments have about stopped for the time being, but there are moderate quantities still here, largely common cold storage stock, and these are offering at lower figures than have been ruling. We quote: California ranch, 25¢ to 26¢; store lots, 22¢ to 24¢; Eastern Eggs, 18¢ to 21¢ per dozen.

POULTRY—The demand for Turkeys is very light, neither live nor dressed being wanted. Broilers are in moderate supply only and quotations are a little stronger. The market generally rules easy, though there is no surplus of consequence. We quote: Live Turkeys—Gobblers, 12¢ to 13¢ lb; Hens, 12¢ to 13¢; dressed Turkeys, 15¢ to 17¢; Roosters, \$4@4.50 for old and \$5@5.50 for young; Fryers, \$4@5; Broilers, \$4@4.50; Hens, \$5@6; Ducks, \$5@6; Geese, \$1.50@2 per pair; Pigeons, \$1@1.50 per doz.

PROVISIONS—We quote as follows: Eastern hams, 12¢ to 12½¢ lb; California hams, 11¢ to 12¢; Bacon, Eastern, extra light, 15½¢ to 17¢; medium, 11¢ to 11½¢; do, light, 12¢; do, light, clear, 13¢ to 13½¢; light, medium, boneless, 12½¢; Pork, extra prime, \$13@13.50; do, prime mess, \$14@15; do, mess, \$21@22; do, clear, \$20@20.50; do, extra clear, \$21 lb bbl; Pigs' Feet, \$12.50 lb bbl; Beef, mess, bbls, \$7.50@8; do, extra mess, bbls, \$8.50@9; do, family, \$9.50@10; extra do, \$11@11.50 lb bbl; do, smoked, 10¢ to 10½¢; Eastern lard, tierces, 7½¢ to 8½¢; do prime steam, 10¢; Eastern pure, 10-lb pails, 11¢; 5-lb pails 11½¢; 3 lb, 11½¢; California, 10-lb tins, 10½¢; do, 5-lb, 11¢; do, kegs, 11½¢ to 12¢; do, 20-lb buckets, 11¢; compound, 8¢ for tierces and 8½¢ for hf bbls.

WOOL—No demand. To-morrow a meeting of growers and dealers will be held in this city, when it is expected measures will be taken to protest against the passage of the Wilson tariff bill, so far as it relates to the schedule on wools and woolens. We quote spring:

California, year's fleece, 7¢ to 9¢; do 6 to 8 months, 7¢ to 8¢; do Football, 10¢ to 11¢; do Northern, 12¢ to 13¢; do extra Humboldt and Mendocino, 11¢ to 13¢; Ne-

vada, choice and light, 12¢ to 14¢; do heavy, 8¢ to 10¢; Oregon, Eastern, choice, 10¢ to 12¢; do Eastern, poor, 7¢ to 9¢; do Valley, 12¢ to 15¢. We quote fall: Free Mountain, 6¢ to 7¢; Northern defective, 5¢ to 7¢; Southern and San Joaquin, 5¢ to 6¢.

HIDES AND SKINS—The circular of W. E. Sumner & Co. says: "The Hides and Leather market for the past season has been depressed at low prices—lower than ever before known. There is a general expectation that the present year will show an improvement both in values and the volume of business. This belief will have some effect on trade, and already there appears to be more activity in Leather. We cannot expect to see any material advance in values for the present, but we hope to see the Hide and Leather business placed on a more substantial basis, with firmer quotations and gradually increasing prices. Dry Hides are active, as shipments are sold on arrival in the East. Wet salted Hides are doing fairly well, the heavy and medium steers being preferred." Quotable as follows:

	Sound.	Culls.
Heavy Steers, 57 lbs up, 7½ lb, 5	@—¢	4 @—¢
Medium Steers, 48 to 56 lbs. 4	@—¢	3 ½ @—¢
Light, 42 to 47 lbs. 3	@3 ½¢	2 ½ @3—¢
Cows, over 50 lbs. 3	@3 ½¢	2 ½ @—¢
Light Cows, 30 to 50 lbs. 3	@—¢	2 ½ @—¢
Stags, 2 ½	@—¢	2 @—¢
Kips, 17 to 30 lbs. 4	@—¢	3 @—¢
Veal Skins, 10 to 17 lbs. 5	@—¢	4 @—¢
Calf Skins, 5 to 10 lbs. 6	@—¢	4 @—¢

Dry Hides, usual selection, 7¢; Dry Kips, 7¢; Calf Skins, 10¢; Cull Hides, Kip and Calf, 4¢; Pelts, Shearing, 10¢ to 20¢ each; do, short, 25¢ to 35¢ each; do, medium, 40¢ to 50¢ each; do, long wool, 50¢ to 75¢ each; Deer Skins, summer, 25¢; do, good medium, 15¢; do, winter, 5¢ per lb; Goat Skins, 25¢ to 40¢ apiece for prime to perfect, 10¢ to 20¢ for damaged, and 5¢ to 10¢ each for Kids.

TALLOW—We quote: Refined, 5¢ to 5½¢; rendered, 4½¢; country Tallow, 4¢ to 4½¢; Grease, 3¢ to 3½¢ per lb.

San Francisco Meat Market.

Beef is steady, while Mutton and Lamb are both higher. Following are the rates for whole carcasses from slaughterers to dealers:

BEEF—First quality, 5½¢ to 6¢; second quality, 4½¢ to 5¢; third quality, 3½¢ to 4¢ lb.

CALVES—Quotable at 4½¢ to 5¢ for large, and 6¢ to 7¢ lb for small.

MUTTON—Quotable at 6¢ to 7¢ lb.

LAMB—Quotable at 7¢ to 8¢ lb.

PORK—Live Hogs, on foot, grain fed, heavy and medium, 4½¢; small Hogs, 5¢; stock Hogs, 4½¢ to 4¾¢; dressed Hogs, 7¢ to 7½¢ lb.

Seeds for 1894.

Everybody interested in field, garden and flower seeds of any description that are absolutely pure and fresh should not fail before purchasing, to send for the new illustrated catalogue of the Kansas Seed House, F. Barteldes & Co., Proprietors, Lawrence, Kan. This "Old Reliable" seed house is one of the very best in the country and deservedly merits the patronage of all who desire first-class seeds at reasonable prices.

The Farmer and the Squirrel.

The ground squirrel is a cunning little beast, with an appetite only equalled by his remarkable propensity to increase his kind. With sagacity and industrious habits, acquired by heredity and necessity, he has managed to build up a reputation that has made him a terror and an outlaw. While the farmer everywhere knows him, and is more or less familiar with his thievish and destructive characteristics, it is probable that comparatively few fully realize the immense amount of loss that he is capable of causing a district or State in the aggregate, say for one year, much less for a series of years.

It is with the view of conveying some approximate notion of the squirrel's great capacity as a destructive agent, while gratifying his inordinate appetite, that the following facts and figures are submitted:

Some practical and observant farmers have said that every squirrel killed was as good as one sack of wheat or its equivalent saved. Whether this be so or not, it is safe and extremely conservative to say that one squirrel or gopher will eat his own weight each month, and probably destroy as much more. Allowing his weight to average one and three-quarters pounds, he will eat and destroy about 40 pounds a year. Now, to give the agricultural districts of California the benefit of 100,000 of these pests actively at work through the greater part of the year, the figures for the aggregate consumption will be found to show up 4,000,000 pounds, a very respectable amount. While 2000 tons of food products lost each year is no small item for producers to consider, this estimate is so modest that those who have given the subject attention will be quite likely to multiply it several times.

These disagreeable facts constantly staring the producers in the face, it is not at all strange that many efforts should have been made to exterminate the evil as far as possible. While most attempts in this direction have proved failures, it is only fair to say that one plan has proved a notable success. This preparation is known far and wide as "Wakelee's Squirrel and Gopher Exterminator." It was the result of scientific and patient study and a full appreciation of the importance of the subject with which it had to deal, and as it has now been on the market for over 15 years, events have proven its complete success and fully justify the immense and yearly increasing sales.

It is estimated that in the 15 years past, more than 10,000 tons of squirrels and gophers have been destroyed by its use alone. Let the curious in figures go into this fact, and by the light of the above hints find out the amount of food it would have required to have made those tons of vermin contented. This preparation is put up in one-pound and five-pound cans, will keep any length of time and is not at all expensive. Directions accompany each can.

Worthless imitations of this valuable preparation are so numerous that the farmer should be extremely careful to obtain the genuine Wakelee Exterminator.

Friend of Mamma (to little girl)—"Lottie, if you drink so much tea you will be an old maid." Lottie—"Oh, I don't believe that at all, Mr. Harold. Mamma drinks tea and she has been married twice."

A GARDEN FOR A DOLLAR.

Any one of the following six collections will be sent free by mail for \$1. Plants all distinctly labeled.

Vegetable Seeds.	Plants.	Plants.
1 20 pk't's fine assortm't	3 2 Chrysanthemums.	6 2 Chrysanthemums.
2 20 pk't's fine assortm't	3 3 Chrysanthemums.	1 1 Tuberoses.
3 20 pk't's fine assortm't	3 3 Carnations.	1 1 Artillery Plant.
4 20 pk't's fine assortm't	3 3 Roses.	5 1 Carnation.
5 20 pk't's fine assortm't	2 2 Geraniums.	1 1 Pelargonium.
6 20 pk't's fine assortm't	1 1 Heliotrope.	3 3 Single Geraniums.
		2 2 Double Geraniums.
		1 1 Begonia, Rex.
		1 1 Rose Geranium.
		3 3 Fuchsias.
		1 1 Begonia.
		1 1 Heliotrope.
		1 1 White Lily.

Selection of varieties in collections must in all cases be left to us. Substitution made if necessary.

SUNSET SEED AND PLANT CO.

Seed Farm and Nurseries, (SHERWOOD HALL NURSERY CO.) 427-9 Sansome St., MENLO PARK. SAN FRANCISCO, CAL.

Write for beautifully illustrated catalogue containing instructions for cultivating. Sent free.

STOCKTON NURSERIES,

ESTABLISHED 1853.

FRUIT TREES. FRUIT TREES.

GRAPE VINES.

Also Fine Stock of Shade and Ornamental Trees, Shrubs, Palms, Roses and Carnations.

PLANTS IN GREAT VARIETY.

Correspondence Solicited.

E. C. CLOWES, STOCKTON, CAL.

PRUNE TREES

FOR SALE—50,000 Trees on Myrobolan Stock.

Imported from one of the first French nurseries. Scions from an orchard near Saratoga. Fruit raised in this celebrated district has taken for us six first-class awards, INCLUDING HIGHEST AWARD, COLUMBIAN EXHIBITION. Apply to

BALFOUR, GUTHRIE & CO., 316 California St., San Francisco, Cal.

Agents for Saratoga Packing Company.

Or to HERBERT BROS., 24 North First St., SAN JOSE.
HARRY POSTLETHWAITE, 18 Fountain St.

AGRICULTURAL NOTES.

CALIFORNIA.

Butte.

As an instance of the value of orange and lemon groves, the *Register* cites the sale of Antone Christensen's orange grove at Thermalito as worthy of comment. He owned 20 acres, of which eight acres were planted to oranges and lemons. He sold the tract for \$8000, or \$400 an acre. As similar land not planted can be bought in the vicinity for \$100 per acre, this would make \$6800 for eight acres of oranges and lemons, or \$850 an acre for trees five and six years old. The varieties are mostly Navels, Mediterranean Sweets and Majolicas. The lemons are the Villa Franca.

Oroville Register: It goes without argument that California farms are too big. This is seen when we compare the number of our farms with those of other States. In 1890 we had 52,849 farms, which is an increase of 16,960 over the number we had in 1880. The rate of increase was 47 per cent. We all know how big our State is, and know too that farms ought to have increased here more than in almost any other State. The facts are, however, against us, for in the decade named the increase in the farms of Alabama was 21,908; of Arkansas, 30,327; of Georgia, 32,445; of Iowa, 16,552; of Kansas, 28,056; of Louisiana, 21,002; of Michigan, 18,336; of Minnesota, 24,465; of Mississippi, 42,546; of Missouri, 22,304; of Nebraska, 50,221; of Texas, 54,009, and of Dakota, 60,334. We must cut up the lands and have more owners ere we see California increase as rapidly as we all desire to see her increase.

Oroville Register: A prominent fruit-grower said to us this week: "The idea that all fruit trees must be inspected and a certificate given is, in my opinion, all nonsense. I don't think that the leading fruit-growers of the county wish to be bothered with this thing. I am satisfied that they will take care of their orchards, and if they do not, then the men who let their fruit trees become diseased will have to have them treated or else destroyed. There is too much supervision, and I don't think men who have been employed know as much as they ought to about fruit pests. They wish to make it appear that all our fruit trees are diseased, and that a hundred different kinds of bugs are ready to devour them. I am satisfied that if one plants a good tree on good soil and gives it the right kind of cultivation, that there will be no danger but what the tree will grow and do well."

Oroville Register: All the old locusts, China trees, pines and other useless trees in town ought to be cut down and destroyed. They serve to cumber the ground, they are neither useful nor ornamental, and they are an eyesore to all who desire to see the better trees planted on sidewalks and in yards. Out down and burn up for firewood every sycamore, cypress, pine and China tree in the town and replace them with lemon, olive, orange or other serviceable trees.

Oroville Mercury: The new olive mill constructed by E. W. Fogg at his Thermalito olive grove is running steadily, crushing great quantities of olives and converting the same into oil. Besides the large crop from his own grove, Mr. Fogg received a consignment of 2000 pounds of olives from Sutter county, shipped by G. W. Harney, who purchased the same from different growers. He expects to ship in about 10,000 pounds more to be converted into oil. The capacity of the mill is about 1500 pounds daily, and the shipment of olives here is worthy of special note, and shows that we are just entering upon a very important industry.

Colusa.

Grimes letter: The grain on the tule lands looks exceedingly well. A good crop is assured. A great many of our farmers are very busy plowing and seeding.

Humboldt.

Eureka Watchman: Next to producing milk for the creamery, raising hogs for the packer offers the quickest, surest and most steady return of any farm output in Humboldt to-day. Those who have good barley or grain lands, and are not favorably located to reach the creamery, will find there is ready money and profit in hogs.

Kern.

Bakersfield Californian: What sort of flour or meal could be made from Egyptian corn? Has anybody tried it here? When that grain was first introduced into southern California 18 years ago a little of it was ground and it was said to make cakes which equaled buckwheat, and to have made a very palatable food. Why not try it here?

Los Angeles.

Pomona Progress: The barley and alfalfa growers say they could not have had weather more favorable to their industries than that of the past few weeks.

Monterey.

Gonzales Tribune: Silvio Francioni, who farms on the Somavia ranch across the river, was making wine last week, and the refuse which remained in the bottom of the tank was given to the hogs. They became so frenzied from intoxication that they broke through the corral and ran helter-skelter in all directions as if possessed by the evil one.

Orange.

Anaheim Gazette: There ought to be from 650 to 700 carloads of oranges in Orange county, but so far the various associations have been able to locate only about 415. Of these Placencia heads the list with 120 carloads, Orange has 100 cars, Tustin 60, Anaheim is credited with only 45, Brookhurst 40 and Villa Park 50. Ana-

heim ought to have 100 cars, and the committee in search of the fruit should make another canvass and see whether they cannot better their return. Now that orders are coming in at a lively rate into the head of the association at Riverside for fruit at satisfactory prices, it is important that every carload of our fruit should be represented in order for us to get the full pro rata of shipments.

Placer.

The Placer *Argus* reports that during last year the Auburn Co-operative Fruit Company shipped an aggregate of 30,888 packages of fruit weighing 770,446 pounds, at an average price of 52 cents per package, or a little over two cents per pound. Eighty-eight different shippers patronized the house. The directorate for 1894 is as follows: E. O. Smith, W. H. Curtis, T. P. Dickson, George Cadman and C. A. Young, all officers last year. The stockholders seem well pleased with the employes of the company the past season, and propose to take hold of fruit-raising with renewed courage and hope the coming year.

San Diego.

The San Jacinto *Register* says: "There's considerable talk by several of our farmers about planting three or four hundred acres to sugar beets this season as a test. We understand that the Southern California Railway Company (Santa Fe system) have made our farmers a special rate to the factory at Chino. The Santa Ana farmers make on an average \$30 to \$50 per acre net on their crop of beets each year."

Santa Barbara.

Santa Maria Times: Dairying is about the most economical industry carried on in our midst. It is a paying business when properly conducted. Nothing is wasted and the land is continually being enriched. It has been scientifically demonstrated that constant and continued dairying will eventually exhaust the butter-producing qualities of the soil, but in this locality the highest point in production has not yet been reached. Then will come cultivated meadows, then mulching, etc., and the decline of dairying is a great way off.

Santa Cruz.

Watsonville Pajaronian: Several of the last shipments of Bellefleur apples made to Eastern points reached their destination in bad condition. The shipments were made late in the season and the apples were badly mellowed when they got East. The Bellefleur decays rapidly, and should be shipped before December to distant points in order to secure its arrival in good condition. The shipments of later varieties have been going through in first-class condition.

Shasta.

The Millville *Times* says Dr. McFadyen, whose farm is near Millville, will set out 5500 Mission olive, 3000 peach and 2500 prune trees planted in between. A large canal to draw its waters from Cow creek will shortly irrigate the farm.

Anderson Valley News: Several carloads of splendid mountain apples have been shipped from here recently to the East. They came from Manton, Tehama county. H. P. Stice has been attending to collecting the fruit.

Sonoma.

Sonoma Republican: Dr. J. M. Parsons has bought the old Habashaw ranch adjoining his homestead in Knight's Valley township. This ranch is an ancient landmark claimed and occupied before California was a State. It is situated high up on the western spur of St. Helena mountain. He proposes to plant it to apples and olives.

Sonoma Index-Tribune: On New Year's day ripe strawberries, lemons and oranges were picked from vines and trees on the residence grounds of the editor of this paper in this place. The orange and lemon trees were planted four years ago. A number of the former are over seven feet high and all bore fruit this season. The trees, which are of the Washington Navel variety, have never been protected from frost, but have taken their chances with other fruit trees in the open air. Out of 14 trees planted four years ago, every one are alive and in a flourishing condition.

Sonoma Tribune: The summary of the work of the must factory for the season is as follows: Total output of must, 1564 barrels of 50 gallons each; consumption of grapes, 3,000 tons; manufacture of brandy, 10,500 gallons. The gauging at the must factory will be finished this week and then the concern will close down until spring when the production of jellies will be resumed. There would have been a heavier consumption of grapes during the initial season's run, had it not been for the many stops made to repair and regulate the new machinery. Next year the concern will be prepared to manufacture fully 50 per cent more must than it did this year consequently it will consume no less than 4500 tons.

At a meeting of the Horticultural Society last week, says the *Petaluma Courier*, Alex. Craw, State Quarantine Officer, said, among other things: "The pernicious scale is rapidly becoming a thing of the past. It is almost extinct in the San Jose districts. Resin wash and the usual wash of lime, salt and sulphur are very beneficial. The brown-necked scymnus (ladybird) is the most beneficial parasitic destroyer of the scale. I don't advise spraying the trees when ladybirds are numerous, but rather the protection of the parasites." Mr. Craw said that his experiments and those of Mr. Lelong have not shown the disease known as "black knot" to be contagious, although many persons regard it as a very dangerous enemy to nearly all deciduous trees. It is generally found on peach roots. Mr. Craw said he thought the disease was so bad that all nursery stock affected with it should be destroyed. He

pointed out the distinction between the slight swelling that often exists on nursery stock, in consequence of imperfect grafting, and the enlargement known as "root knot." He thought that commissioners were justified in quarantining such nursery stock as is actually affected by root knot, believing such trees should not be planted.

Petaluma Courier: John Burnham of Yulupa valley, a well-known wine-maker, declares his intention of giving up the wine business and turning his attention to fruits and poultry.

Tulare.

J. E. Felton's raisin-drier at Grangeville was destroyed by fire recently. It contained 2000 trays of clusters, and the loss is about \$700 upon which there was no insurance.

Tulare Citizen: There has been considerable talk about a meat-packing house in Tulare of late, but the enterprising company of Burnett & Mowry have already got there. They have employed an experienced band from the East, and have now on hand a nice quantity of home-cured bacon, hams and shoulders. They say that with the process they employ they are satisfied they can make the curing of meats a success here.

Yolo.

Woodland Mail: Heavy white frosts have been a feature of the recent weather. No damage to flowers has been reported, and the fruit men say that the "nip" has been of great benefit to them. The "oldest inhabitant" declares that it has been years and years since the mercury in Woodland thermometers has sunk so low, and reports from many points in California, including San Francisco, are of similar import.

Horticultural Commissioner Howard informed a *Democrat* representative that the San Jose scale, which has infected the fruit trees of Yolo county to a limited extent, is rapidly disappearing. He says that he has lately discovered an insect, the name of which he could not at the time recall, which is a deadly enemy to the scale. He advises fruit-growers to examine their fruit trees before spraying them, and, if the insect is discovered, to let the trees alone. The insect will do the work more effectually than it can be done by spraying.

The Grangers' Bank.

Twentieth Annual Meeting of Its Stock-holders—Statement of Resources—Resolutions of Respect for the late J. W. Mitchell.

The twentieth annual meeting of the stockholders of the Grangers' Bank of California was held on January 9th, about 9000 shares of the capital stock being represented. A dividend of 6 per cent was declared amounting to \$57,354, due and payable immediately, and the remainder of the earnings carried to credit of Reserve Fund.

The following Board of Directors was elected for the ensuing year, consisting of A. D. Logan, Uriah Wood, J. H. Gardiner, Dr. W. L. Dickenson, Seneca Ewer, D. N. Hershey, H. M. LaRue; Thos. McConnell, H. J. Lewelling, G. S. Berry, I. C. Steele.

A. D. Logan was re-elected president, I. C. Steele vice-president, A. Montpelier cashier and manager, and F. McMullen secretary.

The capital stock of the bank is now paid up in full, \$1,000,000, and the bank has paid to its stockholders \$832,000 in dividends.

The condition of the bank at the close of business hours December 30, 1893, was as follows:

RESOURCES.	
Loans and discounts.....	\$2,063,741.40
Real estate and grain warehouses.....	178,665.90
Office Furniture and safes.....	5,000.00
Cash on hand.....	123,785.22
Total resources.....	\$2,371,192.52
LIABILITIES.	
Capital paid up.....	\$1,000,000.00
Reserve Fund.....	72,272.31
Dividend No. 19.....	57,354.00
Due depositors.....	486,542.25
Due banks and bankers (on time).....	755,023.96
Total liabilities.....	\$2,371,192.52

CAREER OF THE BANK REVIEWED.

The following preamble and resolutions were presented by Amos Adams and ordered published by a vote of stockholders of the bank:

WHEREAS, On this the 20th annual meeting of the stockholders of the Grangers' Bank, it seems appropriate to turn back the pages of time and look for a moment at the early struggles that led up to the incorporation of the Grangers' Bank and the success it has attained.

It will be recollected by most of those now present that in the years 1873 and 1874 the grain-growers of California were confronted with one of the most gigantic monopolies that ever existed on the Pacific Coast.

It was charged that Friedlander, who was popularly known as the "Grain King," had made a corner on grain bags and had run them up to 16 and 17 cents; had control of most of the tonnage in and to come into port; had locked up the money in many banks by leaving the money in their vaults as security, and paying two, three or four months' interest thereon; had manipulated the price of wheat to what was then thought to be starvation prices,

and the farmers looked in vain for relief outside of some permanent organization or institution formed by and for their own benefit.

Local meetings of farmers had been held throughout the State, but with unsatisfactory results. Finally a mass meeting was held in San Francisco, early in the year 1874, and, after great deliberation, and not without some misgivings, the convention resolved to organize a corporation, to be known as the "Grangers' Bank," with the avowed purpose of "making loans on produce, merchandise and real estate; to buy and sell exchange; to make collections, and to do a general discount and deposit business, and such other business as may properly belong to a banking company."

With this end in view money came pouring in in small and large rivulets, but mostly in small rivulets. Just imagine, Mr. President, with what commendable pride the sides of the vault bulged out when the magnificent sum of \$25,000 was placed therein—the doors of the bank thrown wide open, with an invitation to the public to come in and do a general banking business.

Directors had been chosen from among the ablest men of the convention, who discharged their duties faithfully and well, but to-day only one of the first Board of Directors is now in that position—most of the others have passed over the silent river to the great beyond.

They in turn have been succeeded by abler men—men more familiar with banking business and better skilled in the financial problems of the day, and now the Grangers' Bank has a Board of Directors that would do credit to any bank in the country.

The first Board of Directors soon learned that to incorporate for banking purposes was not all that was necessary to be done to conduct a banking business successfully; they must also have a competent business manager, who must be honest, qualified, and, as far as possible, have the elements of success within himself.

And now, looking back over the period of twenty years, with the same man opening the doors of the vault in the morning and closing them at night with the regularity of clockwork, we think the Directors chose wisely and well when they installed Mr. Albert Montpelier as cashier and manager. Mr. Montpelier has filled this responsible position with ability, fidelity and trustworthiness that has earned for the Grangers' Bank a reputation throughout the State for fair dealing second to no other bank; therefore,

Resolved, That the thanks of the stockholders of the Grangers' Bank be and the same are hereby tendered to Mr. Montpelier for his able, efficient and successful management; that to his business tact and talent in guiding the bank through the shoals and quicksands of the recent and greatest financial crisis of our State, he deserves our warmest commendation.

Resolved, That the thanks of the stockholders are especially tendered to the Directors of the bank for the cautious and conservative course heretofore pursued. Without knowing it as a fact, the stockholders affirm it as their opinion that the responsible duties of the manager have been lessened and that success has been more readily attained by the accumulated knowledge focused and advice imparted at the Directors' bi-monthly meetings. Coming as the Directors do from different localities of the State, they are able to give the manager reliable and valuable information, not only on the bank's business, but also of the condition of the crops and the crop outlook, on which the business of the bank so largely depends.

Resolved, That the thanks of the stockholders are also tendered to Mr. McMullen, Mr. Fair and Mr. Wittland for the promptness and ability with which they have discharged the duties devolving on each.

RESOLUTIONS OF RESPECT.

The following in respect to J. W. Mitchell were moved by I. C. Steele, seconded by Seneca Ewer and adopted by unanimous vote:

WHEREAS, Another honored member of the Board of Directors of the Grangers' Bank has passed on to the higher life, leaving a record for business ability and integrity alike creditable to him and to the bank; and

Whereas, We learned to respect his manly qualities and to prize his genial ways and reliable friendship by long association with him; therefore

Resolved, That while we submissively bow to the inevitable in the taking away of our associate and friend, John W. Mitchell, we miss him and cherish his memory among the pleasant and sacred recollections of the past.

Resolved, That the sudden removal of such a man from our board leaves a vacancy and shadow that will be deeply realized by all members of the board and its friends, and will prove a grievous loss to this State and the public.

Resolved, That this preamble and these resolutions be spread upon the minutes of this board and a copy sent to the *RURAL PRESS* and the relatives of our departed friend.

HEALD'S

BUSINESS COLLEGE.

24 POST STREET.....SAN FRANCISCO.

FOR SEVENTY-FIVE DOLLARS

This College instructs in Shorthand, Type-Writing, Book-keeping, Telegraphy, Penmanship, Drawing, all the English branches, and everything pertaining to business, for full six months. We have sixteen teachers and give individual instruction to all our pupils. Our school has its graduates in every part of the State. SEND FOR CIRCULAR. E. P. HEALD, Pres. C. S. HALEY, Sec.

Use **ST. JACOBS OIL**
FOR
PAINS
RHEUMATIC,
NEURALGIC,
SCIATIC,
And all the World Knows the CURE is SURE.

The Harvest Moon.

The time of moonrise on any day is on the average about 51 minutes later than it was on the preceding day. This retardation is, however, by no means constant in amount, being at times very much less than the average and at times very much greater. A very marked diminution in the time of retardation occurs about the time of the full moon which falls in September, says the *Popular Science News*.

This moon is called the harvest moon. The same phenomenon in a less degree occurs at the time of the following full moon, which is known as the hunter's moon. The time of retardation during the harvest moon is less than half an hour in our latitudes, instead of its average value of nearly an hour, and for several successive nights the moon seems to rise at nearly the same time.

Briefly stated, the cause of the phenomena is this: At the time of the rising of the harvest moon the apparent path of the moon among the stars is much less inclined to the horizon than it is at other times, and the ordinary day's motion of the moon along this path makes an unusually small change of position of the moon with reference to its distance from the horizon.

A more detailed explanation may make the matter a little more easily understood. In addition to the ordinary apparent daily motion which the moon has in common with all other heavenly bodies, it has another motion by which it completes the circuit of the heavens relatively to the sun once a month, and the direction of this motion is generally not parallel with the direction of the diurnal motion, it being generally northward or southward as well as eastward.

Any one may see this motion by an hour's watching of the relative positions of the moon and a star near it. The diurnal motion is always on a line at right angles to a line drawn from the body of the celestial pole, the point in the heavens approximately indicated by the pole star. It is always perfectly uniform about the pole as a center, and it is this which we take as our ordinary measurement of time.

Now, consider the position of the moon and the sun at the time of full moon. The moon rises just as the sun sets. On the next evening at sunset the moon will still be below the horizon, because it has moved westward among the stars relatively to the sun, and it will not rise until the diurnal motion of the heavens brings it above the horizon. If the moon's motion were uniform and always along the line of ordinary diurnal motion, this retardation of the time of rising would always be the same, and would, as stated at the outset, be 51 minutes per day.

But at the time of harvest moon the direction of motion of the moon among the stars is considerably northward as well as eastward, and at the time of moonrise this line makes a comparatively small angle with the horizon, very much less than it does at other times of full moon during the year. Therefore, at sunset on the day after the full, the moon having moved along a line which is inclined to the horizon at a much smaller angle than usual, its distance below the horizon will be less than the average, and hence a smaller amount of diurnal motion will bring it into view—that is, the retardation of time of rising is less than it is at other times. This condition continues for several days.

Several other things, notably the inclination of the moon's orbit to that of the earth, and the varying rate of motion in the orbit due to variation of distance from the earth, tend to change the amount of daily retardation, but they do not depend upon the time of the year, and they sometimes intensify and sometimes diminish the peculiar phenomena of the harvest moon. Latitude has a strong effect, and in Northern Europe the phenomenon is a much more noticeable one than it is in the United States. In fact, if one goes far enough north, the harvest moon may rise even earlier on any night than it did on the night preceding.

\$100 Reward, \$100.

The reader of this paper will be pleased to learn that there is at least one dreaded disease that science has been able to cure in all its stages, and that is Catarrh. Hall's Catarrh Cure is the only positive cure known to the medical fraternity. Catarrh being a constitutional disease, requires a constitutional treatment. Hall's Catarrh Cure is taken internally, acting directly on the blood and mucous surfaces of the system, thereby destroying the foundation of the disease, and giving the patient strength by building up the constitution and assisting nature in doing its work. The proprietors have so much faith in its curative powers, that they offer One Hundred Dollars for any case that it fails to cure. Send for list of testimonials. Address

F. J. CHENEY & CO., Toledo, O.

Sold by Druggists, 75c.

List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR THE WEEK ENDING DEC. 26, 1893.

511,323.—SHAVING MUG—J. M. Blasi, S. F.
511,398.—CAR LAMP—E. Boesch, S. F.
511,410.—STAMP CANCELLER—J. F. Cowdery, S. F.
511,592.—KEYHOLE GUARD—O. J. Davidson, Kingsburg, Cal.
511,518.—GAS BURNER—B. F. Field, Los Angeles, Cal.
511,605.—BRIDGE—G. W. Frederick, Los Angeles, Cal.
511,426.—PUMP ENGINE—L. Holben, Sacramento, Cal.
511,699.—HORSE COLLAR—L. Ingels, Seattle, Wash.
511,534.—BUTTONER—Latham & Williams, Alhambra, Cal.
511,349.—PLANE—H. Merz, Polasky, Cal.
511,447.—ELEVATOR—W. B. Morris, Seattle, Wash.
511,741.—CABINET—Mary A. Owen, Portland, Or.
511,372.—PRESERVING PILES—R. Sudden, Ventura, Cal.
511,481.—BUTTONER—F. E. Williams, Alhambra, Cal.
511,492.—BUTTON FASTENER—F. E. Williams, Alhambra, Cal.

NOTE.—Copies of U. S. and Foreign patents furnished by Dewey & Co. in the shortest time possible (by mail for telegraphic order). American and Foreign patents obtained, and general patent business for Pacific Coast inventors transacted with perfect security, at reasonable rates, and in the shortest possible time.

SPECIAL ANNOUNCEMENT.

We have made arrangements with Dr. B. J. Kendall Co., publishers of "A Treatise on the Horse and his Diseases," which will enable all our subscribers to obtain a copy of that valuable work free by sending their address (enclosing a two-cent stamp for mailing same) to DR. B. J. KENDALL CO., ENOSBURGH FALLS, VT. This book is now recognized as standard authority upon all diseases of the horse, as its phenomenal sale attests, over four million copies having been sold in the past ten years, a sale never before reached by any publication in the same period of time. We feel confident that our patrons will appreciate the work, and be glad to avail themselves of this opportunity of obtaining a valuable book.

It is necessary that you mention this paper in sending for the "Treatise." This offer will remain open for only a short time.

—The Siskiyou Mill & Lumber Co., says the *Dunsmuir News*, has the biggest sugar-pine board ever cut in the county, which they are about to ship to the Midwinter Fair for exhibition. The board is about 1½ inches thick, 54 inches wide and 16 feet long. There is not a knot or flaw of any kind in it. It was cut by a band-saw and is pure No. 1 sugar pine.

Seeds, Plants, Etc.

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"Gold Dust Cling," says H. E. Van Deman, ex-U. S. Pomologist, "is a yellow cling of medium size, round and regular in shape, and very firm in flesh. The color is very attractive, being dark yellow with a very red cheek. It bears heavily and carries to market with very little damage. Coming as it does before the main peach crop is gathered, it is about the first yellow cling of any special value and therefore finds a ready sale. Each year it gains in favor, but as it is a variety but recently originated the public know little of it. It is a very profitable variety." Price \$1 each, \$5 per half dozen. For sale by SACRAMENTO RIVER NURSERY COMPANY, Growers of HIGH-GRADE Fruit Trees, Walnut Grove, Sacramento County, California. Our Specialties—Genuine Tragedy Prunes, Olyman and Japan Plums on true Myrobalan whole root seedlings—we use no piece roots nor cuttings; price 15 cents each; Sacramento River Bartlett and Peaches—price 10 cents each. Large quantities at lower rates. WE GUARANTEE OUR TREES TRUE TO NAME.

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On Gold Dust Clings, 33½% off on Plums and Prunes, and 25% off on Pears and Peaches. In order to find out who reads the above advertisement we offer this discount for the next thirty days. SACRAMENTO RIVER NURSERY CO.

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Marblehead, Mass.

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To quote the Pacific Rural Press of August 5th:

"The MAMMOTH is extra large, exceeding, we believe, even the Moorpark. It is of very symmetrical form, high color, and seems to ripen fully and evenly, which is, of course, a very important point. It is very rich and juicy when fully ripe, and it has exceptionally good keeping and shipping qualities. No doubt all apricot growers will desire to try this promising variety. If it does everywhere as it does in Ventura, it will be a great acquisition to the apricot list."

NIAGARA FALLS, August 3, 1893.

N. B. Smith, Dear Sir:—The "cots" arrived in Chicago in first rate condition on the 27th, six days after they were shipped, and they were beauties. Some of them kept in good condition until August 1st and 2d. They are the best keepers I ever saw and I shall try them at Yuma. Yours truly, H. W. BLAISDEL.

Mr. Blaisdel has Large Interests at Yuma. Six Days in a Hot Express Car, and Kept Six Days Thereafter, is a Pretty Good Test of Their Shipping and Keeping Qualities.

N. B. Smith,

VENTURA,

Ventura County.....California. CLUSTER OF SPARK'S "MAMMOTH" APRICOT, GROWN BY N. B. SMITH, VENTURA, VENTURA CO., CAL



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P. M. Bartlett Movt. In Solid 14 K Gold Htg. Case, \$10.

14 K Filled Htg. Case, \$25; 4 oz. Coin Silver Htg. Case, \$20. Appleton, Tracy & Co. Movt., \$10 extra. "Crescent Street Movt., \$15 extra." All Watches stem wind and set. 14 K filled cases guaranteed for 21 years. FINE WATCH REPAIRING. Diamonds, Watches and Fine Jewels sent C. O. D. with privilege of examination, on receipt of \$1 to guarantee charge, or sent express or postpaid if cash accompanies the order. Correspondence solicited. Particular attention paid to mail orders. When you visit the Midwinter Exposition call and inspect my stock. AGENTS WANTED JOHN H. DRUMGOLD, Manufacturing Jeweler, Watches and Diamonds, Room 113, Phelan Building, San Francisco.

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EVERYTHING IN THE SEED LINE. Our Specialties: Onion Seed and Sets; Alfalfa, Kaffir and Jerusalem Corn; Tree Seeds for nurseries and timber claims. Have also a limited supply of Laythrus Silvestris (Flat Pea) the new Forage plant. New Catalogue mailed free on application. F. W. BARTELDES & CO., Lawrence, Kan.

Send for Price Lists OF GUNS And all Articles used by Hunters and Anglers.



GUNS SENT ON TRIAL.

OLD GUNS TAKEN IN EXCHANGE.

GEO. W. SHREVE, 525 KEARNY STREET, SAN FRANCISCO



Vol. XLVII. No. 3.

SAN FRANCISCO, SATURDAY, JANUARY 20, 1894.

TWENTY-FOURTH YEAR.
Office, 230 Market Street.



MIDWINTER FAIR—THE GRAND ENTRANCE OF THE MANUFACTURES AND LIBERAL ARTS BUILDING.

The Greatest Building at the Midwinter Fair.

The Midwinter Fair is the greatest sensation in the public mind of California at this time. It is progressing toward completion as rapidly as sou'-westers and downpours will permit, and in spite of these drawbacks the development of the enterprise is surprisingly fast. The management has declared that the great opening shall take place on Saturday, January 27th and the Governor has declared a

public holiday on that date. By that time the heavy weather of the winter should be over and subsequent rains, though generous as producing interests require, may not be troublesome.

To keep our readers informed of the chief features of the display we introduce on this page a view of the main entrance to the largest building on the grounds—that devoted to manufactures and liberal arts. It is of Moorish design, 450 feet long and 250 feet wide, its height being

55 feet, and it has an annex 75 feet in width, nearly the whole length of the structure. It has all the picturesqueness that is so readily obtainable in this style of architecture, and with the collonade which surrounds it, and its towers, will introduce the various forms so popular in the mission buildings. Roof gardens will be found in the loggias of the towers. The roof will be covered with curled metal tiles, and a skylight, and the building will be lighted from the top as well as from the sides.

PACIFIC RURAL PRESS.

Office, 220 Market St.: Elevator, 12 Front St., San Francisco, Cal.

ANNUAL SUBSCRIPTION RATE THREE DOLLARS a year. While this notice appears, all subscribers paying \$3 in advance will receive 15 months (one year and a half weeks) credit. For \$2 in advance, 10 months. For \$1 in advance, five months. Trial subscriptions for twelve weeks, paid in advance, each 50 cents.

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Registered at S. F. Post Office as second-class mail matter.

Our latest forms go to press Wednesday evening.

ANY subscriber sending an inquiry on any subject to the RURAL PRESS, with a postage stamp, will receive a reply, either through the columns of the paper or by personal letter. The answer will be given as promptly as practicable.

ALFRED HOLMAN.....Editor
J. F. HALLORAN.....General Manager
E. J. WICKSON.....Special Contributor

San Francisco, January 20, 1894.

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The Week.

The rain is assuming resolute and persistent demeanor. For wide reach and weight of downfall, it has assumed most respectable proportions already; and as we write on Wednesday, we seem to be but in the midst of it. This last rain comes too soon for some interior farmers, especially in the Sacramento valley, who have been waiting for a chance to get in some seed; and in parts already soaked to bedrock, this last donation seems like a little overproduction on the part of the weather-makers. Though this may cause inconvenience and delay, it should not be forgotten that it is about time the arid regions of the west and south San Joaquin had a flush year, and they always secure it at the cost of a surplus to the better watered parts of the interior. It will do the State lots of good to have an exceptionally productive year as an offset to short grass which seems to rule in all public affairs. These considerations may bring comfort even while the horses are eating their heads off in the stalls and enforced idleness invites depression. When one stops to think of it, there is nothing more industrially dangerous than a California winter which is all sunshine, and we are fortunately very far from that this year.

THE Nevada hay-growers cannot spare much more hay for this State. The Reno Journal says that about one-half the hay crop of the Truckee Meadows has been fed or baled and shipped out of the country, and that about one-fifth of the total crop remains unsold. A number of the largest producers feed all or nearly all their hay to their own stock and have none for sale. The shipments to California average about 250 tons a month, and there are over 5000 head of cattle and 20,000 sheep now being fed on hay in this vicinity. Besides this there are about 2000 dairy cows being fed, so that hay disappears rapidly, and there will not be much, if any, surplus in the spring. This may be important to our readers who may be holding hay for late sales.

A Question of Cows.

It is wonderful how close they are pursuing their tests of cows at the experiment stations which are largely run by cow power. It is only a few years since it was held that if a dairyman would only use the scales and keep a record of the milk yield of each of his cows for a year he would find that some of the animals he supposed were the best would really be unprofitable to keep. This advice was followed by some of our more progressive dairymen, and they were indeed surprised at how small an aggregate yearly weight of milk was given them. We remember one of our dairy friends started out with the scales, determined that any cow which did not give him 5000 pounds of milk a year would have to go to the butcher. He was forced to lower his standard after awhile, because he found out that at the dead line he fixed he was running a meat ranch and not a dairy ranch at all. However, the experiment did lots of good, because it sent away a part of the herd which was wretchedly poor as milkers.

More recently dairymen have found out that gross weight of milk is not a good criterion of a cow's dairy value, and the Babcock test, which enables the dairyman easily to determine the actual butter contents of the milk, must be used in connection with the weight of the milk to determine the actual producing value of each cow. Progressive dairymen now are content with nothing short of this accurate knowledge of what a cow is doing with her time and fodder.

The next point made in testing cows consisted in ascertaining the value of the food consumed by the cow, and this deducted from the value of the butter in her milk gives her net dairy value. This seems to cover all the points in question and tells the dairymen at what cost he produces a certain value of butter fat. This inquiry has been pursued for some time at several of the Eastern experiment stations, and the results are well illustrated by a bulletin from the Pennsylvania station which we have in hand at this moment. That there is a wide difference in the net profit returned by two animals producing practically the same quantity of butter per year is clearly shown in the table giving the records of the year. For example, the records show that last year

Marguerite produced.....6,512 lbs. milk and 296 lbs. butter.
Ramona produced.....5,459 lbs. milk and 279 lbs. butter.

By the customary standard of comparison, Marguerite would have been regarded as the superior animal, barring difference in breeding, etc., and would have commanded the higher price. Referring to the table showing the daily net profit returned by these animals, we find a remarkable difference not indicated or suggested by the butter and milk records, for Ramona's feed cost far less than Marguerite's, consequently Ramona yielded the greater net profit every day; and so great was this difference in Ramona's favor that, assuming that they remain fresh for 300 days and taking the average net profit per day, we have a yearly profit for

Marguerite of.....\$31.50
Ramona of.....61.50

On this basis, at the end of six years, which, for this case, we assume to be the productive life of a cow, and disregarding the offspring, they would have made a total net return for

Marguerite of.....\$189.00
Ramona of.....369.00

This means that Marguerite would have yielded ten per cent compound interest on a purchase price of \$106, while Ramona would have paid the same dividend on a purchase price of \$208.

But these two cows, withal their great difference, were both good cows if compared with another named Bianca—a cow which also gave 5556 pounds of milk and 242 pounds of butter, but consumed so much food in doing it that her annual net profit was only \$14.70.

Of course these are extreme cases, but they all came in a herd of ten cows taken for the experiment, and may occur in any other ten cows. When the dairyman studies these things over carefully it ought to make him shiver to think how unprofitable some of his animals may be, and he ought not to delay long in finding out which the poor ones are.

Grange Convention at the Midwinter Fair.

The Executive Committee of the State Grange had an interview with the managers of the Midwinter Fair on Wednesday and secured the Exposition hall for a Grange Convention on the 13th or 14th of April next. It is hoped to secure the presence of the lecturer of the National Grange, and to make the occasion an attractive and notable one. The different subordinate granges of the State will be called upon to contribute toward the general entertainment during the Convention.

The Citric Acid Industry.

There is constant inquiry as to the feasibility of utilizing our waste lemon product for the manufacture of citric acid. The output of citric acid is known to be an important matter to the citrus fruit region of the Mediterranean. Could it not be a satisfactory source of income to California? This question, though it has been asked for years, has never been satisfactorily answered because there are certain things about the answer which can only be demonstrated by the enlistment of capital, the output of a product and the marketing of it. Hitherto the inquirers have either been unable or indisposed to proceed to investment. This winter, however, the interest seems to have been aroused again, and frequent appeals have been addressed to Prof. Hilgard for information concerning European methods and appliances. Such information has been given, and perhaps we shall hear of practical procedure in the line of manufacturing.

There is one thing which should be brought to the attention of those who are figuring on this proposition, and that is a caution given in the latest published volume of the consular reports of the Department of State at Washington. Wallace S. Jones, U. S. Consul at Rome, writes of a new process of making citric acid without the use of citrus fruits. Of course, due allowance must be made for roseate flush, which is apt to color announcements of new processes, but the following is the statement of Consul Jones, as published by the State Department:

"Dr. Carl Wehmer, a Hanoverian botanist, is said to have recently discovered that sugar solutions exposed to the action of certain microscopic fungi, the spores of which float in the atmosphere, become transformed into citric acid precisely identical with that extracted from the lemon.

"The first experiments made to prepare artificially in this way citric acid are said to have given excellent results, 11 kilograms of sugar producing 6 kilograms of crystallized citric acid.

"The new process has already been patented in several countries, including Italy; and, at the factory of Thann, the distinguished chemist Scheuren-Kestner is now carrying on experiments with a view to applying the process on a large scale. Everything tends to show that this new process will assume great development, and will make it possible to supply the trade with citric acid at a much lower cost than that actually ruling, and will in all probability supersede in a few years the present method of producing lemon juice and citrate of lime."

It is plainly hinted that the Italian industry of producing lime juice for calico-printing and crystallized citric acid is placed in jeopardy by this new process. It seems that this juice-product in Messina alone reaches a value of nearly three-quarters of a million a year. We cannot see that this business will necessarily be routed, for it has not been shown that all the uses of the natural juice can be met by the microbe-made citric acid. Still, it will be well enough to have these statements in mind when contemplating investment in citric-acid lines in this country.

THE northern citrus fair will be in all its glory at the Midwinter Fair next week. The fine building that has been erected by several counties of the central and upper portions of the State will be the first of the exposition structures to be thrown open to the public with its exhibits in completed arrangement. These will comprise a citrus fair in the fullness of ornamental design and golden material which the name implies. On January 20th the opening exercises will be held. Captain. T. B. Hall of Sacramento will preside at the exercises and deliver the opening address. Director-General de Young will speak for the exposition management, and Senator De Long of Marin county will represent the State Board of Horticulture. The oration will be delivered by Colonel John P. Irish, the well-known citric orator whose phrases have the sweetness of the orange and the sharpness of the lemon symmetrically compounded. The display (not the oration) will doubtless be maintained until after the general opening of the Fair.

It seems there is a decrease in the amount of visible wheat, which is encouraging to those who will use this rain to roll up an old-fashioned California surplus. The Liverpool Corn Trade News, in a recent issue, estimates the quantity of wheat and flour afloat for Europe on Dec. 1, 1893, as 4,680,000 quarters, and stocks at same date in importing countries as 6,000,000 quarters, making together 10,680,000 quarters; of which there would be required 3,730,000 quarters to cover above deficiency, and thus reducing the quantity afloat and in store to 6,950,000 quarters on Feb. 28. The reduction in stocks afloat and in store in three months is estimated at 29,840,000 bushels.

From an Independent Standpoint.

The Wilson tariff bill is now in full career in the House of Representatives, and all other public interests—even the everlasting Hawaiian matter—are subordinated by it. Last week was devoted to set speeches; and though all the bigger guns took a shot at the measure, nothing new or notable was said on either side. The speech which has attracted most attention was by Bourke Cochran of New York, the bright oratorical star of Tammany Hall, but it was chiefly sound and fury, and left no impression save that Mr. Cochran had made a "great effort." He ran over in admirable style the familiar arguments for tariff reform, but said nothing that has not been said with equal clearness a hundred times before. It was the same with Mr. Reed on the Protection side. He spoke with great force; but he said nothing not already familiar to everybody. The fact that these commonplace speeches are being lauded to the skies by the partisan press is significant as illustrating the poverty of both parties in debating talent on the floor of the House. In fact, among the whole three hundred and more members of the House there is not one man of the first-class; that is to say, not one who has as yet shown first-class abilities. The situation is suggestive of a tendency in our political life not pleasant to contemplate.

The general impression is that the bill will go through the House without much trouble. The party whip has been cracked over the backs of the Democratic members, and they have been notified that any failure to support Mr. Wilson will involve political and social ostracism. One Democratic member from New York rose in his seat on Monday and offered an amendment demanded by his district, but he was crushed so promptly and thoroughly that no other Democrat is expected to be guilty of similar impertinence. There, will, of course, be a swarm of amendments from the Republican side, but the reins of parliamentary discipline are well in hand and nothing will be allowed to break in upon the plan arranged by the managers for roll-call on the 29th inst., when every member on the majority side will be expected to vote aye. There are many who, like our California representatives, are under positive obligations to vote against the bill; but no excuses will be heard, and whoever fails to toe the mark will be made to feel how serious a thing it is to vote contrary to the wishes of the party leaders.

The general judgment is that all, or nearly all, the Democrats will vote for the bill, and that it will be sent to the Senate on the 29th inst.—one week from next Monday. And here the real fight will be. The rules of the Senate allow any member to speak as often and as long as he pleases; and since there is abundant debating ability on the Protection side, it will probably be an all-winter, if not, indeed, an all-summer contest. In consideration of the interests involved, of the consequences to be dreaded, of the temper of the country as illustrated in the late elections, and of the able and determined objection to be met in the Senate, we still hold to the judgment formerly expressed, that the measure will fail. We believe that the time has not yet come when an Administration can force through Congress a measure hazardous, if not fatal, to public interests, at a time of public distress, in the face of such protests as were uttered last November in Ohio and elsewhere, and in open defiance of the plain dictates of common business sense.

The Senators who are to make the fight for Protection will not be left to fight alone. California will send a man to help in the interest of her vineyards, another in the interest of her wool industries, another in the interest of her orchard industries; and so it will be with every State and every great interest dependent for its prosperity on the maintenance of the Protective principle. It will largely be a lobby fight in which the weight of public opinion will be pitted against the weight of a determined and desperate Administration working with the prodigious advantage of a party majority. It is a situation which should put every man on the floor of the Senate upon his mettle, and if it does not, incidentally, yield a product of eloquence and wisdom, it will be because these qualities are not to be found in the Senate of the United States. There seems, however, good ground for expectation in these respects when it is considered that the reform scheme will be supported by such men as Voorhees, Vest, Hill, Gorman, Morgan, Gray, Vilas, Palmer, Brice and Mills; and that it will be opposed by Dolph, Sherman, Hoar, Wolcott, Frye, Chandler, Lodge, Hawley, Allison and others. If there is not a Webster or a Blaine on either side, there are a sufficient number of men with definite convictions, with wide knowledge and with excellent skill in debate. As we have pointed out before, the Protectionists are much superior in the points of debating skill and parliamentary experience; but the stubborn fact remains that the other fellows have the most votes.

The financial tribulation among the railroads of the country, to which we made reference last week, grows more serious. There are rumors that another transcontinental line and at least one other prominent Eastern road are about to be given into the custody of the courts, at the request of their bond-holders. Already a very large proportion of the railroad mileage of the country is in this fix; and it has not escaped the notice of those who argue for nationalization of railroads that the courts contrive to manage them very easily. Experiences of this kind are useful in showing that the public, in its organized capacity, is quite as able as the railroad companies to secure the service of good administrative talent; and that the business can be carried on without serious fuss.

It is clear that very rapid progress is being made toward the nationalization project. Five years ago a man who suggested it was called a fool and a crank. Three years ago the idea was gravely combatted as a thing in violation of vested rights. Now, in the case of all not personally interested, the vested-rights theory is abandoned, and objections are limited to suspected difficulties in the way of practical administration, and the fear that it would dangerously swell the roll of Government employees. The experience through which we are now going affords the best possible proof—that of actual demonstration—that the public is entirely capable of managing railroad property; and there is, it seems to us, small reason to fear that the railroads of the country, under public ownership, would be the source of greater political corruption than they are now, under private ownership.

An interesting fact in the present situation is that those who most strenuously oppose the nationalization idea are—by forcing the roads into the hands of the courts—doing most to bring it about.

Mr. Doyle, whose letter will be found in another column, misconceives the attitude of the RURAL toward the Hawaiian question. Our criticism of Mr. Cleveland in that connection has been based upon his assumption of powers pertaining, as we hold, not to the executive, but to the legislative branch of the Government. We claim that he had no right to send a "personal representative" to investigate the revolution, but that he should have stated officially his view of the matter, leaving the policy and the method of investigation to Congress. We claim further that his attempt to reseat the ex-queen, besides being whimsical and absurd in itself, was another assumption of authority. We have condemned Mr. Cleveland's course, not only because it has seemed to us foolish and wrong and done in the spirit of arrogance, but because it is based upon a false and dangerous construction of our fundamental law.

As to Mr. Cleveland's theory about the revolution, we hold that as yet nothing is proven; though, as we have said before, it looks as if the American minister (Stevens) had a good deal more to do with it than he would have the country believe. From the beginning we have declared that the United States should be extremely cautious, and that in no event should it make advantage out of any wrong act of its minister; and that it should not, under any circumstances, take the Islands unto itself without the free consent of those elements of its population capable of political judgment.

All this, of course, is quite apart from the main question as to whether or not the United States should annex the Islands if they were offered us upon terms leaving the determination purely and simply a matter of political judgment. In consideration of race differences between the Island population and ourselves, of the permanent enlargement of our naval establishment which their possession would impose upon us, and of the difficulties of their administration in harmony with American political ideas, we are disposed to the opinion that annexation upon such terms as the Provisional Government proposes would not be a wise policy. On the other hand, it seems to us self-evident that, whether wise or otherwise, the annexation project is, for various reasons, certain to succeed in the end; and that it would be waste of words, therefore, to go to much trouble in the way of protesting against it.

Mr. Cleveland's course and its failure is a notable illustration of the mischief of trying to do right in questionable ways. If, when he came into office, the President had withdrawn the annexation treaty from the Senate by a message stating his suspicions as to the revolution; if he had read to Congress and to the country a lesson in honorable dealing between nations, and then left the whole matter to be determined in the natural way—if he had done these simple acts in right spirit, he would unquestionably have had the support of all reasonable people and would, in the end, have compelled a settlement upon fair terms; and in so doing he would have made a long step in the way of moral progress in international deal-

ings. But he took the course of arrogant assumption, undertook to ignore Congress and bull the matter through on the lines of his private theories; and, in the way of result, he finds his purposes prejudiced and hopeless and himself discredited.

Since our last writing the only development in the Hawaiian matter is the publication of President Dole's reply to Minister Willis' invitation to step down and out. It is a dignified and positive refusal to surrender, accompanied by a long defense of the course of the Provisional Government, with a statement that it relies only upon its own might for support; that it resents all foreign interference, and that it will hold the fort until a change of Administration in the United States shall afford the opportunity which it seeks for annexation. This, says President Dole, himself and his fellow-citizens of Hawaii will patiently wait for.

Mr. John T. Doyle on the Hawaiian Question.

TO THE EDITOR:—I have been so accustomed to look for a sensible and impartial treatment of public questions in your column entitled and written "From an Independent Standpoint," that your attitude on the Hawaiian business quite surprises me. As your journal must exercise a considerable influence on the opinion of those who read it, I trust to your well-known courtesy for space to present some considerations on the other side.

Doubtless the islands are a desirable possession, but that does not dispose of the question of their annexation; they are inhabited by a population of about 90,000, of whom some 40,000 are of the native race, 13,000 Chinese, 9,000 Portuguese, 2,000 Americans, 1,200 English, French and Germans, and the rest of all the varied nationalities scattered over the Pacific islands. Now, suppose the islands annexed, what sort of a government, having any claim to be republican, can we give them? Assume that the 3200 English, German, French and Americans can properly be made voters, surely no one would propose to confer the suffrage on the enormous mass of Chinese, Portuguese, Kanakas and mongrels which compose the mass of the population. Besides the Chinese and Portuguese are held, unless I am misinformed, to labor contracts which constitute a modified sort of slavery wholly at variance with the spirit of our laws. Obviously there can be no republican government in a community so composed, and the United States has no room for communities with any other sort of government.

These considerations are wholly independent of the question of how President Dole and his associates came by the property they propose to transfer to us, which after all is not wholly unimportant. On this head it is to be observed that the United States, over half a century ago, formally acknowledged the independence and nationality of the Islanders, and by its influence led other nations to do the same. They were not at the time and never have become a really civilized people, but we undertook to elevate them to that rank and to treat them as such. They were admitted into the family of nations with us as their sponsors. That fact constituted an acknowledgement and recognition of the government of the native chiefs and a pledge that we would not regard them thenceforth as liable to seizure or colonization, either by European governments or by ourselves, for colonization by white men means, of course, the overthrow of the native government—the domination of the stronger race and the gradual extinction of the native people. This is the history of Anglo-Saxon colonization *passim*, and against this our recognition of the native monarchs was a pledge. Yet here a handful of white men on one of the islands—emigrants and the progeny of emigrants from our own country—by collusion with the American Minister and under the protection of American bayonets, proclaim the overthrow of the native government and the installation of a provisional one in its place, *to last only until terms of annexation to the United States can be agreed on*. To accept such a transfer would be a gross breach of public faith on our part, and as indecent an act as history records. All that is said by Minister Stevens and his defenders about the immoralities of the late queen, and that the revolution is favored by the best people in the islands, is from the purpose. The United States has never accepted the mission of reforming the morals of kings, queens or people in foreign lands, and the assertions of Minister Stevens and his defenders of profligacy on the part of Queen Liliuokalani are a clear confession of conscious wrong on his own part.

I knew a private case many years ago bearing considerable resemblance to this Stevens-Dole transaction. A family in Canada was left in straitened circumstances by the death of the father who had been carrying on with very moderate success a manufacturing business. His eldest son took up the business, and struggled to keep the family together and their heads above water. He was a stern man, and at times reproached his younger brother—a spirited lad of 16—that he contributed nothing to the support of the family; that he ate and drank and wore clothes, but earned nothing. The youngster was stung by these reproaches, and, under this impulse, happening to see an opportunity of stealing a considerable sum of money without risk of detection, yielded to the temptation, put the bank notes in his pocket unobserved, and landed from the steamboat on which the larceny was committed before the custodian of the funds discovered his loss. His absence from home had been brief and unnoticed. He offered the stolen money to his brother with the air of Cassius when he says, "I that denied thee gold will give my heart." "You say I contribute nothing to the support of the family and live on your earnings; there is money—more money than you have earned since father's death. Take it all; I give it to you." The brother of course demanded whence the treasure came and how he had obtained it, but the youth declined to answer questions. "What difference does it make to you? It is good money and I got it for you and give it to you freely. What more do you want?" The brother, however, took the old-fashioned view of the case, then in vogue, and insisted on a confession of the facts and a restoration of the money to the bank that owned it. In view, however, that the larceny had been committed with the intent to benefit him, and that the offender was his brother, he strained a point in his favor and saw him safely over the river and into the State of New York. Except that the one is a question of a public, and the other of private, right, I see no difference between the two cases. The President, following the instincts of an honest mind, seems to have felt inclined to treat the case before him exactly in the same way as the Canadian did. There is no evidence that he contemplated the use of force to restore the old Queen without the mandate of Congress, and Judge Gresham in his letter to the President, which was the first paper given to the public on the subject, puts the case interrogatively. "Does not justice require us to

restore things to the condition in which they were before the U. S. troops were landed?" He comes to the State Department fresh from the bench and naturally leans toward the application to public affairs of the strict rules of justice enforced by courts of equity in such cases.

It is hardly probable that Congress will pass any measure for the restoration of the former government; and perhaps it is not called on to. The rules of strict justice applicable to private transactions are not always equally so to public affairs, for considerations of the public welfare are to be taken into account and frequently override all private rights. Louis Philippe in 1830 accepted the position of Lieutenant-General of the Kingdom at the request of his cousin, Charles X, and to preserve the crown for his grandson, the Duke of Bordeaux. He was guilty of a base perfidy when he allowed himself to be made "King of the French." Yet had he afterward been ever so desirous to repair that wrong, it can hardly be claimed that he would have been justified in endeavoring to set the Duke of Bordeaux on the throne, much less that it was his duty to do so. The case of Napoleon III after he had been raised to the Empire by his coup d'etat of December, 1851, and the plebiscite that followed it is similar. The danger to public interests in such cases becomes a controlling consideration, and hence the maxim is applied, "*Fieri non debuit, factum valet.*" It was wrong to do it; but, being done, it will have to stand.

I imagine President Dole and his conferees will have the Hawaiian difficulty severely left on their hands and be permitted to work out their own form of government and details of administration as well as they can. They may play at President and Cabinet to their heart's content and make such rules for the game as suit themselves, only one thing I am sure of—the United States will not under the present or any future administration permit, viz.: They must not undertake to sell their stolen sovereignty to any foreign nation. If they do, it is to be hoped that any President in office, be he Democrat or Republican, will feel no hesitation in shaking them out of their holes and putting a summary end to their private theatricals. Yours, etc.,

Menlo Park, Jan. 4, 1894.

JOHN T. DOYLE.

California Fruit Union.

Annual Meeting—Report of Shipments—The New Officers.

At the annual meeting of the California Fruit Union, held Wednesday of this week in the rooms of the State Board of Horticulture, there was a large attendance of representative fruit-growers. J. Z. Anderson presided.

The annual report for 1893 was read, as follows:

SECRETARY'S ANNUAL REPORT.

Mr. President and Members of the California Fruit Union:—You have been called together to hold the ninth annual meeting of stockholders of the California Fruit Union.

It will devolve upon you to elect a board of nine trustees, who will have the management of the affairs of the Union during the coming season, to take such steps as may be deemed best by them and for the interest of its stockholders.

The retiring board are not able to make as good a report of results on shipments as last year financially, but believe we have done as well as possible, and also that its supporters and shippers have less to complain of than those who have shipped through other organizations. Those of the regular shippers with the Union who have not received fairly good money are few, considering all the adverse circumstances under which the fruit-growers of California were placed this year. And one of the worst of these is one that we seldom hear mentioned, and that is, that the season was a very late one; in fact fully a month on much of our early fruit, and my experience always has been that a late season means little money, while an early season means generally good money. Added to this there was a large crop of domestic fruit in the East, ripening at about the same time as our own, and last but not least, the financial situation, not only in our own country but all over the world, was such that purchases were restricted, whether for canning, preserving or from the fruit stand; and when we take all this into consideration, it is almost a wonder that we have done as well as we have for the season. We have received as payment for stock the sum of \$15,578, and have paid back to stockholders in rebates and dividends more than \$105,000, and have afforded many small shippers the opportunity of shipping and paying freight at carload rates, which would never have been done had not the California Fruit Union been in existence; and the trustees can look back with much gratification at the good results that have been accomplished by this work. There are many local organizations that have been formed on a sound and safe basis, that have resulted in much good to the growers in their respective localities, in giving them better facilities for shipping, and educating them in regard to picking, packing, etc., which are essential and often expensive experiments. Our books for the season just past show that Union agents have received 2404 carloads, of which number 1579 have been shipped in refrigerators containing 12 tons or more each, 779 ventilated cars by freight, leaving only about 46 that were shipped by passenger train. These figures do not include a large number shipped by members of the Union to points where we have no agents, and of which we have kept no record, but which added to the others would make about 3000 cars of ten tons each.

The number of stockholders has been increased by eight new subscribers, there being now issued and fully paid up 14,610 shares. The number of shippers increased from 544 last year to 895 for 1893. The shipments were made from some 42 different shipping points, and compare with previous years as per list below:

THE SEASON'S SHIPMENTS.						
	1893.	1892.	1891.	1890.	1889.	1888.
Vacaville.....	847	820	278	254	171	163
Loomis.....	19	5	22	6	.....	.....
Newcastle.....	141	142	88	138	88	38
San Francisco.....	.....	.....	.....	2	.....	.....
San Jose.....	374	265	304	290	206	97
Winters.....	125	119	102	109	28	25
Sacramento.....	405	314	294	196	278	346

Santa Barbara.....	.....	.....	5	2	.....	.....
Placerville.....	.....	.....	2	.....	.....	.....
Raisin.....	.....	.....	1	.....	.....	.....
Butler.....	.....	.....	5	.....	.....	.....
Stockton.....	.....	.....	3	.....	.....	.....
Egger's Switch.....	.....	.....	3	.....	.....	.....
Los Palamos.....	.....	.....	1	4	.....	.....
Marysville.....	83	15	.....	3	.....	6
Mullen's Switch.....	.....	.....	.....	3	.....	.....
Chico.....	20	.....	3	1	.....	.....
Shelbyville.....	10	.....	.....	1	18	.....
Suisun.....	46	61	65	68	47	11
Fresno.....	30	42	2	.....	.....	16
Davisville.....	23	20	12	22	24	.....
Martinez.....	20	8	1	10	9	.....
Fowler.....	15	33	6	.....	.....	.....
Tulare.....	41	57	22	25	58	.....
San Lorenzo.....	30	30	30	28	.....	83
Floral.....	73	44	50	59	32	.....
Colfax.....	35	.....	.....	1	4	.....
Malaga.....	7	39	.....	3	.....	.....
Natoma.....	63	52	25	65	52	29
Elk Grove.....	.....	.....	.....	1	6	.....
Bakersfield.....	59	.....	.....	24	.....	.....
Sonoma.....	30	16	17	25	.....	.....
Wrights.....	30	12	13	11	.....	10
Haywards.....	27	.....	8	1	.....	.....
Cordelia.....	.....	.....	5	.....	11	.....
Manlove's Switch.....	.....	.....	10	.....	.....	.....
Pleasanton.....	7	2	1	1	.....	.....
Blacks.....	.....	.....	.....	1	.....	.....
Napa.....	.....	.....	.....	5	.....	.....
Penryn.....	83	32	.....	4	6	.....
Mayhew.....	.....	.....	.....	11	1	.....
Portland.....	.....	.....	.....	2	7	.....
Santa Rosa.....	.....	.....	.....	.....	8	.....
Woodland.....	.....	.....	.....	.....	2	.....
Concord.....	15	.....	17	.....	.....	.....
Hemlock.....	4	18	14	.....	.....	.....
Armona.....	102	2	3	.....	.....	.....
Biggs.....	35	9	2	.....	.....	.....
Madera.....	.....	2	.....	.....	.....	.....
Hookston.....	7	5	.....	.....	.....	.....
Gridley.....	13	1	.....	.....	.....	.....
Acampo.....	.....	1	.....	.....	.....	.....
Hollister.....	2	1	.....	.....	.....	.....
Selma.....	5	1	.....	.....	.....	.....
Hanford.....	5	2	2	.....	.....	.....
Yuba City.....	.....	1	2	.....	.....	.....
Bulahach.....	.....	2	2	.....	.....	.....
Lodi.....	.....	1	1	.....	.....	.....
Sequel.....	1	.....	.....	.....	.....	.....
El Verano.....	5	.....	.....	.....	.....	.....
Folsom.....	3	.....	.....	.....	.....	.....
San Leandro.....	7	.....	.....	.....	.....	.....
Walnut Creek.....	13	.....	.....	.....	.....	.....
Totals.....	2,404	1,694	1,387	1,373	991	851

MARKETS TO WHICH SHIPMENTS WERE SENT.

	1893.	1892.	1893.	1892.
Chicago.....	1,040	715	Philadelphia.....	37
Omaha.....	124	102	St. Louis.....	65
New York.....	408	365	Pittsburg.....	15
Boston.....	116	99	New Orleans.....	63
Minneapolis.....	160	156	Milwaukee.....	19
Denver.....	57	.....	Louisville.....	10
Cleveland.....	29	.....	.....	7
St. Paul.....	227	68	Totals.....	2,404
Kansas City.....	38	28	.....	1,694

The duplicate accounts of sales received so far cover 1,745,090 packages of fruit sold for \$2,045,404.95, out of which was deducted \$972,284.43 for freight and refrigerator service, \$155,213.69 for cartage and commission, a total of \$1,127,498.13, leaving \$918,906.82 as net money received by the shippers. These figures of freight do not include all the money paid by shippers, for on much of this fruit there had already been paid local charges, either before or after being loaded, and before reaching common points of shipment; hence from the net money must be taken charges for local freight, boxing, packing, paper and loading, expenses which will reduce the net money considerably, and show that the railroads and refrigerator companies have made a much larger profit than the shipper, and be good and convincing evidence to them that they should assist us in getting a more reliable and cheaper service.

The average gross sale per package in 1893 was \$1.17, against \$1.54 in 1892. The average gross charges in 1893 were 65 cents, against 68 cents in 1892. The reduction is due to the large amount of cherries shipped in 1893, and which only weigh ten pounds or a little more per box. The average freight per package was 55 7 cents, against 56 cents in 1892. In making these figures we have called each package a unit, whether a ten-pound cherry box, a peach box, or double crate of grapes, or box of pears. The cherry shipments have been very heavy, and, while some paid well, many of them made bad results, and in those cases most of them can be traced to poor service by the transportation companies. In many cases where passenger service was charged and paid for, we received even slow freight service.

The shipment of apricots was quite heavy from the early sections, but results generally poor. Pears, peaches and plums have been shipped in large quantities, and, except where too long in transit, have generally arrived in fair to good condition, and sold for fairly good money, except in a few instances when markets were badly glutted with domestic and other California fruit.

We have a large amount of late pears unsold; and while the apple crop is short, the pears are reported as moving slow.

Grape shipments have been very heavy this year, far in excess of any previous year. During the early part of the season, prices realized were very good, while the last shipments made generally poor results, as they met heavy competition from domestic grapes East, and Eastern growers even tried the experiment of shipping three cars (that I know of) to the Pacific coast, which resulted like some of ours to the East, in a balance on the wrong side of the ledger. I cannot give you anything definite in regard to the service which transportation companies will give us for another year, but I hear there is an effort being made to give us a schedule train to carry ventilated fruit cars through on a quick and reliable time, which all fruit men should unite in trying to secure.

Out of the rebates sent the Union, we have paid all expenses, such as telegraphing, telephoning, salaries, stationery and general expenses, and a stock dividend of six per cent was declared on full paid stock, and a sum of \$200 was placed to the credit of the reserved fund; also a rebate of one-half of one per cent was declared to members of the Union on gross sales of their shipments.

The financial condition of the Union is clearly shown by the annual balance sheet made up to January 16th, and shows as follows:

ANNUAL BALANCE SHEET JANUARY 16, 1894.

Profit and Loss.....	\$12,449 31	Stock Account.....	\$15,573 00
Office Expense.....	1,746 06	Rebate No. 6.....	159 90
Telephone Account.....	2,363 81	Dividend No. 5.....	218 85
Traveling Account.....	443 15	Rebate No. 6.....	41 80
Traveling Expense Acc't.....	896 61	Eastern Agents.....	21,306 19
Taxes.....	16 75	Reserved Fund.....	160 32
Nat. Bank D. O. Mills & Co.....	11,085 28	Freight and Loading.....	189 56
Salary Account.....	6,165 00	Dividend No. 3.....	40 38
Office Fixtures.....	800 78	Dividend No. 6.....	368 94
Cash on hand.....	2,271 24	Dividend No. 1.....	103 30
		Dividend No. 4.....	35 68
		Rebate No. 4.....	5 08
		Dividend No. 2.....	38 46
	\$38,286 96		\$38,286 96

And in closing our report, we would ask the fruit-growers in the different localities to form local organizations, which are beneficial in more ways than one, co-operate with the California Fruit Union and work with it as the best means of disposing of certainly a portion of your product, as the essence of the whole subject is Concentration and Control, which prevents some markets being overstocked, while others have not as much as could be sold at a profit.

TRANSACTIONS.

The following directors were unanimously elected for the ensuing year: L. W. Buck, Vacaville; H. Meeks, San Lorenzo; W. Treat, San Francisco; R. C. Kells, Yuba City; J. C. Boggs, Newcastle; W. B. Parker, Vacaville; J. Z. Anderson, San Jose; A. Block, Santa Clara; and D. Reese, Florin.

The resolutions of the Los Angeles Convention, calling for a reduction in rail rates on fruit to the East, were adopted.

President Anderson, Secretary Buck and A. T. Hatch were appointed a committee to confer with the railroad officials with reference to securing cheaper, better and more reliable service for the coming season.

Under the head of "the good of the order," a long discussion ensued over the so-called closed auction rooms at Chicago. Mr. Hatch stood out as the one prominent fruit-grower who opposed the Adams-Lewis house, while Messrs. Anderson, Buck, McKeitt, Block and others testified that, after thorough examination of its methods, they were convinced it was better than commission men or the open auction house. The meeting learned much of the details of the auction business, which information was listened to with marked interest.

The following communication was received from B. M. Lelong, Secretary of the State Board of Horticulture:

"I have just received a communication from Senator Stephen M. White, in which he says:

I think it would be a good idea to forward a number of boxes of selected raisins to this city, so that when the bill comes up in the Senate I may have something to show the members of the committee. The same suggestion will apply to prunes, regarding which a reduction is also threatened. Of course I will do my best to help you out.

"I hope that you will be able to send Senator White several boxes of prunes, which will aid him and the other members in inducing the committee to retain the present tariff on prunes. The raisins have already been sent."

At a meeting of the new board of directors the officers of last year were re-elected.

Fruit Exchange Meeting.

The directors of the newly organized State Fruit Exchange held their first meeting in this city on Tuesday and Wednesday of this week. Those present were: Philo Hersey, Santa Clara; E. A. Wheeler, Santa Clara; Dr. W. J. Dobbins, Vacaville; C. C. Thompson, Pasadena; B. F. Walton, Yuba; B. F. Allen, Chico; D. T. Fowler, Fresno; E. W. Maslin, Placer; John Marklev, San Francisco; F. N. Woods, San Francisco; and E. F. Adams, secretary.

Much discussion prevailed, but the following articles were finally adopted as representing the objects for which the exchange is founded.

To receive, store and market for account of its owners all fruit and other food products intrusted to the corporation for that purpose on such terms as the by-laws shall prescribe; to promote the interests of the producers of fruit and other food products of California, especially by collecting and disseminating information and statistics bearing on the preparation and marketing of said products; establishing uniformity in methods of manipulating, grading and packing, and extending and developing markets; to borrow money, loan and make advances of the same upon products in possession or under the control of the corporation, and to promote the formation of local co-operative associations affiliating with this corporation and to assist in establishing their credit; to purchase and sell all supplies used in raising, preparing and marketing said fruit and food products; to lease, purchase or otherwise obtain real or personal property necessary for the transaction of the business of the corporation, and to sell or exchange the same.

The name of the association was selected as the "California Fruit Exchange." The capital stock will be \$100,000, divided into 20,000 shares of \$5 each.

No positive action was taken in the matter of officers. Col. Hersey and Mr. Walton were in turn urged to take the presidency, but neither saw his way clear to give to the work the time and effort essential to it. There will be another meeting on the 30th inst., when it is expected to fill the offices and put the Exchange fairly upon its feet.

Southern California Farmers' Institute.

The Southern California Farmers' Institute was in session last week at Whittier, Los Angeles county. The election of officers for the ensuing year resulted in the election of the following: C. C. Thompson of Pasadena, president; I. H. Cammack of Whittier, vice-president; Mr. Kruckeberg, secretary and treasurer.

Sierra Madre was chosen as the next place of meeting. Messrs. Chapman, Andrews and Crisp were selected as a committee of arrangements and programme. Papers were read at the session on fruit shipping and packing by H. W. Holabird of Claremont; "Profitable Onion and Asparagus Gardens," by Mr. Murdock of Westminster; "Laws of Competition and Trade," by Lionel A. Sheldon of Pasadena; and "Experimental Station Work," by J. W. Mills. The session closed with a ride in carriages through Whittier and East Whittier, and the inspection of the Whittier State School.

HORTICULTURE.

Thoughts About the Japan Plums.

So much interest is taken in the growth of recently introduced varieties of plums from Japan, and in the cross-bred seedlings produced by Mr. Luther Burbank, of Santa Rosa, that reflections upon them from a broad pomological point of view will be entertaining reading to our growers. These varieties are also attracting much attention at the East, and are proving to be valuable there. At a recent horticultural meeting in Iowa, a paper was read by Dr. A. B. Dennis, of Cedar Rapids, from which we shall publish leading extracts, as follows:

No fruit of recent introduction is meeting the expectations of fruit-growers throughout the entire country as well as these oriental plums. Their high quality, size of fruit, smallness of pit, earliness in bearing, great productiveness, handsome color, freedom from insect pests, long keeping and shipping qualities are just the points to recommend them as fit companions for our finest natives, and I predict that the cross-bred seedlings of these orientals and our natives will in the near future make Iowa one of the best plum States east of the Rocky Mountain region; but this will not be done without hard labor and expensive biological work—by the combination of the life forces of these two hardy fruits they must come through the realm of cross-fertilization. We are standing face to face with a new and more scientific pomology than the most profound student can fully realize. We have taken but few steps in the direction of permanent success in the higher development of plum culture in our State. We must become practical students of the conditions that surround us, and use our native fruits as a basic structure to build on, and gain by practical demonstrations a knowledge how to combine the life forces of our native plants with those of foreign blood that possess all those inherent qualities that ours lack, and are so closely allied that links can be found to make a complete chain and fill the gap that now exists between our native fruits and foreign introductions.

These Japanese plums on my ground have been a surprise to me so far, especially their power to endure a low temperature, having stood 26° below zero without a tinge of frost and remain healthy to the terminal bud. The past season the Burbank and Ogon bore a heavy crop for such young trees, and the same trees that bore so heavily this year are extremely full of fruit buds for the coming crop next year. This indicates great productiveness, and these plums bid fair to be heavy annual bearers. Just why these fruits from their far-off island home in the Pacific ocean, with a mild and genial climate, should have such powers of endurance in our cold continental climate, 1000 miles from the ocean influence that they have been surrounded with, has been a great puzzle to me. By watching them side by side with our hardy natives in the past four years and witnessing their splendid behavior, I have been forced to the conclusion that there was a close relationship between our natives and those Japanese introductions, and that in the preglacial climate they had a common origin in North America in the region of Greenland and Alaska, when that section of the globe was blessed with a climate more temperate even than ours; or it may be possible that in the great prehistoric past, geological convulsions destroyed their former continental home in the Pacific ocean, which at that time may have been connected with North America in the far Northwest. Their habits and growth are so much more in harmony with our natives than those from Europe that I am quite sure at one time ancient America and Japan were closely related, and either the ancient Japan climate was more in harmony with our present diversified climate or these plums and our natives had a common origin in North America. Such hardy chicasas as Golden Beauty, Honey Drop, Chas. Downing, Col. Wilder and Wild Goose, also of the Miner group like Miner, Hammer and Rockfort, are connecting links that chain our native plums to some of these oriental sorts like Satsuma, Burbank, Yellow Japan, Ogon, etc. Points of similarity noted are early shedding of leaves and maturity of wood early in the fall like our natives; multiple of leaf bud like native sorts named above; also color and roughness of bark and fibrous condition of the inside skin of fruit. There are doubtless many more points of resemblance that will reveal themselves as we more closely study and compare them with our natives. However, we must not expect too close a resemblance, for they have been separated for thousands of years, and the conditions which have surrounded them were so radically different that it has almost blotted out their connection. When we realize that these orientals became separated from our natives and were surrounded with a genial climate, and show the influence of a high civilization for unknown ages, while our natives had to struggle against a relentless warfare of elements in climate, savage beasts, wild and destructive races and tribes of mankind, and left entirely to nature's law, "the survival of the fittest," in the great struggle for existence, the only wonder is, it seems to me, that, under such different conditions and treatment for ages, we can find a trace of their origin and relationship. I have expressed my views to some of our pomologists and will give brief extracts from a few of their letters bearing on the subject:

P. J. Berckmans of Augusta, Ga., says: "Your ideas of a connecting link of the flora of Japan with that of the North American continent coincides with what my dear old friend, the late Prof. Asa Gray, once told me—that he found a wonderful similarity between some of the fruits of the United States and their congeners from Japan, which made the study of the latter so very interesting to him. You modestly term yours a wild idea. Permit me to say it is far from such, and really in your letter you but substantiate facts."

Prof. Bailey of Cornell University, New York, says: "I am much interested in your letter upon the Japanese plums.

The fruits of Japan and the United States are really very closely related. The two countries were once connected at the northwest, and the flora of both originated far north, and was driven southward by changes in external conditions." Prof. G. Goodale of Harvard University, Cambridge, Mass., says: "You will find in the article 'Sequoia' in Dr. Asa Gray's 'Darwinia' an account of his views in regard to the relation existing between the vegetation of Japan and parts of the United States. It is very interesting to know that you have independently, by your study of plums, arrived at the same conclusions as to many points." W. A. Taylor, assistant pomologist U. S. Department of Agriculture, says: "In regard to the Japan fruits of which you write, I am glad to receive your report concerning them. Your conclusion that they must have been native in a more severe climate than that of Japan is no doubt a correct one." Prof. G. S. Sargent, who has devoted much time to the investigation of Japan trees, and who spent the summer in Japan this year, states that he finds no wild representative of the species to which the cultivated Japanese plums belong. J. L. Normand of Marksville, La., writes: "I find that the Japanese plums have a wide geographical adaptation in the United States, most of them will succeed from the Great Lakes to the Gulf coast, and as to their relationship with our native sorts, the more I study them the more I find that they sprung from the same race of plums." The flora of Japan and the United States has a close resemblance in many of our wild plants. Prof. C. C. Georgeson says that "the common wild fox grapes of this country, *Vitis Lu-brasca*, grows wild in Japan." These plants are silent witnesses which unmistakably prove that this continent was once connected by land with Asia. The American Indian with his high cheek bones and Mongolian features is strong evidence that he is of Asiatic origin. Here we have better proof than the ancient legend of the "lost Atlantis" that North America was once connected by land with Asia. In closing, permit me to say, if my conclusions on the affinity of these fine Japanese plums and our native plums are true, it opens up a new era in plum culture; for here we have introduced a fine fruit that doubtless is related to some of our hardy chicasas and other natives. In their large size and fine qualities lies condensed improvement brought about by the scientific combination of life's forces of these oriental plums, so really to the Japanese horticulturists we owe much, for we at once can avail ourselves of these wonderful fruits it has taken perhaps thousands of years for them to develop, while our natives were left for nature to improve them under the law of "the survival of the fittest." By crossbreeding our natives with these fine orientals, we gain these long ages of improvement made by the Japanese horticulturists. Already much has been done by J. L. Normand, Marksville, La., who has produced hundreds of new seedlings, which are crossed with our natives, and many of them are said to be fine. I look forward for great results on my grounds with these crossbred seedlings. There is yet a wide realm lying between the American and Japan flora, a field almost entirely unexplored.

Old Apple Orchards

In Butte County They Will Have to Be Cleaned Up.

Mr. Eben Boalt, the very active and vigilant Horticultural Commissioner of Butte county, informs the Oroville Mercury that the Commission will soon take measures to inspect and compel the apple orchardists, large and small, in the mountains to clean up their trees and prevent the placing on the market of infected fruit.

It might as well be plainly stated that there are but few apple orchards in this county, says the Mercury, that are not affected with insect pests or scale of some kind. The mountain districts of this county grow fine apples—in fact, as good fruit as can be produced anywhere—but many of the orchards have become infected. This has not happened through anything, in the majority of cases, but ignorance. But the markets all over the State have become alarmed at the prevalence of disease in the orchards, and are taking active measures to stamp it out. To that end all importations of apples into the valley markets are now being rapidly examined, and seizures of fruit made by local inspectors. Such action, while it is highly necessary as a measure of protection to orchardists whose trees are clean, will work a hardship upon many mountain growers who depend largely upon the sales from their apple trees for their income.

Mr. Boalt informs us that the orchards and their products thereof will from now on be closely watched; and, no matter upon whom it may fall, all infected fruit will be condemned. Consequently, growers should take care that none but clean fruit is sent to the market if they wish to prevent its being destroyed. As above stated, the most of these trees have become diseased through carelessness and ignorance. To the end that the orchardists may become acquainted with the nature of the parasite affecting their trees, and the proper remedies to apply thereto, the following extracts are made from the best authorities on the subject:

"The three most common parasites found in the apple orchards of this and adjoining counties are the codlin moth, the woolly aphis and the pernicious scale.

"The codlin moth is perhaps the most common. The early brood of moths appear about the time of the opening of the apple blossoms, when the eggs are deposited in the calyx of the fruit just as it is forming. When the egg hatches, the tiny worm eats its way through the apple to the core. When it approaches maturity, it eats its way through the side of the apple, leaving the fruit while it is still on the trees. The later brood attacks the later pears and apples, and its habits are similar to the first. The most effective remedy for the first brood is to spray once with one pound of Paris green to 180 gallons of water, when just out of bloom; and, for the latter brood, spray twice, first application as above; second application, with one

pound of Paris green to 200 gallons of water. Another remedy found efficacious is to trap the worm as it descends from the tree by means of burlap sacks around the trunk, destroying chrysalis as they are found in the sacks.

"The pernicious scale is very abundant, and fastens itself upon the fruit, trunk and leaves of nearly all deciduous fruits. The scale of the female is gray, and of the male black. It is very common in the mountain districts. The winter remedy given is to spray with 40 pounds of unslacked lime, 20 pounds of sulphur and 15 pounds of salt. Take 10 pounds of the lime, 20 of sulphur and 20 gallons of water and boil till the sulphur is dissolved. Next, place in a cask 30 pounds of lime, pouring over it enough hot water to thoroughly slack it, and, while it is boiling, add the 15 pounds of salt. Then add to the lime and sulphur and cook for half an hour longer, when the necessary water to make 60 gallons should be added.

"The woolly aphis is especially injurious to the apple trees and appears on the trunks and branches of the trees. It also at times attacks the roots. When on the branches, the best remedy is to brush with kerosene emulsion or rosin solution or spray. When in the roots, dress liberally with wood ashes or gas lime, so that it will not come in contact with the trees.

"The above are the three principal parasites and the best remedies to be applied. To be forewarned is to be forearmed, and growers must, for their own good and the good of others, clean up their orchards. The inspectors, now out, will insist upon this. For their benefit alone is this article published. By taking ordinary precautions, they may save themselves much loss and put on the market only clean, healthy fruit."

New Rules for Handling Oranges.

The Riverside Fruit Exchange has formulated the following rules for the subsidiary county associations:

- 1st. No picking to be done by the box or car rate.
- 2d. No sacks of any kind shall be used by pickers.
- 3d. Suitable buckets or baskets to hold not over half an orange-box shall be provided. If baskets with rough bottoms, they shall be lined to prevent bruising fruit.
- 4th. The fruit shall be clipped close.
- 5th. All fruit shall be carried from the orchard to the several packing-houses on wagons furnished with springs to prevent pounding the fruit in transit; or, if not possible to get springs, to use props between the layers.
- 6th. The boxes shall not be filled so that the fruit be pressed by another box placed on top.
- 7th. The fruit shall remain in the packing-house not less than three days before grading and packing.
- 8th. The pressman shall use all possible diligence to bring the press down firmly at one stroke gradually to prevent breaking of cells.
- 9th. Any employe who refuses or neglects to handle the fruit as herein suggested, and as directed by the foreman in charge, shall be discharged; and when so discharged, the manager shall at once notify every association so that he cannot be employed to the detriment of other parties.
- 10th. That when any individual or firm refuses or neglects to handle his fruit as above outlined, the association handling said fruit shall notify said individuals that he cannot be a partaker of the benefits of the private plan, but his fruit will be shipped by itself for his account and he must individually bear the loss entailed by bad handling.
- 11th. That no ladder or picking apparatus be transferred from one orchard to another, and that all possible caution be taken to prevent the spread of scale.

Fruit Tree Inspection.

We find in the Oroville Register an interesting report of a local fruit-growers' meeting, at which an hour or more was taken up in discussing the necessity of more thorough inspection for fruit trees. Eben Boalt, R. C. Kells and G. M. Gray ably presented the subject, and if the tax-payers of the county could have listened to their arguments we are convinced they would unanimously have urged the board of supervisors to grant a greater allowance for the purpose of more thoroughly inspecting the trees that are being grown in the county and those that are being brought here for planting.

Last year the board did not limit the commissioners closely and in consequence the bills were larger than the board of supervisors deemed necessary. This year, or some time during the past six months, the board cut down the allowance so that the total amount paid for fruit inspection should not exceed \$50 per month. Messrs. Gray and Boalt, members of the Butte county commissioners, gave many instances of the value of this inspection and showed the necessity of larger expenditures, while Mr. R. C. Kells of Sutter county gave his experience as a commissioner in Sutter as a further evidence in this matter. In consequence of this showing made at this meeting a committee of five, consisting of G. W. Thresher, Judge C. F. Lotte, S. W. Ross, P. R. Persons and R. C. Grubbs, was appointed to go before the board and ask that a larger sum be granted so that the commissioners and inspectors might do their work in a thorough and effectual manner.

Mr. Boalt showed that recently this and the adjoining counties had been saved from having a large number of diseased peach, plum, prune and other fruit trees planted through the active agency of the horticultural commissioners. These trees were infested with peach root borers and if the diseased trees had been set out here, in a few years this disease would have spread widely among our orchards. He found the trees on sale, had quarantined them and the infested roots had been submitted to the leading experts of the State, who pronounced the trees infested ones, and thousands of them had been burned. Mr. Kells said the reason why our orchards were being infested with diseases was because we had made money out of fruit and this had led to a rapid extension of fruit planting. Our people are

not content to grow their own trees, but had sent for thousands of trees to Eastern growers, and thus infested trees had been brought here. We are now fighting to keep down the disease and to have good clean trees. This can be done if the trees and orchards are inspected and the diseased ones cleaned. The law fully provides for this, but it requires some money and this the board of supervisors ought to grant. Mr. Boalt gave some figures of interest and claimed that the fruit-growers had a right to ask for this protection.

In 1893 the fruit-growers of Butte were assessed on growing trees \$186,000; the taxes amounted to \$2617. Mr. Smith, the deputy assessor, said there was at least \$50,000 more that had been assessed upon fruit trees, but that it could not be segregated from the amount assessed upon other property.

Mr. Boalt called attention to the fact that in 1887 the land he now owned at Palermo was only taxed for \$2.50 per acre. Now this land was assessed for \$40 per acre, and when planted to citrus fruits, one-year-old trees for \$20 an acre, two-year-old trees for \$40 an acre, three-year-old trees for \$60 an acre, four-year-old trees for \$80 an acre, and five-year-old trees for \$100 an acre. He claimed that fruit-growers had a right to ask or even demand that some of this money should be used to protect the horticultural interests. He called attention to the fact that before Palermo became a fruit colony the total taxes upon the land was \$35,000 for 7000 acres, and that only six or seven poll taxes were collected. Now the assessment is \$350,000 and between 300 and 400 poll taxes are collected.

Mr. G. M. Gray spoke of our rising olive industry and alluded to the remarkable change in the appearance of the land just opposite Oroville from what it was ten years ago. He said the olive trees needed care and attention lest infested and diseased trees be brought here and thus the industry be crippled, if not killed.

Orchard Notes.

Major C. J. Berry, Horticultural Commissioner of Tulare county, makes the following statements for the benefit of his district. They may profitably be applied generally:

Trees newly planted that are not yet in leaf do not require any great amount of water. In fact, too much water at such a time is a detriment to trees. Water packs the ground closely and excludes the air, and a tree's roots need some air as well as its branches. Trees can die of suffocation as well as individuals, and packing the earth so tightly that it cannot contain air is sure to destroy a tree. Observation has shown the writer that deaths among trees planted in alkali soil are largely caused by the alkali soils packing so closely that they exclude the air. If you mix clean, short straw and gypsum freely with the alkali soil that you plant the tree in, and then place a small tin or wooden shield about the tree at the surface and two or three inches below it, filling same with gypsum, you will meet with satisfactory success where heretofore you've experienced total failure.

New or virgin soils are not the best to plant in orchards. The soil worked one or more years at first in grain crops will produce a better tree growth.

Pinching the terminal bud on your prune trees after starting and growing 20 inches in the spring is an excellent plan for the trees. It branches the tree and prevents excessive waste of energy of same in growing one straight limb 10 or 12 feet high that has to be pruned off the next winter. This applies only to yearling trees. I do not prune the prune trees after the first year.

If you will have the leather trace of the horse that walks next to your tree to lap over the end of the singletree and fasten on the back side of it, you will not bark your trees, and will save yourself a great deal of annoyance. Once a tree is skinned, the bark never grows on again without assistance. It can be helped to grow on again by wrapping up in fresh cow dung.

If trees, by heavy loads of fruit or strong winds, split down, put them together again as they were, bolting them through and through, and then wrap their trunks where the split is in a plaster of fresh cow dung. You will neither lose your tree nor the fruit.

Nearly every orchard in our county contains one or more spots of strong alkali soil that will cause the death or produce very stunted growth of any variety of fruit trees planted in it. Such spots are an eyesore to the orchardist, and there has been a great deal of time and money spent on them without any very satisfactory results.

If the question is asked the average horticulturist, "What kind of trees shall I plant in such soil?" he will answer, "Pear trees." "What kind of pear trees?" "Bartlett."

The writer knows by actual test and experience that the Bartlett pear will not grow or produce satisfactorily in alkali soils, but there are other good varieties of pears that will. One of the best varieties is Beurre Clairgeau first, and Beurre Hardy second.

In closely examining the effects of alkali soil at our Experimental Station, I found there are other varieties of pears that will do well in alkali soil, even better than those mentioned; but they are not popular thus far in our State. For the benefit of our orchardists I will name them: Onondaga does very well in strong alkali; Keiffer and Lecompte seem to be all right. The last two are pretty good pears for market.

This article gives my personal experience with the Bartlett and Beurre Clairgeau. I do not advise the planting of Bartlett pears in alkali soils.

I found one excellent way to use our alkali soils in tree planting. Mix freely with soil that you put about your tree's roots, gypsum and clean, short straw, and about the body of your tree, at the surface of the ground, place a piece of tin, "a fruit can with the bottom and top out," and fill that space between the tin and the tree with gypsum. Let the tin extend down in the ground two or three inches. The results to you in such spots will be satisfactory.

FRUIT MARKETING.

A County Plan of Organization for Fruit-Selling.

The Placer county fruit men have for some time had under discussion a county organization for fruit-selling. A plan was submitted in December by P. W. Butler, which is now in the hands of the committee on organization. The following plan has just been submitted by J. Parker Whitney, president of the county society:

The formation of a corporation under the laws of the State of California, to be known as the Placer County Fruit Exchange. Capital stock, 50,000 shares, at a par value of \$1 each, \$50,000. (The assumed basis of capital of \$56,000 does not imply the necessity of a cash commitment of that amount, but so set for possible future convenience, and admissible under the State incorporating laws.) To be incorporated under a liberal charter, with the right to buy and sell fruit or other articles, and to do all things which men may legally do in connection with the business proposed. To be governed by a code of by-laws, which may be drawn up, applicable to the business.

To be governed by a board of not more than five directors, who shall appoint a president, secretary and treasurer, and such other officers or managers as may be considered desirable. Said directors to be the most earnest, practical and responsible fruit-growers in the community, who must have the complete control of the company's management, and who must give, especially during the first year's business, their close attention, and who must be expected to give more attention and exertions than can be repaid for by any salary. The governing board of directors, as well as the secretary and treasurer, to be salaried, but at the most moderate rates compatible with a proper sense of economy.

The headquarters of the company to be at such town on the railroad in the county as may be agreed upon.

The company not to undertake the purchase at present or the erection of buildings, but negotiate or arrange with some experienced house which may now be in the fruit-drying business, and which may be considered entirely trustworthy, and which shall give over its own business entirely for the company's, for a fixed sum for the year 1894. The managing house to do all the business of the company in the county, subject to the direction on established rules of the board of directors of the company. The house to buy from the manufacturers and dealers all the boxes and materials required and distribute them among the customers of the company at a general price which may be determined upon. The managing house to pack, ship and sell the products of the growers exclusively and keep a clear and explicit account of all of the affairs of the company.

The company to secure or not, as it may decide, the services of a first-class experienced fruit man in the East to aid in the distribution of the county fruits, or establish relations with some reputable Eastern house, as it may deem best, to do the selling business of the company. (This agent must necessarily be most experienced and trustworthy, and may be hired during the fruit season solely for the company, or to act in connection with another, or other county organizations which do not conflict with those of Placer county.)

The managing house in the county to be prepared to pack the fruit for moderate or other producers, as may be required, and shall, besides attending to the furnishing of supplies and the forwarding of fruit, be authorized, subject to such conditions as may be agreed upon, to sell the company's fruits at its station or elsewhere in the county, to houses already established or otherwise, as may be determined upon.

This, in brief, is the outline of the organization I would suggest, subject to such improvement as you may think proper, but the outline is quite inadequate in itself to effect the purposes required. The outline is but the frame, and the business must be animated by an earnest, patient and painstaking intelligence, upon which its success will depend.

The company will require the services of intelligent men in the community who will give their time to a patient and comprehensive circulation among the fruit-growers in the county to enlist their interest and co-operation in the business.

It may be expected that there will be more or less opposition from other fruit-buying houses. This will be found a serious obstacle, and must not be underestimated, neither the objections of other parties or the dissatisfaction which may be expected to arise from ignorance, natural obstinacy, doubtings and unfair reflections, which only a continuous and successful management can overcome. The whole programme of the company must be so worked out and clarified that it can be explained and understood by all that the efforts of the company are in the interests of the fruit-growers, completely co-operative, and not for the interests or advancements of others.

It is advisable that all fruit-growers shall be stockholders in the company. It is a question of how much, or to what extent, one must or may be interested. I do not know but what, in the view that it would be quite impossible at this time to furnish an adequate cash capital from stockholders for the company to carry on its business without outside assistance, it would be as well for the amount of stock to be taken by each stockholder joining the company to be entirely nominal, without regard to acreage or products, even if not more than to the extent of one share of the value of \$1, inasmuch as the company could not expect to place reliance upon such amounts for practical pecuniary aid, but having such stockholder fully obligating himself to purchase all boxing materials from the company, and to commit all his fruit products to the management and sale by the company.

A very important matter for consideration, and of imperative necessity with the company, will be the standing

of its credit, and its ability to furnish an appropriate sum of money to not only pay for packing materials, but to make suitable advances for necessitous fruit-growers, otherwise such fruit-growers would in dire necessity be compelled to go to fruit-buying houses, who are ready to make advances. I believe this important difficulty can be fully overcome by a proper organization and judicious management, and without the ability on the part of the company to make necessary advances I would consider the company to be at great disadvantage.

It may reasonably be supposed that the company can have a first-class credit, and that it can, by its profits derived from selling a large quantity of boxes and packing materials, and by packing fruit for growers, realize a considerable profit. It is estimated that over 1,500,000 boxes were used by Placer county fruit-growers last year, which were supplied by local fruit-buying houses at a large profit, and it is apparent that from this source alone the proposed company would receive a substantial return, if it should receive a proper support. With a proper support, this source alone would be sufficient to defray all running expenses, considering the magnitude of purchases and the consequent low prices which could be obtained, and without charging packers more than they ordinarily pay.

A feature of the greatest importance, and one which is generally admitted, but not so generally realized in the complete sense it should be in its valuable bearing upon the fruit interests of Placer county, and upon the future reputation of the company and the distinctive profits to be gained, is that of the care which should be exercised in the grading and packing of fruit. References to the manner of packing fruit, I have heard so many times reiterated again and again by the fruit-sellers in Eastern markets who have continually laid such stress upon this point, that I am sure this feature cannot be too seriously considered by the company. By a systematic inspection and classification of all fruits shipped by the company, I am sure a large resulting profit would be gained and a confidence secured for Placer county which would rank it still higher in the estimation of Eastern buyers and consumers. It would be desirable to have the brand of the company so reliable, that purchases of its fruits could be effected at its shipping stations by Eastern buyers without examination. A supervision in this respect should be most rigorously enforced.

I have reasons, well founded I believe, that the whole selling commissions to be paid for disposing of the large products which the company may be enabled to handle can be comprised within or not exceeding five per cent. At this rate, and by charging from 7 to 8 per cent, as now charged by local houses (and even higher), a considerable source of additional income could be secured by the company.

Therefore the source of revenue for the company would, without increasing the average prices now paid by the fruit-growers, be:

First—The profit on boxing materials, which should equal 25 per cent.

Second—The profits on selling commissions of two per cent.

Third—The interest profits, equal to four per cent per annum upon advances made.

It would be desirable to have it fully and clearly understood by all those who would engage in the company as stockholders that they are to experience all the profits in case any should arise from the management of the business over its necessitated expenses. It is reasonable to suppose that, if a general support is given the company, it will be likely to create a surplus. This surplus would be an asset for the fruit shippers in proportion to their amounts of fruit. It might be desirable, in case of a surplus of this character, to continue it in the treasury of the company for further convenience in its business, and possibly to be added to, which would still continue to be the fruit-growers' property, and not otherwise, to be held or be divided in its proper distribution, as the directors of the company should deem most appropriate.

It is likely that, in case of a surplus, the fruit-grower would receive such palpable advantages from doing his business through the company that he would be well satisfied to see his extra capital administered for his further benefit, and give that hearty support which would continue the company's prosperity.

Lower Placer county, from its locality and fertile soil, with its present irrigating facilities and proximity to shipping stations, enjoys an enviable distinction which no other county in the State surpasses. Its fruits, from their early ripening and firm character, from their superiority in these respects, lead the markets in price, and when one considers the yet inadequate supplying of the Eastern country with its rapid growth and the future demands, one should not hesitate in putting himself firmly in support of the organization which is proposed, which, if well supported and administered, will still further advance the merits of the county and enhance the profits of the fruit-grower.

Co-operative Shipping from Sutter County.

The co-operative shipping business inaugurated last spring by the Sutter Fruit-Growers' Association has proved a marked success. At the first annual meeting held at Yuba City last week it was reported that the shipments of fresh fruits for the season were as follows: Denver, 45; Chicago, 29; New York, 16; Boston, 11; St. Paul, 12; Cleveland, 9; Omaha, 7; Kansas City, 6; Minneapolis, 5; Pittsburgh, 1; Portland, Or., 1; Philadelphia, 1; total, 141 cars.

Manager Traynor stated that from talking with large growers from other parts of the State, after comparing notes of sales with theirs, he had ascertained that the fruits from here had netted the grower more than in any other section.

It was determined that hereafter the canneries of the association should be conducted personally by the directors. It was further determined that "the shippers shall pay the association, or person deputized by the board of

directors for that purpose, one and one-half cents for all peach boxes and half crates, and two and one-half cents for pear boxes and full crates for loading; any surplus money remaining shall be divided pro rata among the shippers at the end of the year." The following guarantee was also adopted:

Resolved, That all persons shipping through this association shall be required to file a good and sufficient guarantee with the board of directors of this association against all losses from non-payment of freights, or for any sales of fruit not covering expenses on his or their shipments.

The election of officers was then proceeded with and resulted as follows:

President, B. F. Walton; secretary, H. P. Stabler; directors, B. F. Walton, R. C. Kells, H. P. Stabler, T. B. Hull, J. B. Wilkie, Mrs. J. E. Starr and Ferd Hauss.

S. J. Stabler then delivered a brief address. He impressed on the board of directors the absolute necessity of attending the meetings regularly. Every fruit-grower in the district should, in his opinion, become a member of the association. Every person who raises fruit, in no matter what quantity, should join. They should join hands, lay aside all personal feelings and be bound by a bond of union which would benefit them all.

Chairman Walton stated some steps should be at once taken to increase the membership of the association.

R. C. Kells remarked that they would like to have some suggestions from the chairman as to the fruit market.

Chairman Walton replied that he had been to Chicago toward the end of the shipping season. It seemed to him that it would have been well if they had an active representative there, as business was done without much regard to the growers' interests on the arrival of the fruit. In order to make the auction plan work, each locality should be represented in the larger markets. The outlook for fruit had certainly been discouraging, and he would not be in favor of shipping any great quantity unless they had a representative at the large markets. It was impossible for a person at this end to be thoroughly posted.

J. Ross Tranor was also called upon. He was in favor of sending a man at this time of the year who would solicit outside trade and tell them that he could keep them supplied with certain fruit at a certain price and agree on the amount to be shipped at certain dates. He had no doubt that their fruit had been sold in the best auction rooms, but the competition was great. Porter Bros. did an immense business, as did also Blake & Ripley of Boston. There was much to contend with and much to learn in the fruit business.

R. C. Kells introduced the following resolution, which was adopted:

Resolved, That we condemn the practice of misrepresenting the contents of fruit packages and we hereby instruct the board of directors of the Sutter Fruit-Growers' Association to accept no fruit for shipment that is not marked correctly.

The newly elected board of directors then met and organized by the election of B. F. Walton as chairman and H. P. Stabler as secretary, and adjourned.

Call for a Convention in Fresno County.

The following address has been sent out to all the fruit-growers in Fresno county in compliance with an action taken by the fruit-growers of the Scandinavian colony at their second meeting January 6, 1894:

To the Raisin and Fruit Growers of Fresno County, Cal.—In view of the last two years' experience with ruinous prices and commission packers, who seem to go hand in hand in the sale of our raisins and other fruits, we believe that it is absolutely impossible for us to go any further in the same direction and maintain the dignity of our manhood and womanhood, without bringing upon ourselves and families poverty and disgrace, and at the same time ruin upon our fair county. Hence we call upon our friends and neighbors who are engaged in the same business to call a meeting at the most suitable place in your respective school districts and colonies, to elect representative men and women to act as delegates at a county convention to be held at DeWitt hall, January 27th at 10 A. M., for the purpose of organizing a County Fruit Exchange, in connection with the State Exchange recently organized in San Francisco.

We earnestly entreat you to be prompt in action and earnest in purpose, because if we do not do something now our fate is sealed and we shall be plunged into the vortex of deeper ruin than we have ever experienced. Call your district and colony meetings at the very earliest possible date, that we may be ready for and represented at the county convention when held. We recommend that the school districts and colony assembly January 20th, and choose a chairman and secretary and three delegates to attend the county convention to be held at the DeWitt hall, Fresno, January 27th, 1894.

We also recommend that the chairman of these several school districts and colonies give a certificate stating who their delegates are.

A. HENNINGSSEN,
J. HINSBERGER,
W. HINSTRUP,
ADAM BEAVER,
CARROL GHENT,
Committee on Address.

THE DAIRY.

Mangel Wurzels.

TO THE EDITOR:—With the exception of hay, I consider the above variety of beets the most valuable crop a farmer can grow for his stock. It is very easily raised and harvested, and an enormous amount can be raised on a small piece of ground. In England they find it is the cheapest feed that can be raised for stock on high-priced land and claim they have raised from 60 to 80 tons to the acre. I have never weighed the product of even a small area in order to ascertain just the given amount an acre would produce, but I am fully satisfied that, with my past experience, I can easily raise 25 tons, without irrigation or a particle of manure. It is no doubt generally known by most farmers that these beets are excellent feed for milch cows, but I do not think that many of them are aware that

they are also very valuable for feeding to horses, sheep, hogs and chickens, and calves only a few weeks old are very fond of them.

For over eight years I planted my beet seeds about the last of April, as I was advised to do so by a man who was then raising the seed by the ton to sell. I found, however, that they stopped growing early in June as the ground became too dry for them, and in the fall I would not have over four or five tons to an acre, and but very few beets that would weigh over ten pounds. In 1891 I planted a short row the first week in January, and early in June I had quite a number that weighed over 30 pounds each. I am therefore fully satisfied by this experiment that on land which does not retain surface moisture after the middle of June, the best time to sow the seed is in January or very early in February, according to the season, latitude, etc. There is a little more labor in cultivating, hoeing and hand weeding them than there is when the seeds are sown later, but the great increase of the crop repays one for the extra amount of labor performed. There are thousands of acres of rolling hill land in this State that I have no doubt would produce large crops of these most valuable roots if the seeds were planted in the fall, as soon as the first rain puts the ground in a suitable condition. My reason for thinking so is as follows:

Last summer I raised about 200 pounds of these beet seeds. I was a little late in gathering them and found that some had rattled off. Soon after the first rain they sprouted and now (Dec. 30th) I have nice young plants with fine fibrous roots. I have transplanted some of them and I have no doubt but that they will do well.

I am now making ten pounds of butter a week from my cow that is fed entirely on alfalfa hay, and chopped beets with a little bran and middlings on them.

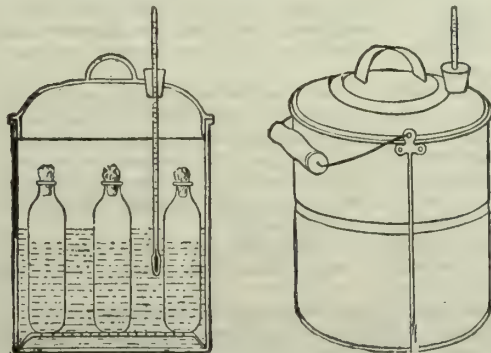
I am fully satisfied by past experiments that the beets are better for all kinds of stock if pulled, topped, dried and packed up under cover like stovewood, some weeks before feeding. If they are fed fresh from the ground in winter they are somewhat acrid and are apt to "scour" the stock. A ton or more can be pulled at a time in dry weather and the rest left for use as occasion requires. They can safely be left in the ground until they commence to make a second growth in early spring, when they should all be pulled, as they soon become tough and "woody."

I know many farmers who are now milking "raw-bone" cows, who have acres of unused land that would raise these beets to perfection, and some of these men are now buying poor hay and paying \$15 a ton for it. IRA W. ADAMS.
Bay State Garden, Callstoga.

Sterilization of Milk for Children.

At the request of the Secretary of Agriculture, the Chief of the Bureau of Animal Industry has furnished the following simple directions for the sterilization of milk:

The sterilization of milk for children, now quite extensively practiced in order to destroy the injurious germs which it may contain, can be satisfactorily accomplished with very simple apparatus. The vessel containing the milk, which may be the bottle from which it is to be used or any other suitable vessel, is placed inside of a larger vessel of metal, which contains the water. If a bottle, it is plugged with absorbent cotton, if this is at hand, or in its absence other clean cotton will answer. A small fruit jar, loosely covered may be used instead of a bottle. The requirements are simply that the interior vessel shall be raised about half an inch above the bottom of the other, and that the water shall reach nearly or quite as high as the milk. The apparatus is then heated on a range or stove until the water reaches a temperature of 155 degrees Fahrenheit, when it is removed from the heat and kept tightly covered for half an hour. The milk bottles are then taken out and kept in a cool place. The milk may be used any time within 24 hours. A temperature of 150 degrees maintained for half an hour is sufficient to destroy any germs likely to be present in the milk, and it is found in practice that raising the temperature to 155 degrees and then allowing it to stand in the heated water for half an hour insures the proper temperature for the required time. The tempera-



ture should not be raised above 155 degrees, otherwise the taste and quality of the milk will be impaired.

The simplest plan is to take a tin pail and invert a perforated tin pie plate in the bottom, or have made for it a removable false bottom perforated with holes and having legs half an inch high, to allow circulation of the water. The milk bottle is set on this false bottom, and sufficient water is put into the pail to reach the level of the surface of the milk in the bottle. A hole may be punched in the cover of the pail, a cork inserted, and a chemical thermometer put through the cork, so that the bulb dips into the water. The temperature can thus be watched without removing the cover. If preferred, an ordinary dairy thermometer may be used, and the temperature tested from time to time by removing the lid. This is very easily arranged, and is just as satisfactory as the patented apparatus sold for the same purpose. The accompanying illustrations show the form of apparatus described.

Use of Separators by Small Dairymen.

In a report which the *Country Gentleman* gives of the discussions at a farmers institute in Ohio, we find the following pertinent question and answers:

Will it pay the average farmer to buy a cream separator?

Mr. Dewey—I think it pays me to use one. I get more cream from my milk than I ever got before.

Mr. B. Smith—I use a separator and would not return to the old methods. Have never followed it with the Babcock test, but I believe it is skimming all the cream from my milk.

Mr. Dawley—After using the separator on my farm the past summer, it seems impossible to go long without it. I once thought I got the best possible results with the creamers, but when I got the Babcock test I found I was losing not less than three-tenths of one per cent of fat early in the season; later at least one-half of one per cent, and, when the ice gave out, much more; and I found I had fed enough butter fat to my calves within a few years to more than buy a separator; so I bought one, and a horse-power to run it. Now I am getting all the fat there is in the milk, and it is paying me well, although I have only a 14 cow dairy. The separator skim-milk is fed to calves directly from the machine, and, although the fat is practically all taken out of it, the calves grow rapidly and are healthy, and I am satisfied I can grow better calves from pure, sweet separator skim-milk fed warm from the open pans or creamers, in which is a good per cent of fat.

Mr. Van Alstyne—Objection has been raised against the separator, claims having been made by some creamer men that butter made from separator cream is not as good as that from cream raised in open pans or creamers. I know a better quality can be produced from separator cream than from any other. Any way, such is my experience after using both open pans and creamers. The objection is fast disappearing, and will shortly cease to be heard. If you are in need of a cream-raising device and have ten or more good cows, by all means buy the separator. It will produce more cream, better and purer cream, and will hasten the voyage of the butter from the udder to the shipping package from 12 to 24 hours.

FLORIST AND GARDENER.

Plant Collecting in California.

Of all the many collecting trips I have taken, none so impressed itself upon my memory as one to the high Sierras some years ago. It was in early August of a season when the snowfall was heavy and late in melting. August is a disagreeable month in the summer in California, the most so of any in the year, and in that great valley which, hemmed in by the Coast Range on one side and the towering Sierra Nevada on the other, runs north and south 500 miles, it is especially oppressive. Then a pall of smoke hangs over, limiting the view. The heat reflected from grain field or summer-fallow causes constant mirages. They come in the image of water, ponds, lakes or rivers, or distant real objects, making houses or haystacks look as tall as steeples, or seem as if they stood in the air. One hundred and five degrees is not an uncommon midday heat—a dry, blistering heat.

Leaving Sacramento on a hot afternoon, a dry plain is passed through, then a more broken country, whose hillsides are covered with orchards and vineyards, while in uncleared lands are low, scrubby oaks or round-headed Digger pines with gray needles. The grades get steeper, the country rugged. Immense canyons and slopes covered with immense pines are then passed. Then comes darkness. Already the air is chilly and fires are lighted, and, as through the early hours of the night the train moves slowly along, only glimpses are seen through the snowsheds of rugged, rocky country, with forests and deep canyons. Some time after midnight my destination was reached—The Summit, in title and fact.

The coming of morning unveiled a new and grand scene, a strange contrast to the view of the previous day. The air so clear that distance is almost annihilated; all around great peaks, snow-covered, some of granite, others of tough lava in a castellated form; others still lower with open pine forests up to their tops. Snow fields and snow masses in every direction, and in the cold, sharp morning air everywhere the sound of waters—a sound you cannot escape from, for everywhere are rills, rivulets, springs, brooks and torrents formed by melting snows.

A short distance from the station a tunnel penetrates a granite mass, and when it comes out on the other side the descent is commenced into the Great Basin. There it was spring. In the frequent meadows flowers of every sort bloomed; even snow plants were to be seen in bloom at the edge of the snow masses, a thick, fleshy plant like Indian pine, but coral red and translucent. Along the streams were *Lilium parvum* in bloom, very much like the Eastern *L. Candense*. The backbone of the Sierras is here a plateau of granite a half-mile wide or so, with vast bare surfaces of rock in some places, while in others were depressions filled with water and margined with a dense growth of the scraggy pine called tamarack. Some were mere pools, while others were deep, rockbound lakes, with often masses of snow on the rocky slopes and rivulets descending therefrom to the lakes in cascades, or maybe watering tiny protected meadows which were perfect gardens of lilies, violets and low purple asters. For fully five miles of this plateau there is a constant succession of these lovely little lakes.

A more inviting field for the collector or a more invigorating change for the summer-worn worker could not be imagined. My search took me in every direction, each day a new revelation of beauty. One day I came to a point overlooking a little vale. Great granite cliffs, hemmed in on every side but the outlet, which was down a

cascade. Down a rocky stairway I clambered and found a very vale of lilies. There were *Lilium parvum* by the thousands, all in bloom. I have never found another such home for them. One of the lakelets was bordered by a marsh, and here were fresh-water sponges, while along the mossy edges grew a pretty creeping white violet. But the point for sightseers in this region was Castle Peak, and on the side of Castle Peak, a preceding collector had written to me, a lovely primrose grew, peculiar to these high altitudes. So one morning I took a lunch, my light pick and a sack and started out alone, as I always was. I took a general course and came to the foot of the peak. The soil is loose and sandy, and it is rather hard walking. There are few trees or shrubs except scattering sage or a few wild cherries and willows down the stream courses. The snow had only been off a short time, and flowers seemed to spring into blossom. It was high on the south slope of Castle Peak that I saw *Calochortus Leichlinii*, one of the Mariposa tulips, which had blossomed so quickly that the open cup stood on a basin of sand. The point of the bud had penetrated the sand and commenced opening.

A hard walk, which at these altitudes only a strong-lunged person could take, brought me to a great snow-field near the top. The snow melting on the rocks above had worked beneath, and torrents poured out of tunnels on the lower ridge, and on the top of the snow-field it was beaten by the hoofs of thousands of sheep, for these high regions are filled with flocks driven upward as the snow recedes.

Crossing to the north side of the mountain I saw below me a garden, and by dint of bracing myself in a crevice in the rock, managed to descend to it—and such a garden as it was! Perhaps half an acre of open land perfectly fenced by cliffs above. Below and at the sides the snow stood in a wall, and stretched away in steep slopes, so steep and the snow so hard that no animal could have kept a footing, and it was fully half a mile down to where, near the canyon, pine trees stood covered to nearly their top in the snowdrift. In my garden were great anemones by the thousands, growing from a stout perennial root to a height of nearly two feet. On the warm, rocky slope at the upper edge were the primroses I sought. The leaves were thick and fleshy, and the stems prostrate and rooting all along. The plant forms dense masses, entirely covering the rocks, and throwing up slender stalks with a single very lovely red flower. It is unfortunate that so far it has never been successfully grown in cultivation. This garden was truly a thing of beauty, and has lived fresh in my memory. Leaving it, I essayed to cross the snowfield by another route. It was necessary to anchor myself by driving my pick in the snow till I could by driving my toes in, make a foothold—and after a half-mile of such working, my back blistered by the hot sun, my feet chilled, tired out, I reached the open rocks above—not too tired, however, to climb to the highest point of Castle Peak, using the points of lava for a ladder, and at length standing on a flat rock platform at the top. And such a view! East, mountain after mountain arose across Nevada, red, barren and forbidding; north and south for hundreds of miles snow-covered peaks of the Sierra Nevada; westward, the peaks of the Coast Range rose across a huge, obscured gulf at a distance of fully 200 miles. The great valleys of the Sacramento and San Joaquin could be traced for hundreds of miles, not clearly, but here and there, where the haze and smoke were thinner, grain fields or woods could be seen. Near at hand no haze or smoke obscured the view, and below were 14 lakes, Donner and Tahoe the largest, while meadow, forest, peak and rocky plateau seemed very near in the crystal air. It was a view to forever live in one's memory.—Carl Purdy in the Mayflower.

The Rose Season of 1893.

A paper read at the State Floral Society by H. B. McGowan of Oakland.

The year 1893 has been a remarkable one in many respects, and it may be interesting to take a retrospective view from our vantage-ground of 1894. There was a remarkably cold summer, likewise a remarkably warm fall. To the student with his books and his studies and to the clerk at his desk this is of small moment, but to the members of the State Floral Society of California this is of vast interest. Temperature is one of the first agencies of horticulture; 'tis true we cannot say to the winds "peace, be still," neither can we force the sun to shine. But we can profit much if we take note of the effect of both. It is not the object of this paper to note the effect of the past season on things in general in the garden, although it might be none the less instructive. I will confine my remarks to the rose garden, and only a few varieties will I notice.

It will be remembered by the members of this society how late the rose season came on. It will also be remembered what a fine showing it made, and how reluctantly yet sharply it went out. It may be well to note here that the following observations on the several varieties of roses and the several remarks upon the rose season of 1893 are made upon roses which did not receive any water since the early summer rains.

One remarkable feature of the past season that I could not overlook was that, although the roses grew more—that is, more continually—a great many varieties did not flower so freely as they did the two seasons before this. On the other hand, some varieties which did not bloom so freely the two previous summers bloomed continually all this past summer and fall. This is the more remarkable as the varieties are not generally classed as ever-blooming roses. The varieties are as follows in order of freedom of bloom: Paul Neyron, William Penn, Ulrich Brunner, Duke of Connaught, Magna Charta, Jules Margotten, Captain Christy and Her Majesty. These hybrid perpetual roses were more constant in bloom than I have heretofore seen them. Even Her Majesty, which as a rule is a very poor bloomer, did exceedingly well. The tea roses with me did not do much. I had some very fine blooms, but not many of them. Papa Gontier was very fine. I do not remember

seeing such fine blooms of this fine rose throughout the past few summers.

From my observations the past summer, I was decidedly in favor of the hybrid perpetual rose, and it is with pleasure that I note it. Nothing, in my opinion, in the rose garden can compare either for fragrance or richness of color with the hybrids, and I hope the day is not far distant when more hybrids will be planted in California.

I have long been of the opinion that the climate in and around San Francisco was more favorable for the hybrid than the tea roses. I have noticed some very fine hybrid roses near the walk south of the superintendent's cottage in Golden Gate Park in the past few summers. There have I seen Her Majesty. If not perfection, it must be very, very near it; and when this rose is fine, it is grand.

It will be noticed by a close observer of the effect of climate upon the rose that long, full buds require more warmth to open well and fine than do more thin or semi-double ones, as for instance Catherine Mermet and Papa Gontier. The former, if the weather is cool, does not come out well, while the latter takes on a deeper color and is at its best. This is more noticeable in the tea class of roses; but I think it can be put down as a general rule in both classes of roses that long and full buds require more heat, while short buds which open flat require less.

The fall of 1893 was remarkable for scarcity of bloom, notwithstanding the fact that we had what many remarked was a fall which was more summer-like than the summer just past. The reason I give for this scarcity was the continual growth of the plants, which, by reason of the cool summer, kept on growing. I have always noticed that if the plants do not have a season of rest, either for a short or long period in summer—and that generally takes place throughout August or September—we have a scarcity of roses in the fall. The exception this year with me were the roses already mentioned. The observations of other rose-growers this past season might be of great value to rose-planters as a means of knowing what varieties to plant in the various climates of California, as I think this has been a subject lost sight of in the great scramble for variety.

Cannas in California.

How I wish that those who admire cannas (and who does not?) could see them as they have grown here this season! About a week ago, after a few days of bright, cool weather, they were the best that they have been this year—every spike a perfect bouquet. To-day, Christmas, they are still gay, but the weather has been darker for a few days, and not so many blooms are open.

Perhaps a few notes on the newer varieties will not be out of place.

I have them growing on a sandy soil, naturally poor, but slightly enriched in the spring, and the plants were well mulched with manure in midsummer.

Star of '91 is not so new, of course, but it has been rather popular. It is of good habit and color, but the flowers won't open well for me.

Admiral Gervais is very dwarf and quite pretty, but the flower is quite small.

Marquis Arthur de l'Aigle is good habit and quite pretty, but small.

Alphonse Bouvier is of a gorgeous color, but rather tall—six feet—and the flowers lack substance and don't open well.

Maurice Mussy has the largest flower of all and nice color, but petals are rather narrow and very limp.

Nardy Pere is very good, but does not have enough blossoms open at a time.

Chas. Henderson, I think, is going to be away ahead of Bouvier, being much earlier, a better bloomer, and, above all, of a much better habit, only about three and one-half feet high.

Mme. Crozy is still to the front, only it is a little too tall—four and one-half to five and one-half feet—and in warm weather loses nearly all its beautiful golden border.

Egandale would be about perfect in every way if the flower was a little larger. The color is not pleasing to all, but it is bright and showy, and every spike is full and well rounded, and the rich, bronzy leaves are very handsome.

J. D. Cabos is a handsome thing if only the flowers would retain their color. It is rather tall, though, and too rambling in growth.

Among the yellows I had counted very much on Captain Suzzoni, but, I must confess, to a good deal of disappointment, when the stalks began growing up and up until they stand seven feet high. Being so tall it seems top-heavy, and is inclined to lop in all directions. The color is good, but the ends of most of the petals are notched and ragged, and many flowers don't open well.

Countess l'Etoile is a pretty thing, but petals are narrow. Nellie Bowden, in my opinion, has nothing to recommend it but its color.

Florence Vaughan has the finest shaped flowers and the best substance of anything I have yet seen, but has too much red and is entirely too tall—six to six and one-half feet.

Hermosa, a California seedling yellow, is better color and good flower, and has a habit of growth and flower spike that answers the description of the ideal canna. Very compact, and three to four feet high.

Cannas don't seem to take very well here yet, but I think mostly because so few have seen the best ones.

They are certainly a grand sight when grown in masses of one color, and in this country are especially valuable because in bloom so long. Most of mine have been a blaze of color since June, and bid fair to continue good for some time yet.—F. R., in Florists' Exchange.

Agricultural Directors.

Governor Markham has appointed and commissioned the following Agricultural Directors: W. H. Aiken, for District No. 14, Santa Cruz county; A. McAllister and E. W. Steele, for San Luis Obispo county.

AGRICULTURAL ENGINEER.

Road Legislation in the United States.

The investigation into road construction and management in the United States by the U. S. Agricultural Department, and under Gen. Roy Stone as special agent, is said to be making good progress. State geologists are beginning to supply information as to materials available for road construction, and 50 engineers of railway companies have sent in reports. This material is now being tabulated and a map is in preparation which is to show the location and cost of the best available road-making material throughout the country. A bulletin is soon to be issued outlining the new road laws of 14 States.

General Stone will say that road legislation is proceeding on ten distinct lines, ranging from more rigid operation of the old system to the direct building of State roads. Tennessee gives the county courts full power and direct control over roads and eliminates local politics and prevailing easy-going methods. The courts classify the roads, establish districts, appoint commissioners and assess road taxes. Vermont, New Hampshire, North Dakota and Oregon increase tax levies for roads. The latter State allows county courts to levy a special tax of 50 cents on the \$100 and \$2 per head for a county road fund. New Jersey absolutely abolishes the payment of road taxes in labor and the abolition is almost absolute in Wisconsin. In Oregon, Indiana and by special acts in Ohio, local assessment applies to construction for a three-mile limit on each side of the road. In Oregon the county may assume half the cost, and in Ohio a large share is assessed upon the county. In Pennsylvania and New Jersey much work has been done by townships and by township bonds. The issue of county bonds is provided for in New York, New Jersey, Indiana, Michigan and Washington; but in the two latter States a popular vote is required to authorize the issue.

State highway commissions have been created in Massachusetts, Vermont, Pennsylvania, Ohio, Michigan and several other States. Massachusetts has the only permanent body of this character charged with important duties connected with actual road construction; the other commissions can only inquire into existing conditions and recommend methods for improvement. New York is experimenting with convict labor on roads near the Clinton prison, and Tennessee law makes available for this purpose all prisoners confined in county jails or workhouses.

New Jersey is probably the only State giving direct aid to road-building. The report says: "This aid is limited to one-third of the roads built by the counties and to the sum of \$75,000 per annum. The highway commission of Pennsylvania has reported a bill for State aid to the amount of \$1,000,000 per annum to be distributed among townships in proportion to the road tax paid by them. The townships, according to this bill, must set aside 25 per cent of their tax for making permanent highways. Co-operative road-building, as provided for in New Jersey, has been very successful. Abutting land-owners pay one-tenth of the cost, the State one-third, the county the remainder, by sale of bonds. Under this law, ten miles of road were built in 1892, 25 in 1893, and 64 are applied for by land-owners for 1894.

The data already gathered shows that new roads are constructing in many parts of the country and that increased knowledge and skill, improved machinery and methods and extended practical experience are rapidly lessening the cost of good roads. Civil Engineer Harrison of Asbury Park, N. J., is authority for the statement that, while three or four years ago the cost of road-building was \$10,000 per mile, it was last year \$3500 a mile. Prof. J. B. Hunnicutt, of the University of Georgia, in response to an inquiry from the bureau, states that the cost of good, hard roads recently built in Georgia, providing for a track of stone and one of earth, was \$1200 a mile. Supervisor Chapin of Canandaigua, N. Y., in a letter to General Stone, reports that ten miles of a single-track stone road, with an earth track each side, was built in that town for \$700 a mile. Active interest in the movement for better roads is shown by the railroads generally. Special or reduced rates are offered by many railroads, and a tabulated statement of the various concessions in shipment rates by a large number of companies has been prepared.

Farm Wages.

TO THE EDITOR:—In your issue of Nov. 4, 1893, appears an article from the Oroville Register headed "Farm Wages Must Come Down," which I have read with much interest, and looked for comments thereon in every succeeding issue of the PRESS. The Register is to be complimented for the courage its editor displays in his attack on high farm wages, and I regret very much that at the end of his article he expresses fear of meeting and discussing this question and agreeing to pay only certain rates, because all the newspapers in the State would howl against us.

There is an abundance of labor now, and, following the laws of supply and demand, it should be cheaper, and it really is. As far as I am concerned, general meetings as mentioned by the Register are not necessary, as I can get all the labor I can make use of in my vineyard at 75 cents per day and board for pruners, etc., and brush-pickers for much less. A meeting of vineyardists to discuss ways and means of reducing the cost of raising grapes and making wine, however, would be of much benefit to the grower, and I think that in such a meeting it would be shown that labor to-day can be had at fully 25 per cent less than a year ago. All that is necessary is to give an employment agent in San Francisco an order for the help wanted at certain rates and there will be a hundred applicants to choose from for every man needed.

WM. WEHNER.

Evergreen, Santa Clara Co.

SHEEP AND WOOL.

The Wool-Growers' Convention.

The convention of wool-growers and dealers held in this city last week to protest against changes as to wool and dressed meats, proposed by the Wilson Tariff bill, was a large and notable gathering. It represented all interests related to the sheep industries, all parts of the State and every phase of political sentiment. It was strictly a business meeting in which all thought of politics was put aside. Among those present were: B. P. Flint, Donald Chisholm, J. A. Freeman, Thomas Richardson, Daniel Donovan, J. T. Lampkin, James Davidson, W. H. Ballinger, F. L. Orcutt, S. T. Gage, E. H. Tryon, J. H. Glyde, George Champlin, James R. Hebborn, Thomas McConnell, J. R. Hall, E. S. Holden, J. E. Shoobert, H. W. Woodward, Charles W. Hill, T. H. Smith, W. W. Davis, T. T. O'Brien, Jacob Rosenberg, L. Breslaur, George S. Gilbert, T. E. Trampleasure, Jacob Wollner, Amiel Hockheimer, Henry Marx, E. B. Willcox, P. D. Jewett, P. H. Cahill, Julius Platshek, H. W. McDaniel, H. J. Ostrander, George T. Davis, Barker Davis, M. S. Koshland, Charles H. Abbott, J. E. Bell, James P. Hulme, A. C. Schlessinger, Isaac Harris, Alfred Holman (editor of the RURAL PRESS), A. Bissinger, A. Legallet, W. B. Lee, E. H. Ward, T. F. Maguire, Thomas Cotter, P. J. O'Rourke, Frank B. Findley, J. H. Sandford, P. H. Cahill, Joseph Gibson, Charles Howard, A. Dempster, S. Daniels, C. Clifton, J. Lawler, Jr., George Sattler, William G. Eaton, John Carmody, M. W. Haley, J. Maguire, Francis X. Foley, Timothy McMahon, George Dickie, J. T. McMahon.

Organization.—The convention was called to order by Mr. Jacob Rosenberg, president of the Wool Growers and Dealers' Protective Union; Hon. Barclay Henley was chosen chairman, and F. T. Moody secretary. The following vice-presidents were elected:

Alameda—John Flanagan, Professor E. W. Hilgard.
Amador—A. Whittle, R. S. Pardoe.
Butte—John Bidwell, John Crouch.
Calaveras—R. B. Randall, George W. Hayes.
Colusa—L. F. Moulton, E. M. Manx.
El Dorado—H. C. Barton, R. M. Day.
Fresno—A. H. Blasingame, W. J. Dickie.
Glenn—I. W. Bromwell, G. W. Murdock.
Humboldt—H. W. McClellan, Robert Porter.
Inyo—Mark Matterson, H. W. Bellows.
Kern—Captain J. P. Robinson, Sol Jewett.
Lake—E. L. Maze, R. T. Polk.
Lassen—J. A. Gilman, D. C. Wheeler.
Los Angeles—K. Cohn, L. Bixby.
Madera—J. F. Daulton, F. G. Goulart.
Mariposa—R. A. Prouty, A. G. Black.
Mendocino—Judge R. McGarvey, E. M. Hiatt.
Merced—C. C. Smith, J. F. Chamberlain.
Modoc—W. N. Scott, P. L. Flanagan.
Monterey—David Jacks, J. A. Trescony.
Mono—Reuben Terry, Fred Hardy.
Napa—B. F. Holden, P. D. Grigsby.
Placer—J. Parker Whitney, J. W. Kaseberg.
Sacramento—Thomas McConnell, J. G. Glyde.
San Benito—E. T. Donnelly, Dr. Thomas Flint.
San Diego—W. W. Stewart, P. Ikinque.
San Francisco—Justinian Caire, S. T. Gage, A. Legalette.
San Joaquin—L. U. Shippee, J. D. Prather.
San Luis Obispo—R. E. Jack, Henry Schaefer.
Santa Barbara—E. Elliott, Thomas Dibblee.
Santa Clara—R. F. Peckham, J. Eberhard.
Santa Cruz—George K. Porter.
Siskiyou—J. F. Bloomingcamp, J. M. Walbridge.
Solano—J. B. Hoyt, Dennis Laughlin.
Sonoma—H. Meecham, H. E. Fairbanks.
Stanislaus—John Dunne, John Russell.
Sutter—J. F. Brockman, Sumner Paine.
Tehama—J. S. Cone, E. H. Ward.
Tulare—Thomas McIntyre, Pat Cunningham.
Ventura—Thomas R. Bard, J. R. Willoughby.
Yolo—G. W. Scott.
Yuba—D. E. Knight, J. M. C. Jasper.

Address by Hon. Barclay Henley.—Upon taking the chair Mr. Henley spoke as follows:

This is a convention of earnest, thoughtful and conscientious men, who, at great personal inconvenience, have assembled together for a purpose that cannot be too highly commended, and the success of which constitutes a most important factor in the prosperity of this State. We have now pending in the House of Representatives of the Federal Congress a tariff measure called the Wilson bill, which, if it becomes a law, in the opinion of those most interested, will bring utter destruction to one of the most important industries in California—sheep husbandry and wool-growing. All engaged in that business are of the same opinion in regard to the effect of free-listing wool. It is not even a subject of debate among the growers in this day of generation. It is the college professor, the doctrinaire, the theorist on one side and the men who have grappled with the problem all their lives and thought of nothing else upon the other.

The industry which is being trifled with by the Ways and Means Committee of Congress and whose existence is remorselessly threatened represents, exclusive of manufactures in the United States, about 43,000,000 sheep, employing directly and indirectly 1,200,000 persons and a capital of \$125,000,000. The value of the annual wool clip of California, say in the year 1892, should be about \$5,000,000, being the value of an annual clip of 35,000,000 pounds of wool. That means that that much money flows into the pockets of the people of this State every year from the sales of wool, aside from what they get from mutton. Assume that the industry perishes, that much money would be missing every year from the resources of the people of this State. But it has been urged that while the production of wool will cease we will turn our attention to mutton and to the production of a different kind of sheep with its compensatory advantage. Unfortunately the showing in that regard is worse than in reference to wool. The progress of science has devised a means by which, by the use of refrigerators, frozen meats may be shipped from Australia and South America all over the world. They have built ships whose carrying capacity exceeds 50,000 carcasses of mutton, which are now plying between Australia and Great Britain; and it must be borne in mind that mutton is free-listed under the Wilson bill as well as wool. Therefore, if the bill becomes a law, the inevitable doom of both mutton and wool is sealed; but I imagine, if you should speak to one of our free-trading friends on the Ways and Means Committee upon that subject, the chances are he would rush wildly off for comfort to Adam Smith, Ricardo or one of the political economists from whom they have drawn inspiration upon this subject. And it is one of the marvels that attends upon these matters that these theorists will not

bring themselves face to face with the actual, hard, close details of the various businesses whose fate they want to control.

Your dreamer and your free-trader, always up in the regions supernatural where ordinary mortals cannot ascend, think that the sum of human happiness is obtained by cheapness. I don't think so. I think that, unless commodities can be sold at living rates in a community, the inevitable result must be a destructive disturbance to the industries of the country and misery. According to the cheap idea, the wool-grower and the wheat-raiser and the producers of everything in this State now, the price of which is below the cost of producing, should be in a state of inexpressible beatitude. Is the California farmer to-day a happy man? Never before were the clothes that he wears upon his back so cheap in the history of the country; never before was the iron which enters into the construction of his utensils so cheap; all things, in fact, are cheap which he eats, wears or in any respect uses, but the trouble is that, cheap as they are, he has nothing to buy with, and therefore the boon of cheapness is a mockery to him. When you say to a pauper upon the street, who solicits your alms, "Look into that store and see how cheap everything is," you simply mock and insult him.

During an inconspicuous, but, as I believe, faithful, term that I served in the Federal Congress, I was one of the followers of Samuel J. Randall, and would be did he live to-day; and I here now still avow my belief in the soundness of a tariff for revenue, with incidental protection. I believe myself that an unquestioning allegiance to the edict of a party has resulted in more detriment to the country than anything that I can now recall; and you see now in Washington the pitiable and lamentable spectacle of a caucus being called by the Democrats in the House of Representatives, the sole and avowed purpose of which is to constrain Representatives to forego or rather betray the interests of their constituents, whose servants they are, and right or wrong to vote for the Wilson bill. I spit upon and despise any construction of the tenets of a political faith that upholds such party discipline, as it is called. It is said that free wool has been decreed heretofore by the Democracy. I deny it, and declare that, were that issue made in California, it would meet with overwhelming defeat, as it recently did in Ohio, when Governor McKinley was elected by a majority that makes us dizzy to think about. He was elected not because he was a Republican, not because he was a better man than his opponent, O'Neil, not because of any superiority, mentally or morally, over his adversary, but because the people of the great State of Ohio felt that there was an opportunity for them to say to the people of the United States that they wanted a man whose character and political career was absolute guarantee of the maintenance and everlasting upholding of the industries of America.

The Resolutions.—The Committee on Resolutions, composed of Thos. McConnell, Alfred Holman (editor of the RURAL PRESS), J. H. Glyde, B. P. Flint, S. E. Holden, D. E. Knight, Isaac R. Hall, Prof. E. W. Hilgard, J. Rosenberg, Atwater M. Wardwell, G. G. Kimball, F. L. Orcutt, N. Manasse, H. J. Ostrander, A. F. Pedreira, E. Bennett, brought in the following preamble and resolutions which were adopted by unanimous vote:

WHEREAS, It is proposed in the Congress of the United States to modify the existing tariff laws to admit wool and dressed meats free of duty; and, whereas, it is proposed to make sweeping reductions in the duties on woolen manufactures; and, whereas, 30,000 citizens of California are employed directly in the production and handling of wool and mutton sheep and in woolen manufacture; and, whereas, the State of California contains approximately 4,500,000 sheep, producing annually 35,000,000 pounds of wool, and has heretofore profitably employed as sheep ranges 10,000,000 acres of land, otherwise waste and of little value; and, whereas, in this industry an aggregate capital of \$100,000,000 is invested in this State; and, whereas, it is our judgment, after full review of all the circumstances and conditions, that the proposed tariff changes, if carried into effect, would inevitably imply the destruction of the sheep industries of our State; that it would wipe out the capital employed in them and thus impoverish a multitude of our people; that it would drive a worthy element of population to seek other branches of employment now overcrowded, with the result of filling the highways, causing beggary and widespread sufferings; and, whereas, we believe that we should not consume the products of foreign labor, leaving our own laborers in idleness, but that we should protect them and enable them to receive proper and fair compensation for that labor, consuming in our own country their products. Whereas, the mere prospect of the proposed tariff changes has prostrated our business, scaled down the value of our property and made alarm and apprehension of disaster widespread. Whereas, it is a fact established by experience that at the prices for wool now prevailing in the foreign markets our farmers cannot continue the business of wool growing without absolute yearly loss, in proof of which we state that at the present time a large proportion of the sheep remain unshorn and the shearers have even declined to accept the clip as compensation for shearing. During the past year, owing to the impending threat of free wool and radical reductions in the duties on woolen goods, the prices of domestic wools of all descriptions have fallen from 30 per cent to 50 per cent below the prices that prevailed a year ago. Even at these figures there has been little demand for wool and many farmers have on hand this season's clip, which at this time last year were being rapidly converted into goods by mills that now stand idle. In the United States the value of sheep has depreciated over \$50,000,000; of this California's share is \$5,000,000. Therefore, be it

Resolved, That we, the wool and mutton growers and the woolen manufacturers of California, in convention assembled, do protest in the most positive and solemn spirit against the admission into the United States of wool and dressed meats, and against the proposed reduction in the duties on woolen goods.

That the good faith of the Congress of the United States requires continuance of the protective policy as to wool, dressed meats and manufactured woolens.

That the sentiment of the business element of this State, regardless of partisan affiliations, heartily favors the retention of tariff duties on wool, dressed meats and woolen goods, and stands with us in protesting against the enactment of the Wilson bill in so far as it relates to the changes above named.

That the first duty of our representatives in Congress is to the interests of California; that to this duty they should subordinate partisan motives; and we call upon them, in the name of the people of California, to work and vote against the proposed changes, in whatever form or whatever relationship they may appear.

We protest against and denounce as false and absurd the claim persistently urged by advocates of free trade in wool that American wools cannot be manufactured successfully and profitably into the form of clothing, except in combination with foreign wools, and we deny that the importation of foreign wools is essential or even desirable as a means of consuming our domestic wool product, there being no class of foreign wools imported into this country that cannot be produced by the wool-growers of the United States.

We solemnly declare it to be our profound conviction that the principle of protection by tariff duties is essential to the independence and comfort of the American people, to the promotion of liberal and wholesome standards of living and of education, and to the fullness and stability of our national life, and the only barrier that prevents American children from being reduced to the level of the pauper nations of the earth.

General Discussion.—Following these formal proceedings there was a general interchange of opinions by leading wool men. Mr. Thos. McConnell declared our wools to be as good as any imported wools. The only reason, he said, why the American wool is not considered as good as some other wool is because it is not put in such good condition by artificial means.

Judge Peckham of San Jose said that he was a woolen

manufacturer. The goods for the millions of Americans be made of Californian and Oregonian wools. The blankets are made from those wools. He did not know of any mills here which manufacture goods from imported wool. The objection that the Pacific Coast manufacturers meet with is that their products are too good for the trade. They wear too long. When the manufacturers seek to sell their goods they are told that what is wanted are stuffs that will wear out sooner. The goods of very fine texture cannot be manufactured from the wools of this coast, but the people of the United States can be clothed with the wool product of this country, fine wools being produced in the Eastern States. These wools, with some importations from Australia when needed, are all that manufacturers require. The English and French, who are well clothed in wools, use American wool. If the duty is taken from wool and the business of raising that product is partially destroyed, the time will come when the price of wool will go so high, on account of the small supply, that only the rich man can afford to wear a suit of woolen clothes.

Mr. Hebborn of the State Board of Equalization said that he had transferred his wool raising to Texas. He has his last year's clip on hand yet. If the duty is taken off he will go out of the business. He is now on an official tour. He thought that in assessing sheep this year the depreciation of the industry should be taken into consideration.

Mr. McMahon of Humboldt said that Congress should be asked to exempt all other American products as well as wool from the operation of the Wilson bill. A protest should be made against interference with the M. Kinley bill.

Professor Hilgard said that an English expert testified before a Congressional committee lately that he could find no kind of woolen goods in which the English manufacturer excels the American. The fruit interests, he added, are so badly threatened by the Wilson bill that he did not see how any representative from California can consent to the adoption of the fruit or the wool feature.

Judge Peckham added: "In the streets of San Francisco woolen ready-made clothing such as the millions of America wear can be bought cheaper than in London. But there are Americans who want something foreign and who insist on getting clothing from abroad. Possibly in expensive fabrics they can save a little money on the foreign garments when bought abroad, but the cheaper clothing that the millions wear can be purchased at home for less money."

S. E. Holden, president of the woolen mills at Napa, exhibited a fine overcoat which was sold in this city recently for \$16.50. It was made and lined well, the lining as well as the outer cloth being of wool. He said that the wool-grower is as much entitled to protection as the manufacturer. Mr. Holden pronounced the proposition in the Wilson bill to raise revenue from an income tax unpatriotic and unbusinesslike. It is preposterous to think that taxes will be systematically obtained by reaching at incomes.

Mr. Ostrander of Merced, whose two grandfathers fought in the Revolutionary war, whose father fought in the war of 1812, and who himself kept the Union flag flying in Merced county every day during the Civil war, said that poverty will surely attend a removal of protective duties.

Isaac Harris said that the importance of the wool business is not appreciated by the general public. When people hear that the Wilson bill threatens the sheep industry they do not understand what the declaration means. A loss of \$1 a head on 4,000,000 sheep and of \$2,000,000 on the clip means that much loss to the State, and not merely to wool-growers. The wool-pullers employ 2000 men. The Wilson bill will destroy their industry. The wool-pullers here will find it advantageous to locate at Havre, where they can get laborers for from 60 to 80 cents a day. They can get pelts from Butchertown here, do the work at Havre, and ship their products to New York and Boston at a greater profit than they could by doing the work here if the duty should be removed. The firm of which Mr. Harris is a member has bought a great deal of wool in the district represented by Congressman Geary, "who says that wine, being a luxury, should be protected, but wool should not be," he remarked.

Chairman Henley said that an opponent of the Mills and Wilson bills cannot be found in the English list of newspapers. The reason why they favor such legislation for the United States is that they want American coin. Mr. Henley remarked that he was not a Cleveland Democrat, but he is a Jeffersonian and Jacksonian Democrat. Consequently he could stand whatever criticism might be uttered of the present policy of the Democratic powers that be. Jackson was in favor of a protective system for American labor when President. The convention adjourned to the call of the chair.

A meeting was then held by the executive committee, composed of John E. Shoobert, Thomas Denigan, J. Rosenberg, F. P. McLennan, James P. Hulme, Isaac R. Hall, J. L. Moody, C. S. Moses, Thomas McConnell, T. T. McMahon, R. F. Peckham, T. H. Glide, P. D. Jewett, H. Meecham and E. H. Ward. J. L. Moody was chosen chairman of the committee.

Special Agent at Washington.—Hon. Thos. McConnell of Elk Grove (Sacramento county), who has large interests in sheep and sheep lands in California, Oregon and Nevada, was selected to go to Washington to confer with our representatives in Congress and personally urge our interests. Mr. McConnell will start on about the 16th inst. He has already a large acquaintance among public men, and will carry with him letters to others whom it will be important for him to know.

It is expected that the chief fight will be made in the Senate. The House seems to be completely under the control of the free traders, and there is little doubt that the bill will go through. In the Senate, however, it will meet stern and determined opposition. Senator Perkins is outspoken against the measure, but it is believed that Senator White will support it. His speeches on the stump in this State during the Presidential campaign were warm for tariff reform (which means absolute free trade so far as wool is concerned), and there is no reason to believe that he has changed his mind since that time.

THE HOME CIRCLE.

The Weather.

Us farmers in the country, as seasons go and come,
Is purty much like other folks—we're apt to grumble
some!
The spring's too back'ard for us er too for'ard—any
one—
We'll jaw about it anyhow and have our way er
none!
The thaw's set in too suddent er the frost's staid in
the soil
Too long to give the wheat a chance, and crops is
bound to spoil!
The weather's either most too mild er too outrageous
rough,
And altogether too much rain er not half rain
enough!

Now what I'd like and what you'd like is plain
enough to see;
It's jest to have old Providence drop round on you
and me
And ast us what our views is first regardin' shine er
rain
And post 'em when to shet er off er let er on again!
And yit I'd ruther, after all—considerin' other
chores
I got on hands, a-tendin' both to my affairs and
yours—
I'd ruther miss the blame I'd git a-rulin' things up
there
And spend my extry time in praise and gratitude
and prayer.

—James Whitcomb Riley.

Count Sorrow a Gain.

It is easy, you know, it is easy,
When the skies of our life are clear,
To whistle a song as we journey along,
And to walk with a heart of cheer.
It is easy, you know, it is easy
To sing when the weather is fair,
And to feel that the day will be pleasant alway,
Unhaunted by trouble and care.

But it's harder, ah yes, it is harder
To walk through the storm-beaten night,
When the soul of man quails as the dreary wind
wails,
And there's nowhere a glimmer of light,
It is harder, dear God, it is harder
To stand 'neath the burden we bear,
When we see not the end where our weary feet
tend,
And our heart is o'erladen with care.

It is harder, ah me, it is harder,
Yet I think, if we manfully bear,
That the spirit will grow 'neath its burden of woe
Till it's wholly perfected and fair;
And the one who plods on through the tempest,
With a smile for the fierce-beating rain,
Though he misses the cheer of a pleasant way
here,
In the end may count sorrow a gain.

—Stockton Mail.

The Missing Pages.

PAPER, sir? Something to
read in the train, ma'am?
—*Times, Herald, Sun.*
All the magazines?"

But the people hurried past
John's little stand into the sta-
tion, as they had done all the
morning. Only two papers
sold and here was noon! Profit two cents.
On sunny days his sales were very brisk;
but it was drizzling. The thick air was full
of falling soot and nobody cared to stop to
buy.

"No wonder they want to hurry out of
this horrible place!" muttered John, look-
ing about at the wet, dingy houses, the
pools of black mud through which the horses
tramped, and clouds of smoke rolling
through the streets. He thought of the sunny
farm on which he was born, and felt that he
never could grow used to this place. Two
cents profit! Not enough to buy a loaf of
bread.

John thought of his mother and of the
scanty breakfast which they had eaten to-
gether in their bare garret, with its windows
opening on the sooty roofs. If he could but
have had a good trade, he might have car-
ried a nice little treat home to her. But the
crowd hurried past and nobody stopped.

"Magazine, ma'am? Something to read
on?"

The lady stopped. "Ah, your books are
dirty!" she said, dropping the sooty mag-
azine with a shrug.

As if he could help that! But he began
blowing away the soot for the twentieth time
that day. It was four years since his father
died, and he and his mother had come down
to town; and in that time he did nothing but
fight weekly against soot and starvation.

He opened one of the story papers for
boys. There was a sea story in it; a boy
goes off in the first chapter as a stowaway;
in the third, "the gallant lad leaped upon
the deck, and the commander clasped him
in his arms!" On the next page was an
account of a boy going home from work,
who arrived in time to scale the walls of a
burning house and rescue a child, for which
daring act he was the next day taken into

partnership by the child's father, a mil-
lionaire.

"Some fellows have such splendid
chances!" said John, laying down the book
with a sigh. "Now, I've been here for
years, and nothing grand or noble turns up
for me to do. Buy twenty-five papers daily;
sell them—if I can. On Saturdays, buy
the weeklies; once a month, the magazines.
That's the best of it, year in, year out.
How's a fellow to make a living at that
sort of work?"

An old gentleman who had missed the
train sauntered up and began idly looking
over the boy's stock.

John watched him anxiously. If he
should buy one of the six bound books?
Profit on each was a quarter of a dollar!
If he should buy one of those, he would take
home a little treat to his mother after all.

The boy's eyes fairly glistened; for, be-
sides being fond of his mother, he was
hungry, and the smell of fried oysters and
coffee from the stall near by was almost
more than he could bear.

The old gentleman took up one of the
books. John thought he was certainly go-
ing to buy one. What should the treat be?
A bit of fresh meat? A mince pie? He
decided that steak would be best.

"Ha! here is a book which I have
wanted for a long time," said the gentleman.
"What's the price of this, my boy?"

"Those are one dollar each, sir."

"I'll take this. No, you needn't wrap it
up. I'll read it in the train."

He laid down a bright new dollar.

John could almost smell the delicious
steak, and thought of his mother's thin,
starved face. They had not tasted meat for
days. But a glance at the book as the gen-
tleman dropped it into his satchel, caused
him to say faintly:

"Stop, sir! I did not see which one you
had taken. That is an imperfect copy.
There are four leaves missing in the mid-
dle."

"Too bad!"—throwing it down. "The
money please."

"Will none of the others suit?" said John.

"No, I have wanted this book for some
time."

"You can have it for half price," said
John eagerly.

"I don't want a mutilated copy at all."
John handed him back the money; and,
closing his satchel, the man walked on a
few steps, and sat down in an open doorway
to wait for his train. He was a ruddy, fat
old gentleman, with a kindly, shrewd blue
eye. Having nothing to do, he thought the
occurrence over leisurely.

"That's an honest lad," he said to the
proprietor of the store in which he stood.
"He might have cheated me just now, but
he did not."

"Who? John M'Tavish? As honest as
steel. He's been under my eye now for
four years, and I know him to be as truthful
a lad as ever was born of Scotch blood."

"Um, um!" said the old gentleman. But
he put on his spectacles, and eyed John
from head to foot.

The next day he stopped at the same
shop, and walked up to the proprietor.

"How's he for intelligence, now?" he be-
gan, as if the conversation had stopped the
moment before. "Stupid, probably?"

"I don't think he's very shary in trade,"
was the reply; "but he's a very handy boy.
He has made a good many very convenient
knickknacks for the neighbors—that book-
shelf, for instance."

"Why, that's the very thing I want in a
boy! Well, there's my train. Good day,
sir."

"He'll be back again. Odd old fellow,"
said the storekeeper, laughing.

The next day he was back, and he came
at the same hour.

"I like that boy's looks, sir. I've been
watching him. But of course he has a
dozen relations—drunken father, rag-tag
brothers—who would follow him?"

"No. He has only a mother; and she is
a decent, God-fearing Scotch woman—a
good seamstress, John tells me, but can get
no work. Times are dull here just now.
Pity the country folks will pour into the
cities. Mrs. M'Tavish has nothing but what
the boy earns at his stand yonder."

The old gentleman made no reply. But
the next day he was up to the boy's stand.
John was looking pale and anxious. Some
of his regular customers had refused to take
their magazines, times being so hard. They
would be a dead loss on his hands.

"Paper? Magazines, sir?" he asked.

"No. A word with you, my lad. My
name is Bohnn. I am the owner of the
Bordale Nurseries, about thirty miles from
here. I want a young man to act as clerk
and salesman on the grounds, at a salary of
thirty dollars a month, and a woman who
will be strict and orderly, to oversee the

girls who pack flower-seeds, at twenty dol-
lars a month. I offer the position to you
and your mother, and I give you until to-
morrow to think it over."

"But you—you—don't know me sir!"
gasped John.

"I know you very well. I generally know
what I am about. To-morrow, be ready to
give your answer. I will take you four
weeks on trial. If I am satisfied, the en-
gagement will be renewed for a year."

All the rest of the day John felt like one
in a dream. Everybody had heard of the
Bordale Nurseries and of good old Isaac
Bohnn, their owner. But what had he done,
that this earthly paradise should be opened
to him?

"You'll come, eh?" said Mr. Bohnn, the
next day. "Thought you would. When
can you begin work?"

"At once, sir."

"Good! By the way, there's a vacant
house on the grounds which your mother
can have, rent free, if she remains with me.
A mere box, but big enough. There's my
cart. Suppose you come out, M'Tavish,
and look about you. You can come back at
night."

John locked up the stand, sent a message
to his mother, and went with Mr. Bohnn.
He had not yet told his mother of this
change in their affairs.

He was very silent when he came home
that evening, but oddly tender with his
mother; and she noticed that he remained a
long time on his knees at prayer that night.

They had only a little bread and milk for
breakfast the next morning and John scarcely
tasted it.

"You look as if you could not bear this
much longer, mother," he said, coming up
to her, and putting his hands on her shoul-
der. "You need good wholesome meals
and the fresh air and the hills and the trees
instead of *this*!"—looking out at the piled
stacks of chimneys belching forth the black
smoke of an iron foundry.

"Don't talk of them, John, lad!"

"Well, I won't." And he put on his hat
and went out.

An hour later he came back.

"What is wrong? Why have you left the
stand?" asked his mother in alarm.

"We are going to have an outing, mother.
Don't say a word. I can afford it."

She never had seen the boy so full of ex-
citement. He hurried her to the station,
and soon they were gliding among beautiful
rolling hills and across lovely meadows that
were sweet with the odor of new-mown hay.
At noon they came to stretches of rising
ground, covered with nurseries of young
trees of delicate green and with vineyards
and field after field of roses, mignonette and
all kinds of sweet-smelling flowers.

"Why, John, this is fairyland! What is
this place?"

"The Bordale Nurseries. We will get
out here, mother. I want to show you a
house that—"

He trembled with agitation. His face
was pale as he led her down to the broad,
glancing river, near which was nestled in
the woods a cozy little cottage covered with
a beautiful creeper. There was a garden, a
well and a paddock for a cow. Inside, the
rooms were clean and ready for furnishing.
The river rippled drowsily against its pebbly
shore. The birds darted through the blue,
sunny air. The scent of roses came in upon
the breeze.

"Mother," said John, "this, I hope, will
be your home now." And with that he be-
gan to laugh and caper about her like a boy,
but the tears rolled down his thin cheeks.

John M'Tavish is now foreman of the Bor-
dale Nurseries and a man of high standing
in the country. Not long ago he said to old
Mr. Bohnn:

"I owe this all to the friend who said a
good word for me that day in Pittsburg."

"No, Johnny," said the old man; "you
owe it to the book with the missing pages.
The chance came to you, as it comes to
every boy, to be honest. Honesty and in-
dustry, John, are what did it, and I am in-
clined to think that they never fail to com-
mand success in the end."

Brilliant.

"A Happy New Year," you can make it, my dear
By smiling and doing your best;
Be cheery and true the twelvemonth through,
So shall the New Year be blest.

—Youth's Companion.

I have had playmates, I have had companions,
In my days of childhood, in my joyful school days.
All, all are gone, the old familiar faces!

—Charles Lamb.

A common form, his like you see again;
To look at he was much like other men;
But all his thought was beauty most refined,
With all the graces dancing in his mind;
So beauty educates us as we know it,
And so transforms the man into the poet.

—James Bartlett Wiggin.

The woman could not be of nature's making
Whom, being kind, her misery made not kinder.

—Anon.

He that lacks time to mourn lacks time to mend;
Eternity mourns that. 'Tis an ill cure
For life's worst ills to have no time to feel them.
Where sorrow's held intrusive and turned out,
There wisdom will not enter, nor true power,
Nor aught that dignifies humanity,
Yet such the barrenness of busy life.

—Anon.

A careless hand half broke an apple twig,
And presently there hung a withered spray.
An emblem, thought I, of the human soul,
When from its life in God 'tis torn away.

—Mary Seabury Lothrop.

The winds like funeral dirges sigh,
The forest trees their leaves have shed,
And like a pall the snow doth lie
O'er Nature's lovely form, now dead.
But wait; the sun will smile once more,
Nor smile upon the earth in vain;
For, bright as e'er they were of yore,
The beauteous flowers will bloom again.

So when the storms of life strip bare
The sheltering roof tree o'er the head,
And 'neath the chill snow-wreath of care
Thy fondest hopes, like flowers, lie dead,
Wait, wait; the sun will smile once more,
Nor smile upon the home in vain;
For, bright as e'er they were of yore,
Life's beauteous flowers will bloom again.

—Anon.

Gems of Thought.

Loving kindness is greater than laws; and
the charities of life are greater than all cere-
monies.—Talmud.

Life is before you; not earthly life alone,
but life—a thread running interminably
through the warp of eternity.—J. G. Holland.

True dignity abides with him alone who in
the silent hour of inward thought can still
suspect and still revere himself in lowliness
of heart.—Wordsworth.

Youth is apt too much to spend all its time
in looking forward. Old age is apt too
much to spend all its time in looking back-
ward. People in middle and on the apex
look both ways.—T. DeWitt Talmage.

The aged oak upon the steep stands more
firm and secure if assailed by angry winds;
for if the winter bares its head, the more
strongly it strikes its roots into the ground,
acquiring strength as it loses beauty.—Mes-
tastasio.

Tears, idle tears, I know not what they
mean; tears from the depth of some divine
despair rise in the heart and gather in the
eyes in looking on the happy autumn fields,
and thinking of the days that are no more.
—Tennyson.

Such help as we can give each other in
this world is a debt to each other, and the
man who perceives a superiority or a capac-
ity in a subordinate, and neither confesses
nor assists it, is not merely the withholder
of kindness, but the committer of injury.—
Ruskin.

What a chimera is man! what a confused
chaos! what a subject of contradiction! a
professed judge of all things, and yet a fee-
ble worm of the earth! the great depository
and guardian of truth, and yet a mere bun-
dle of uncertainty! the glory and the scan-
dal of the universe.—Pascal.

The weakest living creature, by concentrat-
ing his powers on a single object, can ac-
complish something. The strongest, by dis-
posing of his over many, may fail to accom-
plish anything. The drop by continually
falling, bores its passage through the hardest
rock. The hasty torrent rushes over it with
hideous uproar and leaves no trace behind.
—Carlyle.

Highest of all in Leavening Power.—Latest U. S. Gov't Report.

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Homely Suggestions.

A way of treating soiled kitchen walls: Dissolve a lump of extract of logwood the size of a grain of corn in hot water, and put it in four or five quarts of lime that is ready to use. One application will be as good as two without the logwood.

New tins should be set over the fire with the boiling water in them for several hours before food is put in them.

To scour knives easily, mix a small quantity of baking soda with your brick-dust, and see if your knives do not polish better. To prevent crockery glaze from cracking, place the crockery in a boiler of cold water and give it a good boiling. Let the crockery remain in the water until cold. A little milk and water rubbed over oilcloth after it has been scrubbed and dried will freshen it. When dishes become discolored through careless washing, wash them in strong soap suds and scour them with marble sand or sifted coal ashes. Trim and fill the lamps in the morning or you may add to the tale of accidents, as the unwise virgins whose lamps were not ready when wanted. Rubbing warts with lemon juice three or four times a day will, it is said, cause them to disappear within a month. Grease spots may be removed from a cold stove by covering them entirely with hot wood ashes. To clean a spice-mill: If you wish to clean your spice-mill, grind a handful of raw rice in it. The particles of spice and pepper, or of coffee, will not adhere to it after the rice has passed through.—Jenness Miller Monthly.

Household Hints.

A tart in great favor is an iced case of puff paste with a filling of marmalade and whipped cream.

It is very vexing and annoying to have one's lips break out with cold sores, but it is better to have them out than in. A drop of warm mutton suet applied to the sores at night just before retiring, will soon cause them to disappear.

In a charmingly furnished apartment, where the space is very much limited, the substitute for the cumbersome buffet is a spot of beauty in the little dining-room. Two skeleton shelves have been made of walnut, and placed in one corner against a piece of dark-red matting tacked upon the wall. On these shelves rich blue china is arranged with a most delightful effect.

All physicians who have had much to do with gymnasiums are eloquent in their praises. Within certain common-sense rules they say that no growing child should be debarred the healthful exercise and helps to right development that is here extended, where it is possible to take advantage of them.

Table fruit will keep twice as long if it is kept in separate lots. Contact hastens decay. One bad apple will spoil a barrel. It will pay the housewife to have the peaches, plums, oranges, lemons and other small fruit wrapped in paper when it comes from the market, and to separate the bunches of grapes. Street vendors preserve them by hanging them up in a cool place. The next best plan is to lay them on a large platter or in kitchen saucers, with space between.

Do You Know

That eggs covered when frying will cook much more even?

That if you heat your knife you can cut hot bread as smoothly as cold?

That camphor menthol is an excellent inhalant if one is suffering from cold?

That a little flour dredged over the top of a cake will keep the icing from running?

That the white of an egg, with a little sugar and water, is good for a child with an irritable stomach?

That clear, black coffee, diluted with water and containing a little ammonia, will cleanse and restore black clothes?

That a large slice of raw potato in the fat when frying doughnuts will prevent the black specks from appearing on their surface?

That by rubbing with a flannel cloth dipped in whitening the brown discoloration may be taken off cups which have been used for baking?

That a little powdered borax in baby's bath water prevents the little one's skin from chafing, and is not so liable to break out with the heat?—Ella B. Simmons, in Good Housekeeping.

Exact justice is commonly more merciful in the long run than pity, for it tends to foster in men those stronger qualities which make them good citizens.—Lowell.

YOUNG FOLKS' COLUMN.

Cuddle Doon.

[This sweet and tender little poem for the nursery is by "Surfaceman" (Alexander Anderson) in "Contemporary Scotch Verse." It is very popular in Scotland.]

The bairnies cuddle doon at nicht
Wi' muckle faught an' din;
"Oh, try and sleep, ye waukrife rogues,
Your faither's comin' in."
They never heed a word I speak;
I try to gie a frown,
But aye I hap them up an' cry,
"O bairnies, cuddle doon!"

Wee Jamie wi' the curly heid—
He aye sleeps next the wa',
Bangs up an' cries, "I want a piece"—
The rascal starts them a'.
I rin and fetch them pieces, drinks,
They stop awae the soun',
Then draw the blankets up an' cry,
"Noo, weanies, cuddle doon."

But ere five minutes gang, wee Rab
Cries out frae neath the claes,
"Mither, mak Tam gie ower at ance,
He's kittle wi' his taes."
The mischief's in that Tam for tricks,
He'd bother half the toon;
But aye I hap them up an' cry,
"O bairnies, cuddle doon!"

At length they hear their faither's fit,
An', as he seeks the door,
They turn their faces to the wa',
While Tam pretends to snore,
"Hae a' the weens been gude?" he asks,
As he pits aff his shoon;
"The bairnies, John, are in their beds,
An' lang since cuddled doon."

An' just afore we bed oorself's
We look at our wee lambs,
Tam has his airm round wee Rab's neck,
And Rab his airm round Tam's.
I lift wee Jamie up the bed,
An' as I straik each croon,
I whisper, till my heart fills up,
"O bairnies, cuddle doon!"

The bairnies cuddle doon at nicht
Wi' mirth that's dear to me;
But soon the big warl's cark an' care
Will quaten doon their glee.
Yet, come what will to ilka ane,
May He who rules aboon
Aye whisper, though their paws be ba,
"O bairnies, cuddle doon!"

The Ducklings.

Written for the RURAL PRESS by Aunt Susie.

"O, mother, what shall I do? The old duck has left her nest and won't go back. Only four days more and the eggs would have hatched! Do you suppose I could make them hatch out in the house?"

All this was said in a very anxious tone by a little boy named Billy, who lived on a ranch and had a dozen hens and ducks all his own. He had set an old duck on a nest of eggs and was so disappointed when he found she had tired of setting.

His mother said: "You better see if you can find a hen that wants to set. If so, put the duck eggs under her and perhaps they will hatch out all right. You couldn't keep them warm all night; it would be no use to bring them into the house."

So Billy went to his yard of hens, and sure enough he found a big Black Langshan hen he called Betsy on a nest. When he touched her, she ruffled up her feathers and clucked and wouldn't get off the nest, and she looked dull and stupid, as setting hens do. Billy was greatly rejoiced, and put the duck eggs under her.

She settled down comfortably, and seemed to say: "Well, these are the largest eggs I ever sat on; but then the Langshans are such a fine breed of hens. I suppose my relations have laid these big eggs on purpose for me. I have been laying eggs a long time myself, and some of these must be mine, only I didn't know they were so big; but it must be all right, so I'll just take a nap and be comfortable, for it is a long time before I shall have any chicks come out of these eggs. Let me see. The sun has to come up behind that big hill and travel way round to that other hill behind me and go out of sight twenty-one times before I can get my chicks. I don't expect to sleep all that time, but I mean to have a good nap." So she nestled down and looked very comfortable.

Billy went off to work very happy. It was his regular duty to keep the house supplied with wood for stoves and fireplaces and plenty of kindlings, nicely split, and put in a separate box. Billy was only twelve years old, but whatever he did was well done. His motto was, "What is worth doing at all is worth doing well."

Good old Betsy did not know she had to finish up the neglected duties of a duck, so when the fourth day came after Billy gave her the eggs she was very much astonished to hear the eggs crack under her. She poked one egg out from under her to see

what was the matter, when out rolled a little yellow duckling that surprised her so she jumped off and found her nest full of the same queer-looking things; they made a noise almost like the "peep, peep" of young turkeys. Poor old Betsy didn't know what to do. At last Billy came and found all the eggs had hatched. He was much delighted. But Betsy did feel happy, nevertheless. She went back on the nest, and seemed to say:

"Well, this is certainly very funny. All my relations are Langshans, and here I have a nestful of yellow chicks, when everybody knows that Langshan chicks are black. And these are such queer-looking chicks, too; they have a piece of skin between their toes, and have such funny bills. I certainly never saw such queer chicks, but I am sure they keep calling 'Mother,' 'Mother,' though not in just the same tone as my last chicks did; but if I am not their mother I'm sure I don't know who is. I'll do my duty and keep them warm to-night, and to-morrow take them for a walk, and find bugs and worms for them."

The little ducklings did not seem to understand her "cluck, cluck," but they knew her feathers kept them warm, so cuddled under her and went to sleep.

The next day Billy let Betsy out with her brood, and laughed to see the little ducklings waddle along beside the hen. There was a pond on one side of the corral near the barn, where the horses drank, and Betsy, like a good mother, thought she would give her chicks a drink; so they followed her to the pond. She took a drink, and expected them to do the same; but, to her intense astonishment and fright, they went right in the pond and began paddling around. She called: "Come back. Come back. You will all be drowned. Chicks can't play in water. Come back, I tell you."

But they paid no attention to her. They didn't understand what she said. They knew that "Quack, quack, quack" meant "Go in the water and swim," but they didn't know that "Cluck, cluck, cluck" meant "Don't go in the water." So they swam clear across the pond and had such a good time. They caught some long-legged flies on the water, and ate the grass when they reached land on the other side.

Poor Betsy was so frightened and bewildered she didn't know what to do; but at last, as they wouldn't come to her, she determined to go to them, so made a brave step in the pond. But she went way down in the water and got her feathers all wet, and she began to call and make such a noise Billy heard her and went to see what the matter was. He had to laugh, she looked so funny, but felt sorry for her. He knew she was trying to follow her ducklings, and also knew she would be drowned if he left her, so pulled her out and carried her over to the other side, where her ducklings were. She shook herself and stood in the sun, and after awhile was dry and comfortable again. She scolded her ducklings, but they didn't understand. They knew they felt tired and sleepy, so ran to her, and she brooded them, scolding all the while.

Well, the next day the ducklings went in the pond again. Betsy didn't try to follow them. She made up her mind they were the queerest and most disobedient chicks she ever had. She scolded and scolded; but they didn't understand, and went in the pond every day, had fine times, and grew fast, and soon became beautiful white Pekin ducks.

Discovery of the Telescope.

As in many other cases of discovery, that of the telescope appears to have been the result of a playful accident, says the *Optician*. Several stories are told about it, but they are all similar. The one most generally accepted tells how, about the year 1590, just 303 years ago, the children of Zachariah Jansen, a spectacle-maker, residing at Middleburgh, in Holland, were playing one day in their father's workshop, and observed that when they held between their fingers two spectacle glasses, one some distance from the other, and looked through them at the weather-cock on the church, it seemed inverted, but very much nearer to them and greatly increased in size. Their father, when his attention was called, saw that one of the glasses was convex and the other concave. He made experiments, and ended by fixing such glasses in wooden tubes a few inches long and selling them for curiosities. Another account tells us how one Lippersheim discovered the telescope in a similar manner. Descartes, however, a contemporary, gives the credit to James Metius, a glass-cutter in Holland, whose brother, a professor of mathematics and a maker of burning glasses and mirrors, hit upon the discovery in the same way that Jansen's children are said to have done.



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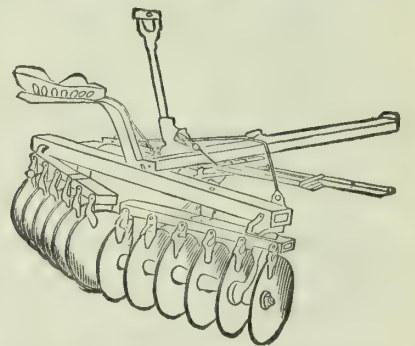
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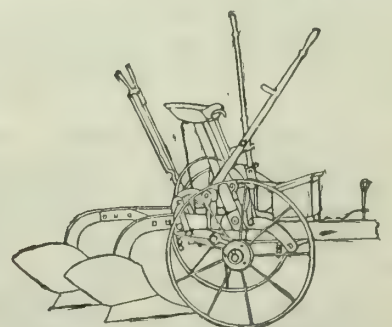
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AGRICULTURAL NOTES.

CALIFORNIA.

Butte.

Palermo Progress: Mr. Stone of Concow is preparing to go extensively into hop raising next season, and is now getting out 16,000 hop poles for that purpose.

W. E. Gillespie, who grew tobacco in the East some years ago, will raise a quantity of tobacco next season near Oroville, as he is confident that a good quality can be raised in this State.

Chico Chronicle-Record: About one year ago Matt Schwein bought of D. M. Reavis a sow with eleven shoats, the latter being then about six months old. Lately he killed the mother and one of the shoats, the former weighing, when dressed, 525 pounds and the latter 494 pounds.

Del Norte.

Del Norte Record: From one of the stockholders of the Crescent Creamery Co., Smith river, we learn that the following is the business done by the creamery during 1893: Amount of milk purchased, 1,986,792 pounds; amount of butter made, 92,676 pounds; average amount of milk for the season required to make one pound of butter, 21.44 pounds. It must be remembered that it was rather late in the season when the creamery began operations, and the above is a good showing.

Fresno.

Fresno Expositor: The owner of a 20-acre vineyard near this city has just received word that about five tons of his raisins have been sold in the East at 1½ cents a pound. He estimates that he is out about \$500 on his year's work.

Humboldt.

The Eureka Standard declares that it is hardly worth while to ship potatoes now. They are worth more by the sack in Eel river valley than they are in San Francisco.

Many range owners in the Garberville section who had intended to plant orchards have concluded to wait another year. They fear that the late grasshopper visitation may be more than duplicated another year.

We take from the Eureka Standard of last week the following manifest of the out-going steamer Pomona as illustrating the industry of Humboldt county: Six boxes apples, 1200 feet moulding, 3000 fancy pickets, 300,000 green shingles, 5 cases fish; from Arcata, 15 cases butter, 25 sacks peas; from E. R. & E. R. R., 67 cases fish, 48 cases butter, 8 kegs butter, 59 boxes apples, 15 bundles green hides, 10 coal oil cans tallow, 3 sacks tallow; from Fields Landing, 153 boxes apples. The Pomona is one of many boats that ply between San Francisco and northern ports. Such shipments as those above reported are made every day or two.

Lake.

D. M. Hanson whose ranch is in Lake county 12 miles from Sulphur creek, shipped 3700 pounds of almonds to market at San Francisco last week. This is the first shipment of the kind from those parts.

Los Angeles.

Downey Champion: A fatal epidemic has prevailed among the hogs of this vicinity during the past month. The loss has been mainly among young stock running at pasture. The symptoms: No desire for food, violent breathing, or what is commonly called the thumps. The disease proves fatal in three or four days. The heaviest loser in this neighborhood is Allen W. Neighbours, who has had upward of 100 head of weaned pigs and growing hogs die in the last three weeks. Messrs. Morrow, Slingerland and others have also lost heavily by the mysterious disease, which is supposed not to be hog cholera, but some unknown disease equally fatal.

Modoc.

Jesse D. Carr is making preparations to winter 600 head of cattle at the lava beds southeast of Tule lake, Modoc county. He is hauling hay there for the saddle horses, and expects to keep two men on the ground until grass grows again. This is the place where Captain Jack and the troops held their protracted dispute 20 years ago.

Monterey.

Salinas Index: Mayor H. S. Ball of Salinas has been looking up the dairy statistics of Monterey county. He finds that there are between 75 and 80 dairies in the county, equipped with from 50 to 500 cows each, very few—probably not more than half a dozen—having less than 100 cows.

Orange.

Santa Ana Blade: William Paramore and F. L. Smith have been awarded the contract for picking, packing and hauling oranges from the orchards to the packing houses for the Santiago Orange-Growers' Association at the rate of 33 cents per packed box. Material and appliances will be supplied at cost by the association and everything is included in the price named except washing. The boxes will cost 12½ cents a piece. Secretary Cargill of the County Exchange told the meeting that the establishment of an auction house now under way by some large commission firms would obviate the difficulty expected by some growers who are in need of ready money.

El Toro letter in Santa Ana Blade: About 7000 acres of barley, wheat, corn and oats will be put in this year at El Toro. The chief grain-growers are Mr. Hiles, of Santa Ana, about 500 acres; D. Ahern, about 1000 acres; Henry Schwartz & Sons, about 1000 acres and Mr. Buckheim, of Santa Ana, about 1400 acres; Mr. Cooper, 250 acres; Rogers & Thompson, 600 acres; Mr. Cook, 500 acres; Salter Bros., 350 acres; Chas. Salter, 200 acres; Kohlmeier, 3000

acres besides a number of others who will plant smaller patches. Most of the acreage will be broken for the first time this year. The new acreage in fruit this year at El Toro amounts to about 22,000 trees of the deciduous and citrus varieties. The largest planters are William Hoyle, E. P. Hoyle, A. C. Twist, Captain Huddy, C. W. Lyons and Charles Salter.

Santa Clara.

Gilroy Advocate: A wonderful showing of wild oats, barley and mustard of this season's growth was brought under our eyes a few days since by Mr. Sanders. The barley was volunteer and stood four feet high, the oats looking equally thrifty and the mustard was full of yellow blossom. It is certainly a remarkable growth at this early date and it tells of the absence of frosts and the rich nature of the soil of the redwood foothills of the west range.

J. A. McKerran has recently planted at his ranch near Gilroy a large number of olive and cork elm trees of large growth. Last year he made a similar and successful planting of trees three and four years old.

Santa Cruz.

Watsonville Pajaronian: Over 9000 acres have been contracted for beets for the campaign of 1894—the largest acreage in the history of the Watsonville factory. Of this amount 4000 acres are in this valley and the balance on the Salinas.

Solano.

The Vacaville Reporter names the following as examples of successful woman orchardists in its neighborhood: Mrs. E. P. Buckingham, Mrs. Geo. M. Blake, Mrs. Thayer and Miss Bates. Mrs. Jagger, Mrs. Schroeder, Miss Holmes, Mrs. Marvine, Mrs. Whitman, Mrs. Levi Kornes, Mrs. Pearson, Mrs. Allen, Mrs. Barrows, Mrs. M. C. Smith, Mrs. Quick, Mrs. Martell. The last named lady ships every year the first ripe oranges in the State.

Dixon Tribune: Peter Boyens has a novel weevil trap in operation at his place. It is simply a five-gallon oil can, which is thrust in the barley bin, where the little pests abound. What attraction the metal can has for the weevil it would be hard to determine, but they leave the grain in thousands and gather in the can, which is easily emptied and reset.

Sonoma.

Sonoma Tribune: Orchardists began plowing immediately after the recent rainstorm cleared away and the soil is reported to be exactly in the proper condition for its being turned. Thus far the fruit trees have been faring well and if the weather in spring will be mild the crops will turn out well.

Cloverdale Review: This year marks another important epoch in the history of this favored section. For the first time olives are grown in sufficient quantities to be put on the market. The Italian-Swiss colony, whose extensive vineyards, olive orchards and olive groves are growing in such a prodigious manner, and whose wines are prize-winners wherever brought into competition, have this year sold their crop of olives to Mr. Tiburio Parrott at St. Helena. It was our pleasure to visit the superintendent, Mr. L. Vosconi, recently, and he presented us with a bottle of pickled olives, the first ever put up by the colony, and we say, without any favor, that they were richer in taste and more palatable than the foreign pickled olives. With the olive groves already planted and those about to be put out, with the extensive orange groves, the future prominence of this section as a citrus district promises to bring great riches.

Cloverdale Review: A. C. Ledger is arranging to go into the pork business in an extensive way. He says that in his estimation there is more money in raising hogs for market than any other farm product that he knows of. Men are now engaged in clearing a tract of land back of his house, which will be planted to grain and hogs turned in to harvest the crop.

Sutter.

Sutter Independent: The conditions have been very favorable for planting, and the grain that is now up is doing well. The recent frosts have been of great benefit in mellowing the soil and making it pulverize nicely for winter sowing. It will also prove of advantage to summer-fallow in rooting. On the adobe lands the grain is about all in. Some of the sandy lands remain to be plowed and sown, but not to any large extent. On the whole, we do not remember to have seen a more favorable winter during a residence of a quarter of a century in this county. The rivers, up to this time, have remained with remarkable propriety. The waters of Butte creek and slough, the Tisdale outlet and the back water from the delta have filled the lower part of the tule basin, without spreading out over the winter pastures, or endangering the back levees. Of course there is still time for very high waters.

Tehama.

Major J. S. Cone and Gen. N. P. Chipman, says the Red Bluff Sentinel, have received a quantity of pecan nuts from Texas which will be planted on their respective places. They are of the best variety and were on a tree that cost \$50 when it was scarcely more than a switch. The nuts received cost \$1 a pound, while the ordinary varieties do not command more than 15 cents a pound.

Tulare.

Tulare Times: Four potatoes that weigh 16 pounds! A pretty big story, but that is what was accomplished near Porterville the past season. Those four potatoes will loom up at the Midwinter Fair.

Ventura.

Ventura Advocate: Some of our farmers are seeding their land to rye grass, which has proved to be the best crop, both in quality and quantity, for feed. It does best on wet land, where it forms a sod and will last for years without re-sowing.

CHOICE ROSES AT 5 Cts.

OUR RAINBOW COLLECTION
OF 20 ROSES FOR \$1. BY MAIL.



THE PROOF OF THE PUDDING IS IN THE EATING.

The GOOD & REESE CO., Springfield, O. Gentlemen: The 31 ever blooming roses you sent me for \$1. arrived yesterday in the most splendid condition, and allow me to say that I was absolutely surprised at the size of the stalks and the amount, length and thickness of the roots. I have wondered many times how you could afford to send out such roses for such a small price. Every home in the land should have their yard full of ever blooming roses at this price.

Yours,
(Judge) C. H. WILLINGHAM.

We will also send our Iron Clad Collection of 12 Hardy Roses, all different colors, \$1. Try a set. 20 Chrysanthemums, all prize winners, \$1. 16 Geraniums, double and single, flowered and scented, \$1. 12 choice Begonias, different kinds, \$1. 40 packets choice Flower Seeds, all different kinds, \$1. Our handsome, illustrated, 162-page Catalogue, describing above Roses, Plants and all Seeds, mailed for 10c. stamps. Don't place your order before seeing our prices. WE CAN SAVE YOU MONEY. We have large two-year old Roses for immediate effect. Liberal Premiums to club rulers, or how to get your seeds and plants free. We are the LARGEST ROSE CROWERS IN THE WORLD. Our sales of Rose Plants alone last season exceeded a million and a half. When you order Roses, Plants and Seeds, you want the very best. Try us. Address

GOOD & REESE CO., Box 143 Champion City Greenhouses, Springfield, Ohio.

The roses we send are on their own roots, from 10 to 15 inches high, and will bloom freely this summer either in pots or planted in yard. They are hardy, ever bloomers. We send instructions with each order how to plant and care for them. Please examine the below list of 20 choice fragrant monthly roses, and see if you can duplicate them anywhere for an amount so small as \$1. They are nearly all new kinds. We guarantee them to reach you in good condition, and we also guarantee them to be the best dollar's worth of roses you have ever purchased. THE RAINBOW COLLECTION OF 20 ROSES FOR ONE DOLLAR MUST BE ORDERED COMPLETE.

The List—Bridemaid, the best pink rose by far ever introduced. Princess of Wales, amber yellow, degenerating to orange. Snowflake, pure white, always in bloom. Princess de Rudolphe, lovely coral red. Pearl of the Gardens, deep golden yellow. Beauty of Stapleford, bright rose crimson. Queen of Fragrance, in clusters of six to ten roses, white edged pink. Rheingold, beautiful shades of saffron and tawny. Sunset, golden amber, resembles an "afterglow." Dr. Gird, copper yellow and many rose. Duchess Marie Immaculate, an intermingling of bronze, orange, yellow, pink and crimson. Lady Chatterbox, soft rose crimson and yellow. Papa Gontier, lovely dark red. Star of Gold, the queen of all yellow roses. Waban, a great rose in bloom all the time. Lady Stanley, great garden rose. Violette. Wauder, one of the best roses grown. Cleopatra, soft shell pink, lovely. Supphee, fawn suffused with red. Letty Coles, very chaste and beautiful.

This applies to Floral matters as well as to matters culinary.

Pittsburgh, Pa. Sept. 21, 1893.

The GOOD & REESE CO., Springfield, O. Gentlemen: I wish to thank you for the excellent assortment of roses contained in your Rainbow Collection. On May 8, I planted them, 19 of them lived. About six of them bloomed in June, since which all have bloomed either monthly or perpetually, true to their color. On Sept. 1, I counted 106 buds and blooms on the 19 roses. They were much admired by my friends and neighbors, and allow me to thank you for furnishing this source of pleasure so cheaply. Very respectfully,
E. D. SMITH.

WAKELEE'S

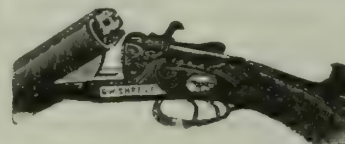
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OLD GUNS TAKEN
IN EXCHANGE.

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WE GUARANTEE

That one tablespoonful of

GOMBAULT'S CAUSTIC BALSAM

will produce more actual results than a whole bottle of any liniment or spavin cure mixture ever made. It is therefore the cheapest (as well as safest and best) external applicant known for man or beast.

THE LAWRENCE WILLIAMS CO., CLEVELAND, OHIO.



CHOPPERS ATTENTION!

ASK FOR THIS AXE.

USE NO OTHER.

Wood-choppers, try the

Kelly Perfect Axe

It will cut more wood

than any other axe.

The scoop in the blade

keeps it from sticking in

the wood, and makes it

cut deeper than any other

axe. Ask your dealer for

it. Send us his name if

he don't keep it. It is the

Anti-Trust Axe.

Kelly Axe Mfg. Co.

LOUISVILLE, KY.

I AM NOW OFFERING FOR SALE SOME VERY

choice and cheap properties,

FARMS AND CITY LOTS.

Send for circulars giving full particulars. Now is the time to buy, before the flood tide sets in.

JOHN F. BYXBEE,

22 Market Street.....San Francisco.

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Reserve Fund and Undivided Profits, 130,000
Dividends paid to Stockholders..... 833,000

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\$25; Blowpipe Assay, \$10. Full course of assaying, \$60.
ESTABLISHED 1864. Send for circular.

Uses of Cotton Seed Oil.

Last year there were probably 1,250,000 tons of seed crushed. Out of this seed there were obtained 1,000,000 barrels of oil. Of this amount it is estimated by *Pharmaceutical Era* that 300,000 barrels are used in Chicago for making lard, and St. Louis, Kansas City and Omaha are credited with about 200,000 in making the same product. A comparison of the statistics of lard production and cotton seed oil consumption might show interesting results as to the composition of the former. About 20,000 barrels of cotton oil are used on the coast of Maine to pack sardines, and probably from 50,000 to 100,000 barrels are used by soap-makers in the manufacture of toilet soaps. About 250,000 barrels go to Rotterdam, Holland, for making butter, and large quantities go to southern Europe for mixture with the pure (?) olive oils exported from Marseilles, Trieste, and other Mediterranean ports. Although this oil is not to be preferred for illuminating purposes on account of its containing too much gum, considerable of the cheaper grades is used for such purposes. The use of this article upon its own merits is, however, rapidly increasing. It is already extensively used in Latin countries as a cooking grease, and several American manufacturers are advertising it for culinary purposes.

How to Catch Mice.

Take a jar or tin bucket and fill it about half full of water and place it where mice are in the habit of promenading. Take a board 18 or 20 inches long, one end of which lay on the floor or ground, as the case may be, and the other end on top of the bucket. Sprinkle a handful of oats over the water in the bucket. This will not sink, but will remain on top and hide the water from view. Now sprinkle wheat, corn or anything else that mice like on the board so as to entice them to the top, when they will see the oats in the bucket and jump in to get it and soon perish.

I have tried this plan with quite satisfactory results. The trap is always set, and, when a mouse once gets in, there is no getting out. Of course it should be noticed every day or two, and the drowned rodents removed. I have never tried to catch rats in this way, but think if a jar that would hold six gallons or more were used, the plan would prove quite satisfactory.

It is a much safer way than the use of "rough on rats" or other poisons, and is considerably cheaper than those notorious "champion liar" rat traps. Give the plan a trial.—Ohio Farmer.

How To Tell a Person's Age.

A German newspaper says the age of a person and the month in which he was born may be discovered as follows: First you ask him to go to the other end of the room, to prevent your seeing what he is going to write. Then you ask him to put down the number of the month in which he was born, and multiply the latter by two; add five to the sum and multiply the latter by 50; add his age to the product; then deduct 365 and add 115 to the remainder. Suppose he is 49 years of age and was born in February—the computation might stand thus: 2×2 equals 4, plus 5 equals 9, $\times 50$ equals 450, plus 49 equals 499, minus 365 equals 134, plus 115 equals 249. The last two figures indicate the age, viz., 49, and the first figure, 2, February, the second month of the year. You simply ask the person to state the result of the calculation, and then declare that he was born in February and is 49 years of age. Experiment with this as often as you please and it is sure to work, provided you do it correctly.

Electricity is now being utilized for killing homeless dogs and cats at Hartford, Conn., says the *Chicago Journal of Commerce*. In the rear of the police station there is a cage just large enough for a dog to stand in, fitted up with electrical connections. The fore feet of the animal rest upon one electrode and his hind feet upon another, and when he is in position an electric current is switched on and he is put to death on the same principle as criminals are executed.

\$100 Reward, \$100.

The reader of this paper will be pleased to learn that there is at least one dreaded disease that science has been able to cure in all its stages, and that is Catarrh. Hall's Catarrh Cure is the only positive cure known to the medical fraternity. Catarrh being a constitutional disease, requires a constitutional treatment. Hall's Catarrh Cure is taken internally, acting directly on the blood and mucous surfaces of the system, thereby destroying the foundation of the disease, and giving the patient strength by building up the constitution and assisting nature in doing its work. The proprietors have so much faith in its curative powers, that they offer One Hundred Dollars for any case that it fails to cure. Send for list of testimonials. Address F. J. CHENEY & CO., Toledo, O.

Sold by Druggists, 75c.

Breeder's Directory.

Six lines or less in this directory at 50c per line per month.

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JERSEYS AND HOLSTEINS, from the best Butter and Milk Stock; also Thoroughbred Hogs and Poultry. Wm. Niles & Co., Los Angeles, Cal., Breeders and Exporters. Established in 1876.

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PERCHERON HORSES.—Pure-bred Horses and Mares, all ages, and Guaranteed Breeders, for sale at my ranch near Lakeside, Lake County, Cal. New Catalogue now ready. Wm. B. Collier.

PETER SAGE & SON, Lick House, San Francisco, Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs.

JERSEYS—The best A. J. C. C. Registered Prize Herd is owned by Henry Pierce, S. F. Animals for sale.

L. V. WILLITS, Watsonville, Cal., Black Percherons. Registered Stallions for sale.

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MONROE MILLER, Eliso, Ventura County, Cal., Breeder of Registered Berkshire Hogs.

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P. H. MURPHY, Perkins, Sac. Co., Cal.—Breeder of Short-Horn Cattle, Poland-China and Berkshire Hogs.

T. WAITE, Perkins, Cal., breeder of registered Berkshire Hogs and Plymouth Rock fowls.

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Los Angeles, Cal.
— Direct Importers of —

Large Draft and Fine
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German Coach, Percherons, English Shires, Belgians, Cleveland Bays and Yorkshire Coach, all Registered. First Prizes at Cal. Fairs. SIXTY-ONE PRIZES, FIVE SWEEPSTAKES and two herd prizes at World's Fair, 1893. Correspondence solicited. Address 208 Belmont Ave. We make special inducements and terms to a company of breeders.



In These Dull Times

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Importer, Breeder, Exporter.

S. O. White Leghorn
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Barred Plymouth Rock
Black Minorcas,
Eggs, \$3 per 13. Send for circular.

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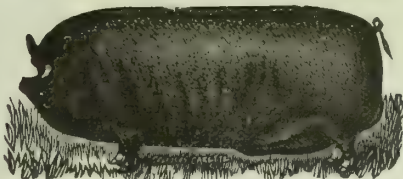
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BERKSHIRE SWINE.

Prize Herd of Southern California.

PIGS OF ALL AGES FOR SALE.

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Imported and California.

FOR SALE.

A number of MULES, 2, 3 and 4 years old.

NONE FOR RENT OR ON SHARES.

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Short-Horn BULLS

Calves, Yearlings and 2-year-olds

FOR SALE.

ROBERT ASHURNER,

Baden Station, San Mateo County, Cal

The cars of the S. F. and San Mateo Electric Road pass the place.

HOW TO RAISE TURKEYS!



The numerous diseases that are usually prevalent among very Young Turkeys may be prevented by the use of

CARY'S PILLS.

Send for Circular

E. FOUGERA & CO.,

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Dovetailed Hives, Sections, Comb Foundation, Foundation Machines, Extractors, Smokers, Honey Knives, Alley's Traps, Perforated Zinc Honey Boards, Shipping Cases, Cans and Cases for Extracted Honey, Bee Tanks, ROOT'S GOODS, and everything required by the trade, wholesale and retail.

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MADISON, CAL.

Poultry and Eggs for Sale Cheap.

Toulouse Geese a Specialty.



The Most Successful Remedy ever discovered as it is certain in its effects and does not blister. Read proof below.

KENDALL'S SPAVIN CURE.

STAR, LANE CO., OREGON, Feb. 8th, 1892.

DR. B. J. KENDALL CO.,

Dear Sirs:—I have used your KENDALL'S SPAVIN CURE for the last twelve years never being without it but a few weeks in that time and I have made several wonderful cures with it. I cured a Curb of long standing. Then I had a four year old colt badly Sweeney'd; tried every thing without any benefit, so I tried your liniment, and in a few weeks he was well and his shoulder filled up all right, and the other, a four year old that had a Thoroughpin and Blood Spavin on the same joint, and to-day no one can tell which leg it was on. These statements can be proven, if necessary; the four year olds are now seven and can be seen any day at Cottage Grove, Or.

S. Z. PAXTON.

—Price \$1.00 per bottle.—

DR. B. J. KENDALL CO.,

Enosburgh Falls, Vermont.

SOLD BY ALL DRUGGISTS.

Treatise on the Horse and His Diseases.

By B. J. KENDALL, M. D.



85 Fine Engravings showing the positions and actions of sick horses. Gives the cause, symptoms and best treatment of diseases. Has a table giving the doses, effects and antidotes of all the principal medicines used for the horse, and a few pages on the action and uses of medicines. Rules for telling the age of a horse, with a fine engraving showing the appearance of the teeth at each year. It is printed on fine paper and has nearly 100 pages, 7x5 inches. Price, only 25 cents, or five for \$1, on receipt of which we will send by mail to any address DEWEY PUBLISHING CO., 220 Market Street, San Francisco.

The BEST POULTRY JOURNAL.

Teaches How to Make Money with A Few Hens. ONLY 25 CENTS. It is well worth \$1.00. Send stamps. Sample free. Is the name of it. Mention this ad. FARM-POULTRY I. S. Johnson & Co., Boston, Mass.

BEEKEEPERS SEND FOR SAMPLE COPY OF CLEANINGS IN BEE CULTURE. A Handsomely Illustrated Magazine, and Catalog of BEE SUPPLIES FREE. A. I. ROOT, Medina, O.

The American Bee Journal.

(Established 1861.) IS Oldest, Largest, Best, Cheapest and the Only weekly Bee-Paper in all America. 32 pages, \$1.00 a year. Send for Free Sample. \$1.00 BEE-BOOK FREE. GEO. W. YORK & CO., 14 FINE Ave., Chicago, Ill.

PATRONS OF HUSBANDRY.

California's Praise.

The following poem by Mrs. Imogene A. Casey was read on Admission Day at Florin Grange, No. 130, September 9, 1893.

Fair California! Golden State!
Dear California, grand and great,
To thee, to thee, we sing,
Thy Golden Gate is open wide;
The ships of every nation ride
Upon thy harbor's peaceful tide;
For this, to thee we sing.

We praise thee for thy hidden wealth
And thy pure breezes giving health
Better by far than gold.
We praise the richness of thy soil,
Which giveth back for honest toil
Abundant fruits and nuts and oil
And grains an hundred fold.

Land where the orange, fig and vine
Are fast supplanting upland pine,
To thee, to thee, we sing,
Adown thy hill-sides and between
Flow rivers through thy valleys green
Where blooming flowers are always seen,
For this, to thee we sing.

Thy giant groves, thy falls sublime,—
Thy gifts to us for endless time,—
Ever will sing thy praise.
From where thy mountains, cloud-capped, stand
Down to the ocean's glittering sand
Are scenes of beauty which demand
That we should sing thy praise.

Thy balmy air and sunny sky
With far-famed Italy may vie.
To thee, to thee, we sing,
Thou land of every promise bright,
That fillest all hearts with delight,
We only give to thee thy right
When in thy praise we sing.

The pioneers who sought thy gold
Fond memories in their hearts entold
Of days of '49.
They suffered hardships by the way;
In noble service they've grown gray.
Alas! too soon they pass away
Whose fondest praise is thine.

Thy sons and daughters name with pride
A birthplace on thy mountains' side
Or in their valleys fair.
And when united heart and hand
They build their homes in thy fair land
Their children's children—noble band—
Will say, "Our home is there."

Secretary Morton in Reply.

Patrons of Husbandry will be interested in the following remarks by Secretary Morton, made to a reporter who brought him information that the National Grange has passed resolutions denouncing him. Mr. Morton said:

The grange is an independent body. There can be no objection to that or any other independent body attending to the purposes for which it was created. It is subject to criticism whenever it devotes itself to any other purposes. And only to those grangers and granges who have been instituted for other than agricultural advancement can any of the language used in the remarks at Chicago on the 16th of last October be applied. The gentlemen who applied and fitted those remarks to themselves have no cause for self-congratulation. What would they think if farmers who formerly belonged to the grange should pass a series of resolutions inquiring what became of more than \$200,000 that the National Grange alleged, some years since, it held in the form of Government bonds for the benefit of the order? Of course, it is understood that the reply to such a resolution would be: What did the State Grange do with it? How much of the \$200,000 ever reached the original donor or contributors of that sum. No good citizen desires to criticize agricultural associations which are legitimately organized for the very useful and legitimate purpose of exalting the calling of the farmer, and the intellectuality of those who pursue it. More than thirty years ago, with Governor Furnas of Nebraska, I organized the State board in that State, and continued an active member of it for many years, being twice the president thereof. I also assisted Governor Furnas, J. H. Masters and others in organizing the first State Horticultural Society in Nebraska and making the first Territorial fair in 1859; and in 1872 I originated the phrase and founded the anniversary "Arbor Day." Since then I have been president of the American Forestry Association, and contributed in a small way the best I could to cultivate in the American mind the love of tree conservation and tree planting. It is not necessary for me to attempt to make any defense as to my real interests in real farmers. I will neither modify nor retract anything that I said at Chicago, no matter what the results will be to me personally, politically or otherwise. As a retractor I have always been a complete failure.

From Two Rock.

TO THE EDITOR:—On the 4th inst. Two Rock Grange installed its new officers and celebrated the occasion with a harvest feast. About 150 patrons were present. All the granges in the county had been invited, but owing to cold weather and bad roads the representation was not good. The undersigned, assisted by Sister Purvine, presided over the ceremonies of installation. Each of the new officers in turn made brief and appropriate remarks.

Past Master Denman, in taking leave of the master's chair and in welcoming the new master, Houx, said: "As the retiring master I want to say a few words of welcome to you, as you enter the high position you so well merit. When I say that on you now devolves many important duties and much responsibility, I know I call no new thought to your mind, and it is to encourage you as you now enter on those duties and assume that responsibility that I will sum up my experience as master of our grange and to say to you, as I wanted to say to our State Grange last fall, that the promptness of our members at meetings and in committee work, the ready assistance of brother officers, the entire absence of selfish interest or petty jealousies, and, above all, the full attendance of a hearty spirit of co-operation and fraternal charity and regard, all these combine to make the position of master of Two Rock Grange one much to be enjoyed.

"I know of no words to more strongly express my best wishes for a happy administration of your office than these: May your experience be as pleasant and profitable to you as mine has been to me—knowing how constant will be your endeavors to meet all your duties as becomes a true and faithful Patron of Husbandry. I will add in conclusion, in confidence of the complete attainment of my best wishes, that the experience of the past is a sure guarantee for the greatest possibilities of the future.

"And now, fellow patrons, I want to say a few words of farewell to you as I now take leave of the high position with which you honored me.

"On first assuming the chair I was deeply impressed with a sense of the responsibility it brought and have earnestly striven to meet all my duties in a fair and strictly impartial spirit and to do all I could to advance the interest of our Order.

"I keenly appreciate and am deeply grateful for the ready assistance and the kindly regard that I have always encountered and the favor and confidence that my election to the position implied, and lastly, that the memories of my term of office as your master will be among those that I most warmly cherish."

J. C. PURVINE.

Petaluma, Jan. 10.

From Stockton.

TO THE EDITOR:—We are prosperous financially and fraternally and alive to the questions of the day. Our attendance is good, though some are out, seeding. The rains have been just right for that. A half hour, under "Good of the order," is to be taken to discuss the subjects for the year, given by W. S. L. Goodenough.

With zest, we enjoy the literary half hour under W. L. Sister Leadbeater, who always has some members ready with readings or recitations, beginning with music by our organist, Sister Noyce. Quaint solos, duets and rousing grange songs make us feel that we will better grow, and love each other more, till palsied in death are the kindly hands that grasp our own.

On the 6th, a triple installation of officers of Stockton, Waterloo and Independent Granges was admirably carried out by W. S. L. Goodenough, Bro. Overhiser, and Sister Fine of Independent Grange.

Brightened by W. A. S. Lizzie Root's festoons, Sister Rumrel's and other bouquets, the hall was alight with redolent bloom which made us feel

"That Dame Nature, in her bounty, leaves us nothing to forgive
Right here in California, where it is a comfort just to live."

The feast, shared by 80, seemed a contradiction to low prices and hard times, but the poor were remembered.

The after-dinner speech by W. S. L. Goodenough was so replete with logical facts and figures showing the unremunerative toil of farmers and fruit-raisers compared with other callings; the gestures so natural and the language so plain, that it ought to have been published. Short days compelled many to go during its delivery, and deprived us of an instrumental treat by Sister Lottie Barber, but we had a pleasing vocal duet by Sister Bessie A'ling and A. S. N. H. Root.

Stockton, Jan. 15, 1894.

Tulare Grange.

TO THE EDITOR:—The regular semi-monthly meeting of Tulare Grange was held in its hall on Saturday afternoon, the 6th inst. All the elected officers for the ensuing year being present, were duly installed by the retiring master.

Bro. Shoemaker reported that, after paying expenses of Farmers' Institute in Visalia on the 11th of December, a balance of \$10 from the proceeds of concert on that evening was turned over to the Midwinter Fair fund.

Sister Bertha Ingham, from committee on resolutions on death of Bro. B. F. Moore, reported resolutions, which were ordered engrossed on the Grange minutes and a copy sent to the family of Bro. Moore; the charter to be draped for 30 days.

Bro. Shoemaker presented a resolution against the reduction of duties on imported fruits and in favor of the same duty on Zante currants as on raisins; copies to be sent to our Representatives in Congress. Carried without debate.

A talk was had on the usefulness of the order and the best way to promote and make known the same.

So much time being occupied in the business of the grange, the discussion on the future of wheat cultivation and marketing, set for this meeting, was laid over until next meeting.

State Lecturer Goodenough's subjects for grange consideration, as published in the RURAL PRESS, were read and filed for reference. By vote of the grange, the lecturer was requested to act as the grange reporter.

All members present showed enthusiasm in their work and a desire to assist in promoting the good work of the order.

Merced Grange.

Miss Emma Perry of Merced Grange writes to report an interesting meeting held on the 6th inst., when the officers for 1894 were installed as follows:

W. M., Mr. A. Bickford; O., H. C. Healy; L., Mrs. M. D. Atwater; S., Mrs. J. T. Lander; A. S., Miss Alice Peak; Chap., Mrs. A. Kahl; Sec., Miss Jessie Peck; T., Mr. M. D. Atwater; G. K., Miss Mattie Perry; Pomona, Miss Belle Clark; Flora, Miss Letitia Archibald; Ceres, Mrs. W. E. Elliott; L. A. S., Miss Emma Perry.

As there had been a harvest feast at the previous meeting, that feature was omitted; but the contents of many baskets were pooled in a "picnic lunch," which was greatly enjoyed. The best possible spirit prevails in Merced Grange, and there is every prospect for a good year's work.

RUDY'S PILE SUPPOSITORY is guaranteed to cure Piles and Constipation, or money refunded. 50 cents per box. Send stamp for circular and Free Sample to MARTIN RUDY, Lancaster, Pa. For sale by all first-class druggists.

—The Idaho State Wagon Road Commission has let contracts aggregating \$114,500 for the construction of a system of roads to connect the northern and southern sections of the State.

An Attractive Offer.

Readers of the PACIFIC RURAL PRESS need not be told of the high character and general value of the *Cosmopolitan Magazine*. It is a splendid monthly publication, a marvel of beauty and excellence.

We will send the PACIFIC RURAL PRESS and the *Cosmopolitan Magazine* to any address in the United States or Canada for twelve months for \$3.50. This is an attractive and unusual offer and will not long continue.

—The cold weather last week was a great boon to the "ice farmers" in the mountains. One company for the first crop harvested 3500 tons.

\$500,000

TO LOAN IN ANY AMOUNT AT THE VERY LOWEST MARKET rate of interest on approved security in Farming Lands. A. SCHULLER, Room 11, 508 Montgomery St., San Francisco (Pacific Mutual Life Insurance Building).

Hay Pressing.

If you are interested in pressing hay write Truman Hooker & Co., San Francisco. They will save you money

—The State Board of Examiners will pay no more coyote claims until a specific appropriation is made by the Legislature.

—Walter Cheadle, a Carson business man, in an open letter, advocates the building of a railroad from Carson to the Sacramento river, through Carson, Fredericksburg and Diamond valley, around the south end of Lake Tahoe, through Lake valley, then over the hill to Strawberry, down the American river to Placerville, and from there to the Sacramento river, putting the State in direct communication with the ocean and making Nevada a competitive point. He advocates the building of a road by the State by the issuance of three-per-cent bonds for \$3,000,000, redeemable in 50 years, with the Governor, Controller, Treasurer, Surveyor-General and Attorney-General as the board of directors. He advocates the formation of a new party, electing legislators on a platform which inflicts the death penalty on all who sell out to competing roads. He would make the Governor superintendent, with the power to appoint an assistant. He would fix the passenger rate at \$5 for a round-trip ticket to San Francisco, half a cent a pound the freight rate and \$10 for a carload.

You Dye in 30 minutes

Turkey red on cotton that won't freeze, boil or wash out. No other will do it. Package to color 2 lbs., by mail, 10 cts.; 6, any color—for wool or cotton, 40c. Big pay Agents. Write quick. Mention this paper. FRENCH DYE CO. Vassar, Mich.

Nerve Tonic **Blood Builder**

DR. WILLIAMS' PINK PILLS FOR PALE PEOPLE

Send for descriptive pamphlet

Dr. WILLIAMS' MEDICINE CO.,
Schenectady, N. Y.
and Brockville, Ont.

50c. per box.
6 for \$2.50.

FOR SALE CHEAP.

TEN 18" diam. suction and discharge

CENTRIFUGAL PUMPS,

WITH ENGINE ATTACHED.

—Together with—

NINE UPRIGHT BOILERS, 55" diam., 7' high

—Also—

TEN FOOT VALVES, and about 300 feet of 18" diam. STEEL FLANGED PIPE in 4, 8 and 12-foot lengths.

This machinery is practically new, and was built specially for use as a wrecking plant. The pumps have each a maximum capacity to deliver 60 tons of water per minute. The plant will be sold very low as a whole or separately.

These pumps are suitable for irrigating purposes or under any conditions where a large volume of water is required to be moved quickly and cheaply.

For price and other particulars, address

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PATENT SOLICITORS.

220 MARKET ST. S.F.
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WITH STANLEY'S Corrugated Steel Hinges. They are Stronger, Handsomer and cost no more than the old style. For sale by Hardware Dealers generally, but if not in your vicinity write the Manufacturers. Send for "Biography of a Yankee Hinge," mailed free

THE STANLEY WORKS, New Britain, Ct.

DOUBLE Breech-Loader \$6.00.

RIFLES \$2.00

WATCHES

BICYCLES \$15

At kinds cheaper than else where. Before you buy, send stamp for catalogue to POWELL & CLEMENT CO. 166 Main St., Cincinnati, O.

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LARGEST

All kinds of tools. For instance, the drill for using our Adams' patent pump, can take a core. Perfected Economy. Test Artesian Pumping Rigs to work by Steam, Air, etc. Let us help you. THE AMERICAN WELL WORKS, Aurora, Ill.; Chicago, Ill.; Dallas, Tex.

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LAMENESS, * * **SWELLINGS,**

SOOTHES, SUBDUES, CURES.

BACK-ACHE, SORENESS.

Seeds, Plants, Etc.

TREES! TREES!

IT HAS BEEN DEMONSTRATED IN THE PAST FEW years by the large number of trees sold by me that nursery stock grown on the river bottom of Sutter county is far superior to any grown in the State. I am prepared to supply in large or small quantities:

Bartlett Pears, Plums and Prunes
On Myrabalan Plum Roots.

—ALSO—

Cherries, Peaches, Apricots, Apple, Almond Trees, Etc.

Special Rates on Large Orders.
Send for Price List for 1893-94.

James T. Bogue, Marysville, Cal.

Santa Rosa Nurseries.

AN IMMENSE AND WELL
ASSORTED STOCK.

TREES TRUE TO NAME.—Warranted clean and raised without irrigation.

PEARS AND PRUNES at about HALF USUAL PRICES till my surplus is sold.

Price List mailed free.

Address **R. W. Bell, Santa Rosa, Cal.**

E. J. BOWEN, SEED MERCHANT.

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Grass, Clover, Vegetable and Flower Seeds, Onion Sets.

LARGEST STOCK AND MOST COMPLETE ASSORTMENT.

Illustrated, Descriptive and Priced Seed Catalogue for 1894 mailed free to all applicants. Address

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315 & 317 Sansome St., San Francisco, Cal.
65 Front Street, Portland, Or.
or 214 Commercial St., Seattle, Wash.

San Ramon Valley Nursery.

Surplus Stock of

ALMONDS, 8 Varieties.

PEACHES, 4 Varieties.

PRUNES, 3 Varieties.

At very **LOW PRICES.** Also an assortment of other varieties of Fruit Trees.

WRITE FOR PRICES ON STOCK YOU NEED.

BALDWIN & STONE,

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FERRY'S SEEDS

Are just what every sower needs. The merits of Ferry's Seeds form the foundation upon which has been built the largest seed business in the world. Ferry's Seed Annual for 1894 contains the sum and substance of the latest farming knowledge. Free for the asking.

D. M. FERRY & CO.,
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Trees, Vines and Plants,

—FOR 1893 and 1894.—

Terms on Application.

Address, **L. D. BUTT,**

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B. F. GODFREY & CO.,

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Write for Catalogue and Prices.



VINCENT'S Colossal Pansies.

This pure strain of Pansies cannot be surpassed for brilliancy of colors, mammoth size, luxuriant growth and rich blending of gay colors, while their profusion of bloom is truly wonderful. The flowers possess great substance and are of the most perfect form, and frequently measure three or four inches across. There are over one hundred different shades and markings, the numerous blendings and combinations being of exquisite beauty. This lovely strain is so beautiful that no description or praise can do it justice, and we can safely say that those who sow this strain are sure to be delighted. By Mail, 1 Pkt. 40c.

We will mail free, on application, our Beautifully Illustrated Catalogue containing description and prices of GRASS, VEGETABLE AND FLOWER SEEDS of all descriptions; FRUIT TREES, etc. It will be to your advantage to send for it. Address: **SEVIN VINCENT & CO., 607 Sansome St. San Francisco.**

STOCKTON NURSERIES,

—ESTABLISHED 1853.—

FRUIT TREES. FRUIT TREES.

—GRAPE VINES.—

Also Fine Stock of Shade and Ornamental Trees, Shrubs, Palms, Roses and Carnations.

PLANTS IN GREAT VARIETY.

Correspondence Solicited.

E. C. CLOWES, STOCKTON, CAL.

McKEVITT'S EARLY.

The New Yellow Freestone Peach!
—FIRST AND BEST OF EARLY YELLOW PEACHES.—

RIPENS IMMEDIATELY AFTER THE ALEXANDER (White Cling), which is the earliest peach in market.

Fruit is round, of medium size, **VERY HIGHLY COLORED**, flesh firm and sweet.

THIS PEACH HAS BEEN SUCCESSFULLY SHIPPED EAST FOR FIVE YEARS and is no new, untried variety.

Tree healthy, strong grower, and heavy bearer, never having missed a crop.

A limited number of yearling trees for sale this season. Apply early before stock is exhausted.

FRANK B. McKEVITT, : : : : VACAVILLE, CAL.

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THOMAS MEHERIN,

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SEEDS.—Kentucky Blue Grass, Clover, Vegetable, Flower and Tree Seeds—**SEEDS.**

PRICE CATALOGUE MAILED ON APPLICATION.

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NEW CATALOGUES NOW READY.

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Fruit and Nut Trees propagated from bearing orchards at Sausal Fruit Farm; Unirrigated, Clean and Healthy.

Do not fail to correspond before making purchases. Satisfaction guaranteed.

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A pamphlet on Almonds mailed free of charge on application. A large supply of the **GOLDEN PEACH** and **FRENCH PRUNE.** All kinds of leading fruit trees for sale. No charges made for baling trees.

NO CHARGE FOR BALING.

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LODI, - San Joaquin Co., Cal.
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Royal Blenheim and French APRICOTS, I.X.L., Nonpareil, Ne Plus Ultra and Texas Prolific ALMONDS.

FRENCH PRUNES, TRAGEDY PRUNES, PEACHES, APPLES and PEARS
In Variety,

No. 1 Yearling Trees, also June Bud Trees
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OLIVE TREES

In Variety for Nurserymen,
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Will also contract now to propagate Rooted Olive Cuttings for persons who wish to plant them in nursery spring of 1894.

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Sixteen pages, mailed free.

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A NO. 1 TREES,

Two-Year-Old, 4 to 6 feet High.

Extra inducements offered to intending buyers both as regards choice trees and very low prices. Order at once or open correspondence with me.

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ALL KINDS OF

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Send and get book on Olive Culture.

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Twelve years experience has taught me how to PROPERLY root the olive. No artificial heat used.

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For Sale at Low Rates, a General Assortment of Hardy Deciduous Fruit Trees.

I do not buy trees to sell; what is offered is grown in my own grounds and free from scale bugs. No scale bugs of any kind to be found in the nursery. No agents employed. Order direct from the nursery and procure your trees true to label. Order early, as early planting is the most successful with deciduous trees. Prices furnished on application.

Address **W. H. PEPPER** Petaluma, Cal.

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A SUPERIOR QUALITY OF APRICOT.
Fine for Canning, Drying and Shipping.

They run 3 and 4 to the pound. The Largest and Finest fruit of the Apricot variety.

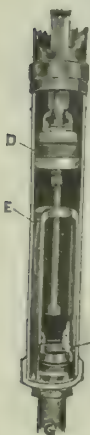
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BUY NORTHERN GROWN TREES

Grown on high rolling fir land without irrigation or manure. **250,000 Prunes**—French, Italian, Silver and Golden. **Peaches**—E. Crawford, Alexander, Amenden, Foster, Muir, Malta, and 20 other kinds, including Early Charlotte, the greatest peach that Nature has yet invented. (Write to us about it.) **Plums**—Burbank, Satsumas, Ogon, Olyman, Tragedy, Botton, Columbia, and a dozen others. **Clark's Early Strawberry.** If you want the above in quantity, we will give you the finest trees grown, healthy, true to name and at unprecedentedly low prices. Address **PILKINGTON & CO.,** Portland, Or., or Dr. **J. B. Pilkington,** Los Angeles, Cal.

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The valves and working parts of the Fulton Pump can be removed, repaired and replaced without taking the pump out of the well.

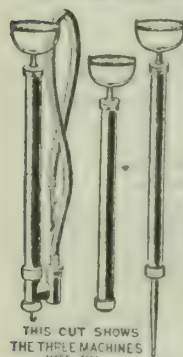
Pumps fitted up for all depths of wells, ready to put in.

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\$15 SPRAY PUMP FOR \$7 EXPRESS PAID.



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WILL SPRAY TEN ACRES PER DAY.

Endorsed by the Leading Entomologist of the United States.

Satisfaction guaranteed or money refunded.

A valuable illustrated book on our insect pests given to each purchaser.

We will put this pump in competition with any other pump made, costing \$15 or less. Address

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Only General Agent of the Pacific Coast.



THE Porteous Improved Scraper

Patented April 8, 1883. Patented April 17, 1883.



Manufactured by G. LISSENDEN.

The attention of the public is called to this Scraper and the many varieties of work of which it is capable such as Railroad Work, Irrigation Ditches, Levee Building, Leveling Land, Road Making, etc.

This implement will take up and carry its load to any desired distance. It will distribute the dirt evenly on deposit its load in bulk as desired. It will do the work of Scraper, Grader, and Carrier. Thousands of these Scrapers are in use in all parts of the country.

This Scraper is all steel—the only one manufactured in the State.

Price, all Steel, four-horse, \$40; Steel two-horse, \$21.

Address all orders to G. LISSENDEN, Stockton California.

DIVIDEND NOTICE.

THE GERMAN SAVINGS AND LOAN SOCIETY,

526 CALIFORNIA STREET.

For the half year ending December 31, 1893, a dividend has been declared at the rate of five and one-tenth (5 1-10) per cent per annum on term deposits, and four and one-quarter (4 1-4) per cent per annum on ordinary deposits, payable on and after Tuesday, January 2, 1894.

GEO. TOURNEY, Secretary.

TREE WASH. OLIVE DIP.

"Greenbank" Powdered Caustic Soda and Pure Potash.

T. W. JACKSON & CO.,

Sole Agents,

No 5 Market Street, San Francisco, Cal.

RED SEAL GRANULATED 98% LYE

HAS NO EQUAL

FOR DESTROYING SCALE BUGS AND OTHER INSECT PESTS ON TREES AND PLANTS.

FOR TREE WASH!

—OR—

One pound to 5 gallons of water.

Thousands of Orchardists testify to its value, using it in preference to all other preparations. Where the Red Seal is applied it kills the insects and at the same time forms a coating through which others cannot penetrate. When used in the above proportions, it is a

GREAT BENEFIT TO THE TREES.

Put up in SIFTING-TOP CANS, so that any quantity may be used and the balance preserved uninjured.

MANSFIELD LOVELL,

124 California St., San Francisco.



SOLD

—BY—

ALL GROCERS.

FOR HOUSEHOLD PURPOSES

The Red Seal Lye is indispensable.

USED AS DIRECTED it will take the place, and at 75% less cost, of all other alkaline preparations, soaps, etc., now on the market. ONE CAN will make 10 to 12 lbs. of Hard Soap, or 200 lbs. of Soft Soap. See directions in can.

It cleans floors, kills roaches and bugs of all kinds, cleans milk vessels, tin or wood; keeps farming implements bright and free from rust; is a perfect disinfectant; softens water, washes dishes and clothes; and can be put to a thousand uses in place of soap or other preparations.

P. C. TOMSON & CO.,

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CALIFORNIA PRODUCTS.

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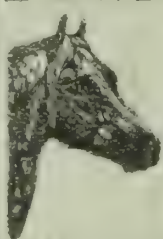
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First Prizes at the World's Columbian Exposition, 1893.

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THE H. H. H. LINIMENT

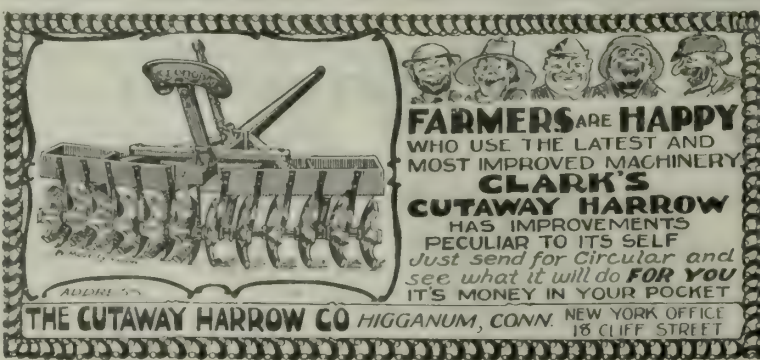
HAS STOOD THE TEST OF TWENTY-FIVE YEARS' USE AND TO-DAY IS BETTER KNOWN AND MORE EXTENSIVELY USED THAN ANY OTHER LINIMENT.

Some reasons why you should keep H. H. H. Liniment:

- 1st—Because it is the best for Man or Beast.
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H. H. MOORE & SONS, Druggists,

SOLE PROPRIETORS.....STOCKTON, CAL.



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STANDARD TIME.

This Solid 14 K Gold Htg. Case Ladies' Watch, Waltham or Elgin Mvt., \$30. In 14 K Filled Case, O. F., \$17; Htg. \$18. Ladies' O. F. Silver Swiss Watch, \$5.

Gentlemen's

Watches, Waltham

or Elgin Mvt. In—

Solid 14 K Gold Htg.

Case, \$45; 14 K Filled

Htg. Case, \$20; 10 K

Filled Htg. Case, \$18;

Heavy Nickel Htg.

Case, \$7.50; 2 oz. Coin

Silver Htg. Case, \$12;

3 oz. Coin Silver Htg.

Case, \$13.50; 4 oz. Coin

Silver Htg. Case, \$15.50;

P. M. Bartlett

Mvt., In Solid 14 K

Gold Htg. Case, \$50;

14 K Filled Htg. Case, \$25; 4 oz. Coin Silver Htg. Case, \$20.

"Appleton, Tracy & Co. Mvt., \$10 extra." "Grescott Street

Mvt., \$15 extra." All Watches stem wind and set. 14 K

filled cases guaranteed for 21 years. FINE WATCH

REPAIRING. Diamonds, Watches and Fine Jewelry sent

C. O. D. with privilege of examination, on receipt of \$1 to

guarantee charges, or sent express or postpaid if cash accom-

panies the order. Correspondence solicited. Particular

attention paid to mail orders. When you visit the Mid-

winter Exposition call and inspect my stock. AGENTS

WANTED **JOHN H. DRUGGOLD,** Manufacturer

ing Jeweler, Watches and Diamonds, Room 113,

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HAYWARD'S SHEEP DIPS

Hayward's famous Paste and Liquid Dips received the Highest Award at the World's Columbian Exposition, also the Prize Medal at the California State Fair. Dips from all over the world were exhibited at Chicago and practical sheep men pronounced Hayward's the best and most effective medicine for the cure of scab and general benefit to wool.

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PLAIN AND NITROGENOUS
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GUANO FLOUR.

Complete and Special Fertilizers

FOR ALL KINDS OF

Fruit, Grain, Sugar Beets, Vegetables, Etc.

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CANCER CURED

WITH SOOTHING BALMY OILS.

WE SUCCESSFULLY TREAT

Cancer, Tumor, Catarrh, Piles, Fistula, Eczema and all Skin and Womb Diseases.

CANCER of the nose, eye, lip, ear, neck, breast, stomach or womb; in fact, all diseased internal and external organs or tissues, successfully treated, without the knife or burning caustic plasters, but with soothing, balmy magnetic oils. Beware of imitations as there are those who hope to profit by advertising an oil cure for these diseases. We are the originators of this system, all others are frauds.

Correspondence solicited. Consultation free. Testimonials furnished. Address

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CANCER.

THE KOEHLER CANCER CURE CO.,

1428 Market St., San Francisco.

CANCER, Tumors or Malignant Growths removed without knife or caustic. A GUARANTEED CURE a specialty. Call or send for circular. Over 300 cancers preserved in alcohol in our office. Consultation free.

PHILIP KOEHLER, Manager.

S. F. MARKET REPORT

Market Review.

SAN FRANCISCO, Jan. 17, 1894.

The wheat market is not perceptibly changed since last week and there is no likelihood of change during the week to come. Shippers are not buying anything, and their inaction of course tends to create a feeling of discouragement. In speculative circles there is moderate activity, but operations in the Call Board do not stimulate export trade. Prices are low enough, it would seem, to invite liberal buying on the part of shippers, but the situation abroad does not justify local exporters in purchasing largely. Quotable at \$1.02½ per cwt for No. 1 Shipping, with \$1.03½ for choice offerings. The range for milling grades is \$1.06½ to \$1.08½ per cwt.

Barley.

The market is somewhat sensitive. During the closing days of last week quite a firm tone developed in values, which was partly attributed to dry weather. But the rain of Monday changed the situation. Nobody wanted to buy, while sellers were more than disposed to accept reduced figures. With the return of sunshine, however, confidence is again asserted, and, at the moment, the outlook is rather promising than otherwise for sellers. We quote: Feed, 72½ to 75¢ per cwt. for fair to good quality, 76½ to 77½¢ for choice bright; Brewing, 82½ to 90¢ per cwt.

Dried Fruits.

Dullness is still a feature of the market. Stocks are light of about all kinds except Prunes and Raisins. Apples are quite scarce and sellers have the advantage. Apricots are also in slim offering. Choice Peaches are also in light receipt. Apples, 5 to 5½¢ per lb for quartered, 5 to 5½¢ for sliced, and 8 to 9¢ for evaporated; Pears, 4 to 8¢ per lb for bleached halves, and 4 to 5¢ for quarters; Peaches, 6 to 8¢; sun-dried peaches, 4 to 5¢; Apricots, Moorpark, 11 to 13¢; do Royals, 10 to 11¢ for bleached and 6 to 7¢ for sun-dried; Prunes, 4½¢ per lb for the four sizes, and 2 to 4¢ for ungraded; Plums, 5 to 5½¢ for pitted and 1½ to 2¢ for unpitted; Figs, 3 to 4¢ for pressed and 1½ to 2¢ for unpressed; White Nectarines, 6 to 7¢; Red Nectarines, 5 to 6¢ per lb.

General Produce Market.

OATS—Offerings are of fair proportions, though the amount of strictly choice stock is comparatively small. There is fairly brisk movement and the outlook is generally considered promising for both trade and values. We quote as follows: Milling, \$1.15 to \$1.22½; Surprise, \$1.22½ to \$1.32½; fancy feed, \$1.20 to \$1.22½; good to choice, \$1.12½ to \$1.17½; poor to fair, 92½¢ to \$1.07½; Black, 85¢ to \$1.22½; Gray, \$1.05 to \$1.15 per cwt.

CORN—An easy feeling prevails. Stocks are liberal, but there is no selling pressure, and this circumstance helps to sustain matters. Quotable at 80 to 82½¢ per cwt. for large Yellow, 90 to 92½¢ for small Yellow, and 90 to 92½¢ for White.

CRACKED CORN—Quotable at \$20.50 to \$21.50 per ton.

CORNMEAL—Millers quote feed at \$20 to \$21 per ton; fine grades for the table, in large and small packages, 2½ to 3½¢ per pound.

OILCAKE MEAL—Quotable at \$37.50 per ton from the mill.

SEEDS—We quote. Mustard, brown, \$2.75 to \$3; Yellow, \$3.25 to \$3.50; Canary, imported, \$4 to \$4.25; do, California, —; Hemp, 3½¢ per lb; Rape, 1½ to 2½¢; Timothy, 6½¢ per lb; Alfalfa, 8 to 9¢ per lb; Flax, \$2.25 to \$2.50 per cwt.

CHOPPED FEED—Quotable at \$17.50 to \$18.50 per ton.

MIDDLINGS—Quotable at \$18 to \$20 per ton.

MILLSTUFFS—We quote: Rye Flour, 3½¢; Rye Meal, 3¢; Graham Flour, 3¢; Oatmeal, 4½¢; Out Groats, 5¢; Cracked Wheat, 3½¢; Buckwheat Flour, 5 to 5½¢; Pearl Barley, 4 to 4½¢ per lb; Normal Nutrient, \$3 per case of 1 dozen cans; Breakfast Delight, \$3.25 per case of 2 dozen packages.

BRAN—Quotable at \$16 to \$17 per ton.

HAY—The late rain has given the market easier tone. Wire-bound hay sells at \$1 to \$2 per ton less than rope-bound hay. Following are wholesale city prices for rope-bound Hay: Wheat, \$10 to \$14; Wheat and Oat, \$10 to \$13; Wild Oat, \$10 to \$12; Alfalfa, \$8 to \$10; Barley, \$9 to \$11; Compressed, \$11 to \$12.50; Stock, \$8 to \$10 per ton.

STRAW—Quotable at 45 to 55¢ per bale.

HOPS—Market quiet and likely to keep so. Quotable at 15 to 18¢ per lb.

RYE—Quotable at \$1 to \$1.02½ per cwt.

BUCKWHEAT—Quotable at \$1.20 to \$1.30 per cwt.

GROUND BARLEY—Quotable at \$16.50 to \$17.50 per ton.

POTATOES—No scarcity of supplies. We quote: New Potatoes, 2½ to 3¢ per lb; Sweet, \$1 to \$1.50 per cwt; Garnet Chiles, 45 to 55¢; Early Rose, 40 to 50¢; River Burbanks, 35 to 45¢; River Red, 37½ to 40¢; Salinas Burbanks, 70 to 85¢ per cwt.

ONIONS—Are firm in price. Quotable at \$1.10 to \$1.40 per cwt.

DRIED PEAS—We quote: Green, \$1.50 to \$1.65; Blackeye, \$1.60 to \$1.65; Niles, \$1.50 to \$1.60 per cwt.

BEANS—Steady tone to values. We quote: Bayos, \$1.95 to \$2.10; Butter, \$1.75 to \$1.90 for small and \$2 to \$2.25 for large; Pink, \$1.40 to \$1.75; Red, \$1.75 to \$2.10; Lima, \$2.10 to \$2.15; Pea, \$2.10 to \$2.30; Small White, \$2 to \$2.15; Large White, \$2 to \$2.10 per cwt.

VEGETABLES—The supplies are very light. We quote as follows: Asparagus, 10 to 20¢ per lb; Mushrooms, — to —¢ per lb for common and — to —¢ per lb for good to choice; Rhubarb, — to —¢ per lb; Green Peas, 6 to 10¢; String Beans, 25 to 30¢; Marrowfat Squash, \$7 to \$8 per ton; Green Peppers, 8 to 10¢ per lb; Tomatoes, 50¢ to \$1.25 per box; Turnips, 75¢ per cwt; Beets, 75¢ to \$1 per sack; Parsnips, \$1.25 per cwt; Carrots, 40 to 50¢; Cabbage, 50 to 55¢; Garlic, 3 to 4¢ per lb; Cauliflower, 60 to 70¢ per dozen; Dry Peppers, 5 to 7¢ per lb; Dry Okra, 15¢ per lb.

FRESH FRUIT—For first-class apples there is steady demand, but inferior qualities are not wanted even for peddling trade. We quote prices as follows: Apples, 75¢ to \$1 per box for good to choice, and 25 to 65¢ for common to fair; Choice mountain Apples, \$1.25 to \$1.50 per box;

Persimmons, 50 to 85¢ per box; Cranberries, Eastern, \$8 to \$8.50 per bbl.

CITRUS FRUIT—We quote as follows: Fair to choice Navel Oranges, \$1.25 to \$1.90 per box; Seedlings, 75¢ to \$1.25; Mandarin Oranges, 65¢ to \$1 per box; Mexican Limes, \$6 to \$7 per box; Lemons, Sicily, \$4 to \$5; California Lemons, \$1 to \$2 for common and \$2.25 to \$3 for good to choice; Bananas, \$1.50 to \$2.50 per bunch; Hawaiian Pineapples, \$2.50 to \$3; Mexican Pineapples, \$3 to \$4 per dozen.

RAISINS—In heavy supply at weak prices. We quote as follows: London Layers, \$1 to \$1.25; loose Muscates, in boxes, 75 to 90¢; clusters, \$1.50 to \$1.75; loose Muscates, in sacks, 2½ to 3¢ per pound for 3 crown; 2 to 2½¢ for 2 crown; Dried Grapes, 1 to 1½¢ per pound.

NUTS—Trade is of very small proportions. We quote as follows: Chestnuts, 8¢ per lb; Walnuts, 6½ to 7¢ for hard shell, 8½ to 9¢ for soft shell and 9¢ for paper shell; Chile Walnuts, 8 to 9¢; California Almonds, 10 to 11¢ for soft shell, 6 to 7¢ for hard shell and 11½ to 12½¢ for paper shell; Peanuts, 3 to 4¢; Hickory Nuts, 5 to 6¢; Filberts, 10 to 10½¢; Pecan, 8 to 9¢ for rough and 11¢ for polished; Brazil Nuts, 10 to 11½¢; Coconuts, \$4 to \$5 per 100.

HONEY—Business slow and limited. Prices easy. We quote: Comb, 10½ to 11½¢ per lb for bright, and 8 to 10¢ for dark to light amber; light amber, extracted, 4½ to 5¢; dark, 4½ to 4¾¢; water white, extracted, 5 to 5½¢ per lb.

BEEWAX—Quotable at 22 to 23¢ per lb.

BUTTER—Prices are depressed under increasing receipts. Dealers are not inclined to carry stock, and anxiety to sell shapes the situation favorably for buyers. Fancy creamery, 24 to 26¢; fancy dairy, 22 to 24¢; good to choice, 20 to 21¢; common grades, 17 to 19¢ per lb; pickled roll, 17 to 19¢; firkin, 15 to 18¢.

CHEESE—Supplies are moderate. Values are unchanged. We quote as follows: Choice to fancy new, 12 to 13¢; fair to good, 9 to 11¢; Eastern, ordinary to fine, 11 to 14¢ per lb.

EGGS—Values have been steady for several days, and a slight advance in ranch parcels has been established. We quote: California ranch, 25 to 27¢; store lots, 22 to 24¢; Eastern Eggs, 18 to 21¢ per dozen.

POULTRY—The market continues in bad shape for sellers. Stocks are large, while the demand is slow. Prices weak all round. We quote as follows: Live Turkeys—Gobblers, 10 to 11¢ per lb; Hens, 10 to 11¢; dressed Turkeys, 12½ to 14¢; Roosters, \$4 to \$4.50 for old and \$4 to \$5 for young; Fryers, \$4 to \$4.50; Broilers, \$3 to \$4; Hens, \$4 to \$5.50; Ducks, \$4 to \$5; Geese, \$1.50 to \$1.75 per pair; Pigeons, \$1 to \$1.25 per doz for old and \$1.50 to \$1.75 for young.

GAME—Market very badly demoralized. Stock goes for about anything that buyers choose to pay. We quote as follows: Quail, 75¢ to \$1 per dozen; Canvasbacks, \$2.50 to \$3.50; Mallard, \$2 to \$2.50; Widgeon, 50 to 75¢; Teal, 50 to 75¢; Sprig, \$1; Small Ducks, 50 to 65¢; Gray Geese, \$1.75 to \$2; White Geese, 50 to 75¢; Brant, 75¢ to \$1; English Snipe, \$1 to \$1.25 per doz.; Common Snipe, 50 to 60¢ per doz.; Honkers, \$2.50 to \$3; Hare, 75¢ to \$1; Rabbits, \$1 to \$1.50 per doz.

PROVISIONS—We quote as follows: Eastern hams, 12 to 12½¢ per lb; California hams, 11 to 12¢; Bacon, Eastern, extra light, 15½ to 17¢; medium, 11 to 11½¢; do, light, 12¢; do, light, clear, 13 to 13½¢; light, medium, boneless, 12½¢; Pork, prime mess, \$14 to \$15; do, mess, \$18 to \$19; do, clear, \$21; do, family, \$24 per bbl; Pigs' Feet, \$12.50 per bbl; Beef, mess, bbls, \$7.50 to \$8; do extra mess, bbls, \$8.50 to \$9; do, family, \$9.50 to \$10; extra do, \$11 to \$11.50 per bbl; do, smoked, 10 to 10½¢; Eastern lard, tierces, 8 to 8½¢; do prime steam, 10½¢; Eastern pure, 10-lb pails, 11½¢; 5-lb pails 11½¢; 3 lb, 11½¢; California, 10-lb tins, 10½¢; do, 5-lb, 11¢; do, kegs, 11½ to 12¢; do, 20-lb buckets, 11¢; compound, 8¢ for tierces and 8½¢ for hf bbls.

WOOL—Trade continues dull in local circles, and the same condition of affairs is reported at distant centers. We quote spring:

California, year's fleece, 7 to 8¢; do 6 to 8 months, 7 to 9¢; do Footbill, 10 to 11¢; do Northern, 12 to 13¢; do extra Humboldt and Mendocino, 11 to 13¢; Nevada, choice and light, 12 to 14¢; do heavy, 8 to 10¢; Oregon, Eastern, choice, 10 to 12¢; do Eastern, poor, 7 to 9¢; do Valley, 12 to 15¢. We quote fall: Free Mountain, 6 to 8¢; Northern defective, 5 to 7¢; Southern and San Joaquin, 3 to 5¢.

HIDES AND SKINS—Quotable as follows:

	Sound.	Culls.
Heavy Steers, 57 lbs up, ½ lb.	4 @—	4 @—
Medium Steers, 48 to 56 lbs.	4 @—	3½ @—
Light, 42 to 47 lbs.	3 @3½	2½ @3—
Cows, over 50 lbs.	3 @3½	2½ @—
Light Cows, 30 to 50 lbs.	3 @—	2½ @—
Stags.	2½ @—	2 @—
Kips, 17 to 30 lbs.	4 @—	3 @—
Veal Skins, 10 to 17 lbs.	5 @—	4 @—
Calf Skins, 5 to 10 lbs.	7 @—	6 @—
Dry Hides, usual selection, 7c;		
Calf Skins do, 7c; Cull Hides, Kip and Calf, 4c; Pelts, Shearling, 10 to 20c each; do, short, 25 to 35c each; do, medium, 40 to 50c each; do, long wool, 50 to 75c each; Deer Skins, summer, 25c; do, good medium, 15c; do, winter, 5¢ per lb; Goat Skins, 25 to 40c apiece for prime to perfect, 10 to 20c for damaged, and 5 to 10c each for Kids.		

TALLOW—We quote: Refined, 5½¢; rendered, 4½ to 4¾¢; country Tallow, 4 to 4¾¢; Grease, 3 to 3½¢ per lb.

San Francisco Meat Market.

The supply of Beef is ample for all immediate needs. Of Mutton and Lamb there is no surplus, and quotations still show steady tone. Following are the rates for whole carcasses from slaughterers to dealers:

BEEF—First quality, 5½ to 6¢; second quality, 4½ to 5¢; third quality, 3½ to 4¢ per lb.

CALVES—Quotable at 4 to 5¢ for large, and 6 to 7¢ per lb for small.

MUTTON—Quotable at 6 to 7¢ per lb.

LAMB—Quotable at 7 to 8¢ per lb.

PORK—Live Hogs, on foot, grain fed, heavy and medium, 4½¢; small Hogs, 5¢; stock Hogs, 4½ to 4¾¢; dressed Hogs, 7 to 7½¢ per lb.

LOANS AND MINES

Loans negotiated on first-class securities. Mines and mining prospects of guaranteed value sold on working bonds. O. H. DWINELLE, Grand Hotel, San Francisco, Cal.

Good Lemonade.

For a quart I take the juice of three lemons, using the rind of one of them. I am careful to peel the rind very thin, getting just the yellow outside; this I cut into pieces and put with the juice and powdered sugar, of which I use two ounces to the quart, in a jug or jar with a cover. When the water is just at the tea point I pour it over the lemon and sugar, cover at once and let it get cold. Try this way once, and you will never make it any other way.—Scientific American.

SPECIAL ANNOUNCEMENT.

We have made arrangements with Dr. B. J. Kendall Co., publishers of "A Treatise on the Horse and his Diseases," which will enable all our subscribers to obtain a copy of that valuable work free by sending their address (enclosing a two-cent stamp for mailing same) to Dr. B. J. KENDALL CO., ENOSBURGH FALLS, VT. This book is now recognized as standard authority upon all diseases of the horse, as its phenomenal sale attests, over four million copies having been sold in the past ten years, a sale never before reached by any publication in the same period of time. We feel confident that our patrons will appreciate the work, and be glad to avail themselves of this opportunity of obtaining a valuable book.

It is necessary that you mention this paper in sending for the "Treatise." This offer will remain open for only a short time.

A Worthy Institution.

Established in 1863, the Pacific Business College of this city has had a successful business career for over thirty years and has trained thousands of young men and women in business methods. The terms "old" and "reliable" can well be applied to this institution, its name and fame are as extensive as the field it covers and its thorough practical system commends it to the thoughtful attention of our readers. Write to Prof. T. A. Robinson, 320 Post St., San Francisco, Cal., for a circular or a copy of the college paper.

Eclipse Corn Planter.

Testimonials to the worth, merit and value of the Eclipse Corn Planter are so many that it is evident this popular planting machine gives universal satisfaction wherever tried. Every one who uses it commends it, and any one who thinks of buying a corn planter would do well to inquire for the Eclipse, manufactured by the Eclipse Corn Planter Co. of Enfield, New Hampshire.

—Two large ocean steamers are now en route from the Atlantic coast for Puget Sound; they will arrive there some time next month, and will carry passengers and freight between Sound points and San Francisco during the Midwinter Fair period. The vessels are said to be the property of the Canadian Pacific Railroad Company.

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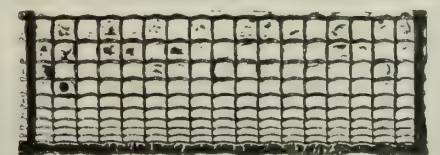
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What Pearls are Made of and Where They are Found.

Very few people are aware that the pearl oyster is not in any way like the oysters which we eat. It is of an entirely different species, and, as a matter of fact, the shells of the so-called pearl oyster are of far more value to those engaged in "pearl fishing" than the pearls, says *Harper's Young People*. There are extensive pearl fisheries in the Gulf of California, and some of the finest pearls have been taken from these waters. In 1881 one pearl, a black one, was sold for \$10,000, and every year since that time many pearls have been taken from the beds in the Californian gulf valued at \$7500 each. But such "finds" are very rare, and, as a rule, the pearls which are brought up are of very little value. The shells, however, are very valuable; most of them are shipped to Europe, where they are manufactured into ornaments, knife handles, buttons, and various other articles for which "mother of pearl" is used.

Another fact concerning the pearl oyster and the pearl itself is very little understood. I have seen in books of instruction, both in this country and in England, the statement that "the formation of the pearl in the oyster shell is caused by a disease of the oyster;" and this statement is more or less generally believed, as is also the erroneous inference to be drawn from it, that the oyster referred to is the edible oyster. The mother of pearl is nothing more than a series of layers of nacreous matter deposited by the oyster upon the interior of the shell, and the pearl itself is a perfectly accidental formation. It is caused by a similar deposit of nacre around some foreign object. This foreign substance may be a grain of sand, a parasite or some similar object; but most authorities agree that it is more usually an undeveloped egg of the oyster around which the natural deposit is thrown.

The largest pearl ever found measures two inches long and weighs three ounces. This is of Eastern origin. The largest found in the Gulf of California did not exceed an inch and a quarter long, and was somewhat larger than the egg of a bluebird. Many of the Californian pearls are black and speckled. These are considered more valuable than the white pearls in Europe, but the most highly prized pearls of all are pink.

Hypnotism in Disease.

The chief arguments used against the employment of hypnotism in disease are, first, that it subordinates and enervates the will; second, that it renders the patient liable to be influenced by persons of evil intent; and third, that only nervous or hysterical persons are subject to its influence, says James R. Cooke, M. D., in *Arena*. My own experience is that it may be used without injurious effects, and also that it may take the place of narcotics in a large number of cases in which they are now used. I have myself used it with advantage in delirium, in insanity and in chronic alcoholism. I have successfully treated one case of kleptomania and two cases of excessive irritability of temper. At the same time hypnotism is a two-edged sword. Wielded by an unskilled hand, it may cut both ways deep into the faculties of intellect and into the nervous system generally. Also, it should never be used save by a skilled hand upon patients of an unbalanced mind accompanied by what is known in medical parlance as *paranoia*. In my treatment of a perfectly healthy, calm, intelligent, unimaginative man, whom I operated on 51 times, I found that the diapason of his whole mental and emotional system would give forth concordant sensations of pleasure or discordant sensations of pain, at the will of the operator.

Summing up, I would say that in hypnotism, as with every other new remedy, there is great danger that, on the one hand, it may be used indiscriminately, or, on the other hand, be scouted by a senseless skepticism. It has, beyond doubt, its definite limits of usefulness, and the medical man of the present day, realizing the futility of many of the old methods of treating disease, should keep his mind open to the reception of every new discovery.

—The reported consolidation of the Southern Pacific Milling Company and the Southern Mill and Warehouse Company is affirmed by Manager F. H. Wheelan of the latter corporation. The consolidation will now be known as the Southern Pacific Milling Company, with headquarters at San Francisco. The warehouse company's interests were confined to Santa Barbara and Ventura counties, with the central office in this city, while those of the other lay between Santa Margarita and Soledad.

Some Interesting Dates.

The apple-parer was given to the public in 1803. At the present day, one Eastern firm makes over 27,000 a year.

Matches were first invented in 1839, and it is estimated that 75,000,000 a day are burned by the people of the United States.

The blast furnace was devised in 1842. In 1890 the United States alone made 9,000,000 tons of iron and 4,277,000 tons of steel.

Washboards with a metal face were patented in 1849; now the backs of the American women are weekly bent over 6,000,000 of these useful articles.

Window glass was first used in modern times in 1557. Now the consumption of plate glass alone exceeds 6,000,000 square feet in England and 9,000,000 in the United States.

A machine for making tacks was patented in 1806, but not put into practical use until near the middle of the century. Now the world consumes 50,000,000 tacks a day.

The nail machine was invented in 1775. At the present time it is estimated that 4,000,000,000 nails are annually made by machinery in Great Britain alone, and from a fourth to a half of this number in the United States.

The first forks made in England were manufactured in 1608. Their use was ridiculed by the men of the time, who argued that the English race must be degenerating when a knife and spoon were not sufficient for table use. Last year a Sheffield firm made over 4,000,000.

Breech-loading rifles were invented in 1811, but did not come into general use for many years. It is estimated that over 12,000,000 are now in actual service in the European armies, while 3,000,000 more are reserved in the arsenals for emergencies. Statisticians say that there are 100,000,000 guns of all kinds in the world.

The railroad system of this country began in 1827. Now there are 214,528 miles of track in the United States, and 354,310 in the world. The number of passengers carried by the United States railroads in 1892 was 555,025,802, and the total earnings were \$1,138,024,459. The capital stock was \$4,800,176,651, and the dividends \$90,719,757. The number of men employed was 784,285.

The harvester was invented by McCormick in 1831. Since that time this machine has been brought to such perfection that, it is said, it will cut and bind an acre of grain in 45 minutes. To such an extent has machinery superseded hand work in the grain farms of the Northwest that it is estimated that the labor of one man will raise enough grain to support a thousand men for a year, while the labor of a second will transport it to market, and that a third will prepare it for food.

—The California and Nevada Southern railroad will reach Iron county in southern Utah in four and one-half or five months. The line is being pushed right along. It will connect with the Rio Grande Western at Provo. This line will give Utah a direct route to southern California, and by next July it is expected that a through train will be run between Ogden and Los Angeles. The new line starts from a point 100 miles north of Goff, Cal., on the Atlantic and Pacific, and extends through southern Nevada to Iron county, Utah, where the company owns coal and iron properties, there to connect with an extended line from the Rio Grande Western. There is unlimited capital behind this road, and the track will be constructed so as to make it a fast and safe line. The grade will not exceed 1½ per cent anywhere, notwithstanding the rough country through which it passes. Already \$600,000 has been expended for engineering work alone.

—The longest drawbridge span in the world so it is claimed, is that now being constructed between East Omaha and Council Bluffs. It measures 520 feet from end to end. That at New London, Conn., is 503 feet long and one over Arthur Kill, Staten Island, just 500. The new drawbridge of the New York Central, over Harlem river, has an extent of only 389 feet, but it provides for four tracks and is the heaviest one in the world, weighing 4,400,000 pounds. The one at East Omaha will weigh, when completed, about 3,000,000.

A Good Pointer.

Why should you be idle for one hour? No use in the world for it. Every moment of the working part of each day ought to be employed. The busy people are the happy people. B. F. Johnson & Co. of Richmond, Va., are offering in to-day's paper to show you how to turn every hour into solid cash.

Gaseous Theory of the Earth.

The idea of M. Rateau, as expressed to the French Academy of Sciences, is that the phenomena of the earth's crust are well explained by considering that the planet's interior is molten, and that a layer of gaseous matter separates it from the portion of the crust forming the continents, where the seabeds rest directly upon the igneous globe. The continental masses tend generally to rise, being forced up by the accumulating gases, while the seabeds sink. The gradual escape of the gases, imprisoned under high pressure, will in time exceed the production of new supplies, when the pressure will diminish and the continents fall in, giving rise to more or less crateriform configurations. This is the state in which the moon now appears. Assuming the crust to be 18½ miles thick, the pressure of the gases should be 650 atmospheres, their temperature 900° C., and their density nearly equal to that of water. This theory makes it clear why volcanoes in the interior of continents give off gas instead of lava, and why lines of coast volcanoes have successively receded inland where the sea has encroached.

Dust Over Buried Cities.

The rapid shifting by the winds of beds of sand, often destroying or menacing human works, is a phenomenon well known in different parts of the world. But the slow accumulation of the finer particles—the atmospheric dust—has attracted attention only in recent years. Most ruins of ancient cities are buried, and it has now been learned that the covering is not only the debris of decayed buildings and other works, but that much of it is atmospheric dust. The layer that becomes visible to-day on a polished surface, if undisturbed, may grow into a deep stratum in the course of centuries.

A Fine Calendar.

The calendar issued by W. W. Ayer & Son, newspaper advertising agents, Philadelphia, is a thing of beauty and a joy for 364 days. It combines the useful and the ornamental in an eminent degree, and will be sent postpaid to any address for 25 cents, which sum is in this case evidently a tariff for protection only, as at that figure there can be no profit to its publishers.

—The Pacific Coast Council of Trades, in session at Sacramento, has declared in favor of the municipal ownership of gas, electric light, waterworks, street railways, the nationalization of telegraph, telephone and railway lines, and postal savings banks, compulsory education up to sixteen years, and eight hours' labor a day.

Chas. Lewell of Ventura has received from England a pair of White India game chickens at a cost of \$75. The male bird weighs 11½ pounds.

—The Governor has appointed the following delegates from the State at large to the Transmississippi Congress which is to be held in San Francisco: A. P. Williams of San Francisco, J. M. Walling of Nevada City, J. A. Louttit of Stockton, J. P. Widney of Los Angeles, Joseph Brown of San Bernardino, D. E. Knight of Marysville, Charles McCreary of Sacramento, W. D. Tupper of Fresno, M. A. Luce of San Diego and C. H. Phillips of San Luis Obispo.

Look for the Corrugation.

When you find it necessary to purchase new hinges for your barn door, we would suggest that you ask for the corrugated hinges, made by the Stanley Works, New Britain, Conn. They cost no more than the old style, and are driving the others out of the market.

The "Biography of a Yankee Hinge" is a smart little pamphlet issued by the Stanley Works, and it will be sent free to any one who will take the trouble to forward their address.

Roses, Plants and Seeds.

The GOOD & REESE CO., Springfield, Ohio, publish a beautiful 152-page illustrated catalogue of roses, plants and seeds—four colored plates, one of them the wonderful new rose Gen'l Rob't E. Lee. Be sure and see it. They will mail it to our readers for 10 cts. in stamps.

—Official statistics, just compiled at Port Townsend, show 2350 Chinese passengers in transit from the Orient, by way of the Canadian steamers, landed in Portland and Astoria last year. With the exception of 500, all obtained admittance as merchants.

A LOT FOR \$1 A WEEK

A dollar a week for sixty weeks, buys a lot 25x125 feet east of Chicago Heights, the great manufacturing suburb of Chicago. Sixteen factories, streets paved, stone sidewalk, beautiful shade trees, schools, churches, etc. No doubt these lots will treble in value within one year.

No such bargain was ever offered in Chicago Real Estate. These lots are now on the Belt Line where factories are now in successful operation, employing over 50,000 people. Business transacted for non-residents Address, LeForrest Land Co., Unity Building, Chicago

ORANGE CULTURE IN CALIFORNIA.

Now that the interest in the culture of the orange is extending so as to embrace nearly all parts of the State, a book giving the results of experience in parts of the State where the growth of the fruit has been longest pursued will be found of wide usefulness.

"Orange Culture in California" was written by Those A. Garey of Los Angeles, after many years of practical experience and observation in the growth of the fruit. It is a well-printed hand-book of 227 pages, and treats of nursery practices, planting of orange orchards, cultivation and irrigation, pruning, estimates of cost of plantations, best varieties, etc.

The book is sent post-paid at the reduced price of 75 cents per copy, in cloth binding. Address DEWEY PUBLISHING CO., Publishers "Pacific Rural Press," 950 Market St. San Francisco.

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By MRS. F. M. JONES, of Brockville, Judge of Butter at World's Fair, Chicago; owner of the grandest set of Jerseys, and the Most Successful Dairy on the eastern slope of the continent, and famous all through the United States, Canada, England and Australia. Mrs. Jones makes 7000 POUNDS OF BUTTER A YEAR, which all sells at far above the highest price ever obtained in Canada, and her book tells you JUST HOW SHE MAKES AND MARKETS IT so as to bring this price. Also HOW SHE FEEDS HER COWS, and the butter yield of many of them. It has a large picture of one of the most famous Jersey Cows in the world.

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One gentleman writes: "I have Prof. Jones' book on Dairying, cost me \$10, but practically Mrs. Jones' book is worth more." This book we propose

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PACIFIC RURAL PRESS, 220 Market Street, San Francisco, Cal.

—It is stated on good authority that President Foster of the San Francisco and North Pacific Railroad has under serious consideration co-operation or amalgamation with a new Mendocino county railroad scheme. Under this plan the San Francisco and North Pacific Railroad would be extended from Ukiah to Eureka. There is at present a road twenty-five miles in length from Eureka southward, and the new road would connect with this. The scheme is not new and surveys have already been made from Eureka to Ukiah. The cost of construction of this road has been estimated at \$4,000,000. Humboldt county alone has offered a bonus of \$250,000. The scheme rests largely upon the result of the negotiations which are believed to be in progress between the Fort Bragg Lumber Company and the San Francisco and North Pacific Railroad. The railroad is anxious to carry the product of the Round Valley coal fields to San Francisco and also into the Sacramento valley. It may also offer to put the redwood of the Fort Bragg Company in San Francisco as cheaply as can the schooners.

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CHERRIES, leading varieties in one and two-year-old trees.

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AT VERY LOW PRICES.

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"Gold Dust Cling," says H. E. Van Deman, ex-U. S. Pomologist, "is a yellow cling of medium size, round and regular in shape, and very firm in flesh. The color is very attractive, being dark yellow with a very red cheek. It bears heavily and carries to market with very little damage. Coming as it does before the main peach crop is gathered, it is about the first yellow cling of any special value and therefore finds a ready sale. Each year it gains in favor, but as it is a variety but recently originated the public know little of it. It is a very profitable variety." Price \$1 each, \$5 per half dozen. For sale by **SACRAMENTO RIVER NURSERY COMPANY**, Growers of HIGH-GRADE Fruit Trees, Walnut Grove, Sacramento County, California. Our Specialties—Genuine Tragedy Prunes, Olyman and Japan Plums on true Myrobolan whole root seedlings—we use no piece roots nor cuttings; price 15 cents each; Sacramento River Bartlett and Peaches—price 10 cents each. Large quantities at lower rates. WE GUARANTEE OUR TREES TRUE TO NAME.

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3 5 pkts Climbing Plants.

4 5 pkts Annuals.

5 5 pkts Perennials.

6 2 pkts Biennials.

7 3 pkts Orn'm't Grasses

Plants.

1 3 Chrysanthemums.

2 3 Carnations.

3 3 Geraniums.

4 2 Heliotrope.

5 2 Pelargoniums.

6 2 Roses.

Chrysanthemums.

1 1 Tuberosa.

2 1 Artillery Plant.

3 3 Single Geraniums.

4 2 Scented Geraniums.

5 2 Double Geraniums.

6 3 Fuchsias.

7 1 Begonia.

8 1 Heliotrope.

French Canna.

1 1 Tea Rose.

2 1 Carnation.

3 1 Pelargonium.

4 1 Fuchsia.

5 1 Begonia, Rex.

6 1 Rose Geranium.

7 1 Lemon Verbena.

8 1 White Lily.

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" **K—8 Grand Large Flowered Geraniums**, 8 sorts.....50c
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" **N—One-half set M and 4 Choice Tuberosa Bulbs**, 2 sorts.....50c
" **O—6 Choice Grape Vines**, 3 kinds, 2 each.....50c
" **P—6 Hardy Ornamental Shrubs**, 6 sorts.....50c
" **V—One-half each of Sets O and P**.....50c

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A PRACTICAL TREATISE ON THE RAISIN GRAPES, THEIR HISTORY, CULTURE AND CURING.

By **GUSTAV EISEN.**

This is the Standard Work on the Raisin Industry in California. It has been approved by Prof. Hilgard, Prof. Wickson, Mr. Chas. A. Wetmore and a multitude of Practical Raisin Growers.

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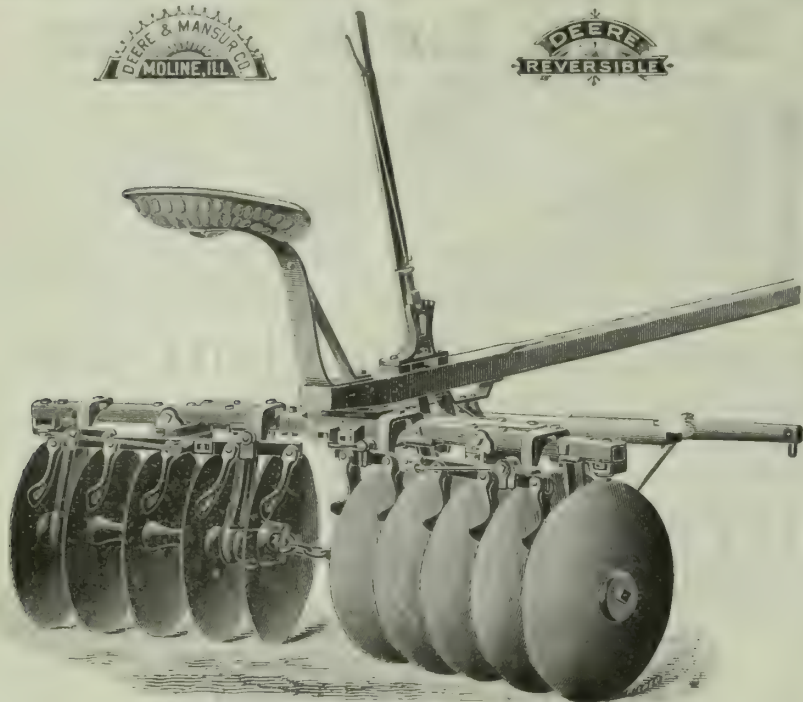


Is Different from Others.

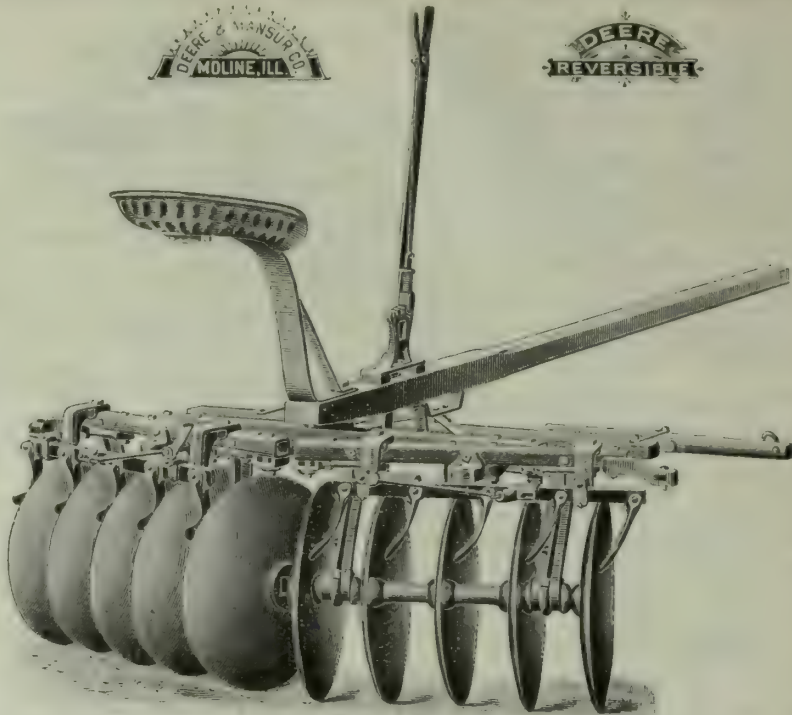
It is intended to aid the planter in selecting the Seeds best adapted for his needs and conditions and in getting from them the best possible results. It is not, therefore, highly colored in either sense; and we have taken great care that nothing worthless be put in, or nothing worthy be left out. We invite a trial of our Seeds. We know them because we grow them. Every planter of Vegetables or Flowers ought to know about our three warrants; our cash discounts; and our gift of agricultural papers to purchasers of our Seeds. All of these are explained in the Catalogue, a copy of which can be yours for the asking.

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IN THROW.



OUT THROW.

“DEERE REVERSIBLE” STEEL FRAME DISC HARROW.

Among the new tools to which we wish to call your attention is the Deere Steel Frame Reversible Disc Harrow, which we point to with pride as indicative of the class of machinery which it is our greatest desire to produce. It is simple in construction, strong, well made and finished. The gangs can easily be reversed to an “in-throw” or “out-throw” Harrow, there being no multiplicity of extra attachments required to make the changes. The “in-throw” Harrow, as shown above, can be changed in five minutes, to throw the soil outward. In Vineyard and Orchard cultivation, where a Reversible Disc Harrow is in greatest demand, this tool will be found to meet all requirements. The frame is constructed on the same principle as that of the well-known “Deere” Wood Frame Harrow, with the advantage of being made entirely of steel and iron. On the “Reversible,” all-end thrust (so destructive to the boxes) is overcome, whether used as an “in throw” or “out-throw” Harrow. Used as an “out-throw” Harrow, the two gangs come together—the bumpers on the inner ends of the gangs rolling upon each other without friction. Used as an “in-throw” Harrow, the two gangs are connected by a Swivel Chain—the only extra part required in changing from an “out-throw” to an “in-throw” Harrow. The high Spring Seat, out of the way of the dust, and well in rear of the gangs, is a valued feature of the machine.

PRICE LIST, WITHOUT DOUBLE TREES OR NECK YOKE.
The “Reversible” is made in six sizes, as follows:

No.	Number of Discs.	Diameter of Discs.	Width of Cut.	Weight.	Price.
41.....	8	16 in.	4 ft.	350 lbs	\$40 00
42.....	10	16 "	5 "	387 "	45 00
43.....	12	16 "	6 "	438 "	60 00
50.....	10	20 "	4 "	415 "	50 00
51.....	12	20 "	5 "	455 "	65 00
52.....			6 "	515 "	80 00

Hereafter, Equalizers will not be shipped unless ordered.

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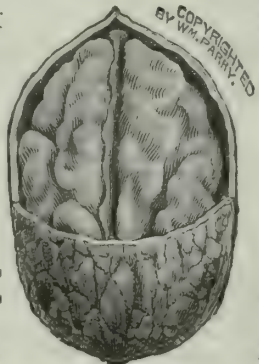
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Fruit Trees! Deciduous Fruit Trees!

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Rio Bonito Nurseries, Biggs, Butte Co., Cal.

KAGHAZI



PERSIAN

:- SOFT SHELL :-

:- WALNUT! :-

Our Stock of TREES and VINES is Most Complete
in EVERY CLASS of Fruits.

A LARGE STOCK OF THOMPSON'S SEEDLESS GRAPES

SHIPPING, CANNING and DRYING Fruits of all kinds.

Best Assortment of RAISIN and TABLE GRAPES in Calif.

Early Shipping Plums a Specialty.

SPECIAL PRICES FOR TREES IN LARGE QUANTITIES.

DURING the last three years, trees grown on the FEATHER RIVER BOTTOM LANDS, at RIO BONITO, BUTTE COUNTY, have been much sought after, and the demand for them is increasing all over the State where they have been planted. Owing to the peculiar adaptability of the soil and climate of this section for growing nursery stock, the trees making a very large and well-furnished system of root growth, and maintaining a correspondingly strong and vigorous top, maturing the wood thoroughly, we are enabled to supply our patrons with the best of trees, healthy in every respect, entirely free from insect pests, and in perfect condition for transplanting.

If You Are Going To Plant Trees, It Will Pay You To Correspond With Us Before Purchasing.

ALEXANDER & HAMMON,

BIGGS, BUTTE COUNTY, CALIFORNIA.

Incorporated 1884.

500 Acres.

CALIFORNIA NURSERY COMPANY,

Niles, Alameda Co., California.

FRUIT TREES, SHADE TREES, EVERGREENS, PALMS AND FLOWERING PLANTS.

SPECIALTIES: OLIVES—38 sorts, French, Italian and Spanish.
ROSES—360 sorts, all the leading kinds, new and old.
CLEMATIS—25 Varieties.

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JOHN ROCK, Manager.

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VAN GELDER & WYLIE, Proprietors.

GROWERS AND DEALERS IN ALL THE LEADING VARIETIES OF

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FOR THE SEASON OF 1893-94.

BUDDED ORANGE TREES, of the leading varieties, one and two-year buds; also a small lot of choice budded and seedling LEMON TREES. Sweet Seedling Oranges, 1 to 4 years old. Shade and Ornamental Plants. Prices to suit the times.

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For prices and terms, address

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Correspondence Solicited.



Vol. XLVII. No. 4.

SAN FRANCISCO, SATURDAY, JANUARY 27, 1894.

TWENTY-FOURTH YEAR.
Office, 220 Market Street.

The Art Department of the State University.

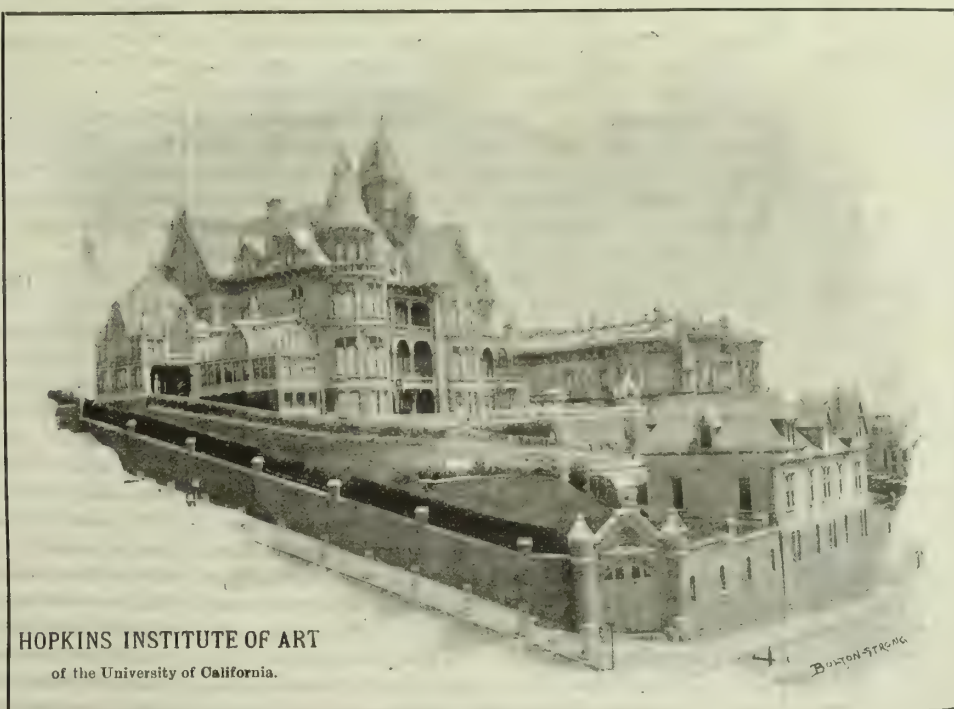
Our illustration shows a very important piece of State property recently acquired as a gift from a generously inclined citizen of Massachusetts. The buildings were erected and the property improved, as the engraving shows, by the late Mark Hopkins of the Central Pacific railway group of millionaires. He designed it for his palatial residence but was not allowed to long enjoy it, as his death occurred early in the building's history. Upon his death the property descended to Mrs. Hopkins, and finally to Mr. E. F. Searles by will of his wife, the late Mrs. Hopkins-Searles. It was Mr. Searles' first thought to bestow the property upon the Art Association of this city, but it was thought better to vest the title in the State, and so the title was given to the Regents of the University, and the Hopkins Art Institute became a department of the University of California, with its immediate management entrusted to the Art Association. The university thus gained a department of art to round out its equipment in this high direction of human endeavor, and it also secured a local habitation in San Francisco where its extension of university instruction, away from the site at Berkeley, may be fitly carried out. It is an interesting fact, also, that the adjoining structure, of which the roof is shown in the background, is the palatial mansion of the late Senator Stanford, which it is expected will ultimately come into the possession of the Stanford University. Thus our two great universities, with their chief establishments on opposite sides of San Francisco and somewhat distant therefrom, have their city houses side by side—honorable rivals in the country, neighbors in the metropolis. It is also not an unpleasant thought that the eminence, chosen by the millionaires primarily for their own personal enjoyment and named "Nob Hill" by the independent populace, should so soon lose its personal character and be crowned by the insignia of the two universities. If the public interest can thus so soon show its supremacy over personal wealth and display, we may have less to fear than has been thought from vast individual accumulations of wealth. But unfortunately we have no surety that other millions will go as these have gone.

The Institute of Art has been for some time in active operation. The large residence is chiefly used for art galleries, and is always open to the visiting public for a moderate fee, the money being used for the maintenance of the building. There are many fine works of art now on exhibition, and the institution is worthy of public patronage. The smaller building in the foreground is used for the instruction classes in the various branches of art study. On the whole, by the generosity of Mr. Searles the State of California has now first-class facilities for art education and for the display of art achievements—such facilities as perhaps the State would not have secured for a generation, except by such donation as his.

PROF. ALBERT KORBEL, who has done so much for California by introducing beneficial insects from Australia, has been engaged by the Provisional Government at Honolulu to make a collection of insect pests in the Hawaiian Islands, and has sailed for the islands. The insects are the worst of those which attack coffee plants and sugar cane.

The Citrus Fair.

The citrus fair of the northern and central counties was duly opened last Saturday and has now fairly begun its four weeks course. The products of the eleven counties interested in the construction of the special pavilion, which was shown in an engraving in the *RURAL PRESS* of December 23, 1893, are very attractively displayed and the whole building presents a most attractive and artistic interior. There are decorations everywhere. Above the arches beautiful flags are draped about the pillars and swing along the walls. Around the center of the building an observation gallery has been erected. Its balconies are hidden by bunting, whose gay colors give a pretty effect to the scene. Pavilions, towers, miniature capitol and courthouses, pagodas, obelisks and huge mounds are cov-



ered with tens of thousands of oranges and lemons. Fruits and cereals are everywhere. The air is heavy with the fragrance of flowers and of fruit. Decorators and exhibitors have exhausted their ingenuity in fashioning quaint and curious designs in which to secure a pleasing picture.

At present the building is largely given to the citrus fruit display. Over 125,000 oranges and many thousands of lemons are in the building. The structure is 180 feet long and 120 feet wide, but it is not large enough to include all the fruit shipped to it by the counties. The fruit is most artistically arranged. Silken banners displayed over every arch indicate to what county credit is due for special displays, and in the central part of the building, towering far above the observation galleries, are veritable palaces of oranges. The 11 counties associated in the building are Siskiyou, Shasta, Tehama, Butte, Yuba, Colusa, Lake, Napa, Solano, Placer and Sacramento.

BARLEY is gaining ground as a feeding grain abroad, and is replacing oats. We read in a London exchange that several stock-feeders have discovered that 400 lbs. of barley are much cheaper at 14s. 6d. than 312 lbs. of oats at the same price. In France the army forage and corn authorities are using one-fifth part of barley to four-fifths of the oat ration. However, London and other large centers of horse population, and carriage, riding and light horses generally, may be expected to keep to oats as the healthy diet which custom commends.

Our Vegetable Product.

We are glad to hear of the growth of vegetable shipments from the south. We are in hopes that this industry, when properly developed and its market outlets made adequate, will take a place befitting it beside our fruit-shipping business. The *Los Angeles Times* emphasizes the fact that there were actually sent north and east last year 5500 carloads of early vegetables, of which the southern counties contributed a very large proportion. Orange county is becoming famous for celery, and exported 188 carloads. The *Times* well says that a State which can supply the markets of the East in winter with 55,000 tons of vegetables is in a peculiarly strong position to advance itself, because in this respect there can be very little competition, except from Florida or Louisiana. It is only a question of labor to increase the supply ten times. According to the *Times*, transportation facilities have been favorable lately. With due encouragement from the railways a strong impetus could be given to vegetable growing, and it is an agricultural occupation which may best be followed on small farms. The cultivator who has little capital, but has a family to assist him, may thrive. Of course it is but the part of wisdom to proceed circumspectly in the pursuit of the business, because the supply can easily be made excessive unless the marketing at distant points be looked to. The vegetable-growers should organize and see what can be done by systematic action to extend their commercial horizon.

THERE was started in Chicago last week a "National Dairy Union." The object of the organization as set forth in the constitution is to secure national and State legislation to prevent the manufacture and sale of food products made in imitation or the semblance of pure butter or cheese,

and also to prevent the sale of adulterated products; to assist in the effective and thorough enforcement of existing laws and such future laws as may be enacted for the purposes set forth. The officers are to consist of a president, secretary, treasurer and vice-president, selected from each State represented in the National Union. These are to constitute a board of control, of which seven shall form a quorum.

THE Government is after the timber thieves in Oklahoma. For a number of weeks special agents have been at work investigating the timber stealing which has been going on for years. As a result deputy marshals have jailed six men who have been cutting walnut timber in Osage reservation. These were but day laborers in the employ of a combination of prominent men who have been cutting and marketing Government timber for years, the amount stolen aggregating millions of feet.

CALIFORNIA FRUIT PRODUCTS at the East seem to be firmly held and in the way of improvement. A recent telegram says the stock of all the markets appears in strong hands, and when business revives, and the movement of stock begins, the chances are very much in favor of an appreciation in values. A strong point in favor of California is the fact that exceedingly small supplies of foreign are in the hands of the local importers.

SWINE and sheep are good foragers, but they should be in separate fields.

PACIFIC RURAL PRESS.

Office, 220 Market St.: Elevator, 12 Front St., San Francisco, Cal.

ANNUAL SUBSCRIPTION RATE THREE DOLLARS a year. While this notice appears, all subscribers paying \$3 in advance will receive 15 months' (one year and 15 weeks) credit. For \$2 in advance, 10 months. For \$1 in advance, five months. Trial subscriptions for twelve weeks, paid in advance, each 50 cents.

ADVERTISING RATES.

	1 Week	1 Month	3 Months	1 Year
Per Line (agates).....	\$.25	\$.50	\$ 1.20	\$ 4.00
Half inch (1 square).....	1.00	2.50	6.50	22.00
One inch.....	1.50	5.00	13.00	42.00

Large advertisements at favorable rates. Special or reading notices, legal advertisements, notices appearing in extraordinary type, or in particular parts of the paper, at special rates. Four insertions are rated in a month.

Registered at S. F. Post Office as second-class mail matter.

Our latest forms go to press Wednesday evening.

ANY subscriber sending an inquiry on any subject to the RURAL PRESS, with a postage stamp, will receive a reply, either through the columns of the paper or by personal letter. The answer will be given as promptly as practicable.

ALFRED HOLMAN.....Editor
J. F. HALLORAN.....General Manager
E. J. WICKSON.....Special Contributor

San Francisco, January 27, 1894.

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BUSINESS ANNOUNCEMENTS.

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The Week.

The rain continues the ruling topic. There has been a precipitation of nearly three inches in San Francisco since our last issue, and the whole upper half of the State has participated in the dispensation. Everywhere enough has fallen for present uses, and in the regions of heaviest rainfall a vast surplus has gone to the ocean. It would be very satisfactory now to have a chance to work and an opportunity for submerged vegetation to get to sunlight, and for the Western world to go to the Midwinter Fair.

The great opening of the Fair will occur on Saturday of this week. The first feature will be a procession of great length and variety, which will proceed from the city to the Fair. All during the day there will be blasts of music and volumes of oratory and decorative displays of the most transcendent character. At night the myriads of electric lights will be rivaled by the pyrotechnic outbursts, which it is said will be far the greatest ever seen in San Francisco. Everything that ingenuity can suggest has been arranged to please the multitude and properly usher in the era of the spectacular which will not end until months hence.

For these events clear weather is desirable, and it is not the less so for the prosecution of winter work. The pruning and spraying in the orchard has made but halting progress this month so far, and the time is growing short for the early blossoms are appearing. Happy now is the orchardist who made good use of the short December days and finished his January work before Christmas.

THE beekeepers are in session this week in Los Angeles. It is the annual meeting of their State association, and the telegraphed report indicates a good attendance. We shall have the chief proceedings in future issues.

THE fruit-growers of Bakersfield have organized permanently, and a committee of five has been appointed to take steps to affiliate with the State Fruit Exchange, recently organized in San Francisco.

THERE is something significant in the fact that hard times always catches a certain class of producers unprepared and shakes them up.

Whither Shall the Farmer Retire?

One of the interesting features of the greater growth of population in our towns than on the farms, is found in the contribution to this result which the farmer himself makes. Unquestionably it is a matter of much public importance, and we see in it one of the most serious of the losses which agriculture undergoes through the gravitation of population to towns and cities.

Probably when it is shown that our towns are growing faster than our farming districts the first thought is given to the surplus of common laborers in towns and to the prevalence of the idle and the vicious who aim to live by their wit in towns when they should be doing honest productive work in the development of the country and thereby make themselves independent and self-reliant. But the increase of the burdensome element in the towns is only one phase of the matter.

The second thought of the growth of town population is of the constant inflow of young men who forsake the farm in the hope of securing, as it seems to them, greater opportunity for wealth, prominence and pleasure by the pursuit of town callings and occupations. This recourse of young men and women to the towns and cities is undoubtedly an important element of the increase of urban population, and it is also of advantage to the city by the constant addition to its ranks of toilers of those who bring, as a rule, greater physical force and endurance, simpler tastes, and possibly higher morals than the city product of the genus *homo*. While many young people realize what they seek when they choose city life and work, others consign themselves to less prosperity, comfort and significance than they could have secured, with even less effort, if they had chosen to follow their fathers in pursuit of rural industries. But this movement of the young people is only another of the phases of the cities' unearned increment of population.

The flight of the hired man and the migration of the farmers' sons and daughters are frequently discussed and deplored, but it is seldom that any one stops to think how largely the farmers themselves contribute to destroy the proper balance between town and country, and how much the development of the country suffers thereby. As far back as we can remember, and in all States in which we have resided, there has always been a procession of retired farmers from the country to the village, the town, the city. Every town almost has its retired sea captains and army officers, and they are usually men of local note. Their acquaintance with the affairs of the great world constitutes them oracles, and their titles, like their shadows, never grow less. Renown and adipose, unknown in their active careers, cling to them in retirement. But where one of these distinct endowments falls upon a village there come to it retired farmers by the score. They do not, as a rule, constitute any conspicuous factor of the village population. The brisk townsman may seek their advice as to the treatment of his sick cow, the preacher will ransack the memories of his boyhood for an agricultural illustration by which to catch them on the thread of his discourse, and the country banker will talk crops and weather with them so long as they leave with him a surplus of deposits which he can juggle with for short loans at high interest. Nor does the retired farmer usually think much more of the town people than they do of him. Their cramped door-yards, their stuffy houses, their turning of night into day, make him weary. He sighs again and again for the largeness, the freedom, the independence of his farm. When he gathers with the other relics around the stove in the village store, the sea captain's talk of the deep but reminds him of the broad acres he has abandoned, and the army officer's recollections of battles are but faint reminders of his own exploits in the saddle in pursuit of stampeded stock or in his field-to-field inspection of his laborers' progress. Though the retired farmer has come to town to be nearer people, and to enjoy in his latter days closer contact with his fellow-men, he is, in fact, never so lonesome and discontented in his life as when he has forsaken the scenes of his youth and his prime. His very retirement is weariness; his recourse to rest and recreation a delusion.

But were it the fact that the successful farmers' retirement brought only such ills to himself, the public interest in his experience would be merely one of sympathy for his disappointment. Unfortunately the public welfare loses something by every misplaced man that breathes, and it loses perhaps more in the misplacement of the successful farmers who retire to towns and cities than in any other social and industrial misfit which it endures. And the loss is in this way. Usually the farmer who moves to town puts a tenant in his place, or he may cut up his place for several tenants. In most cases the tenants are those who take narrower views of farm policies and have less interest in the future of the farming region than the owner did. The result is that the development and

improvement of the property ceases or retrogrades and the spirit of progress in the neighborhood declines. Take a strong, successful and public-spirited man out of any farming neighborhood and bury him in a town and you rob the country without particularly enriching the town. It is wonderful how much influence even one thoroughly good farmer may have in carrying forward the whole region in which he lives and labors. Contrast this with the opposite tendency which almost always accompanies absentee ownership and some idea can be had of how undesirable it is that the man who in his proper place is a public force and benefit should forsake his life work when it reaches its best function.

Of course we are speaking in general terms about a wide movement of population. There are, of course, individual instances more or less frequent in which it is desirable that the farmer should move to the village or city. Sometimes it may be to the advantage of the farmer and his family; rarely it may be of advantage to the farm and to the farming community, especially if the farmer be out of sympathy with agriculture in its present progressive spirit. We have in mind instances where retired farmers exert a very beneficial influence in municipal affairs. There are groups of picturesque and potential farm graduates prominent in Sacramento, in San Jose, in Los Angeles, and probably in many of our cities and villages. But even if this be granted, it must be claimed that in the same degree at least that these men are valuable in the towns, their loss to the country is appreciable.

In general, then, both for the welfare and comfort of the farmer and for the advantage of the country, the change of residence contemplated should not be made. The man who has passed his years of greatest physical activity should plan rather to enjoy his age upon the farm and to bestow his spirit and wisdom upon its progress and development. He should relax his physical labors; he should plan and direct and regulate—younger men can execute. In his saddle or on his buggy seat, amid the scenes he has long loved and still in touch with productive enterprises he has developed, he remains to his last day an effective force on the farm and in the neighborhood. Such a course is infinitely better than to devote one's last and best days to struggle with the village cow and to daily debate upon the forum of the village store. With active interest laid aside, with nothing to impel and inspire him, the retired farmer usually lingers along until moth and rust bring him relief in dissolution.

Dry Land Forage Plants.

While it is desirable to maintain all the eagerness and persistency which has characterized the search which Californians have always put forth to discover valuable forage plants for arid soils, it may be questioned whether enough has been done to determine the value and availability of plants which are known to withstand most trying situations and are indigenous thereto. It is likely that the effort to clothe arid lands with meadow-like verdure will end in disappointment. Nature decrees that meadows shall only exist with adequate moisture either natural or applied. She does not spread a carpet of tender growth without moisture, and she makes the duration of such carpet depend upon the length of the moist season. Where such season is short she employs annual plants and carries them along by a seed which withstands desiccation. Where she maintains perennial plants upon arid soils, she is forced by her own requirements to give them a coarseness and hardness which calls for tissues quite different from those of the meadow. It is more than probable that any plant which we find of value for forage in a succulent state during the dry season, will be a coarse plant, and a plant which cannot be mown and stored as is the fragrant, delicate product of the meadow. Of course if we accept this conclusion and proceed without search for dry land forage plants we shall probably succeed, for nature has plants for all situations. But do not demand too much; do not expect the tender succulent grasses and clovers which thrive on natural or irrigated meadows to cover dry plains or sun-baked hillsides. Neither these plants nor others having a like manner of growth will probably ever fully meet the requirements of the most difficult situations.

While we are still looking for something better we get a hint occasionally that plants known to be salamanders have a food value higher than is commonly accorded them. We have just read a report from South Africa that during a recent season of serious drouth some farmers found the American aloe, which is simply our agave, or "century plant," the only barrier which stood between them and large loss of stock. We confess to a smile as we read along of how many sacks of succulent fodder were obtained from the fresh bloom-pole of the century plant, when we found that this succulent forage was used for feeding ostriches. With the popular conception of the ostrich as subsisting on a diet of fish hooks and carpet tacks, and as assuming

fatness upon plentiful supplies of discarded tinware, it would not be hard to believe that the juicy spike of the agave would bring refreshment to the inwards of such an organism. But we are told in all seriousness that when other forage disappeared because of drouth, the birds lived solely upon the hashed substance of the century plant and proceeded with egg laying and multiplication in a most satisfactory manner. This might still indicate rather a low standard of food value in the agave, but the South African writer turned to the maintenance of his cows on a similar diet and there also found success. Now we are told the agave has acquired standing as a forage plant in South Africa; that it is customary each year to remove wholly the outside leaves of the plant and to put their thick, juicy substance through a masher, after which it is eagerly eaten by most farm stock. After the outside leaves are removed, the central bunch maintains its growth and comes into condition for another annual cutting. It would be simple to try experiments with this material. Most gardens have the plants in all their majesty, and offshoots are abundant for further planting. They will thrive on any place where they can get a rooting, and dry ground, too strong for the plow, can be easily set with them. It is true they are far from the popular conception of what is desirable in a dry-land forage plant, but if they are found of use in the way described, even the hardest situation may be made to yield some stock feed.

Another plant which suggests itself in this connection is our common cactus, or prickly pear, comprising the species of *Opuntia*, which are so abundant upon the so-called desert lands of California. It is well known that the fleshy leaves of this plant will maintain stock. Burning off the prickles or spines makes the thick pads acceptable to all hungry stock, and perhaps the partial roasting does not detract from their flavor. There are frequent records of the use of the cactus for this purpose in the States along the Mexican border, and they are said to sustain even dairy cows in, we presume, a somewhat rude and scanty system of dairying.

Such plants as we have named are only to be thought of where the land will not grow anything better. If there be profit in the keeping of stock on such lands, the natural forage of the plants can be often cheaply supplemented by a use of bran or other mill feeds. If the coarse vegetation be reduced to pulp by some cheap rolling or crushing device, the addition of dry bran will probably add to its flavor as well as to its nutritive power.

As we seem to be getting down to bedrock in all our industrial affairs through the reform policies which are being enforced, it may be that cow feed of century plants and cactus will be but a proper distribution of its benefits.

From an Independent Standpoint.

A fine illustration of the interdependence of the several economic and political questions now before the country has bobbed up at Washington in the form of an administrative act which bears a direct relation to them all. The Secretary of the Treasury has announced a new issue of Government bonds; and, at once, it is found that the tariff question, the currency question, the revenue-tax question and questions of executive authority are, each and all, involved in the matter. Says the Protectionist: If the Government needs money, why don't they quit tinkering with the tariff and allow things to go on as they have prosperously these past thirty years? Says the silver advocate: Why don't they coin the silver in the treasury vaults? Says the fiat money man: Why don't they print a new issue of greenbacks, for surely the promise of the Government to pay is as good upon a dollar bill as upon a thousand-dollar bond. Says the man who doesn't want his income taxed: It will only make a new necessity for taxation to supply interest money, and it is an outrage. Says the strict-constructionist: I deny the authority of the executive branch of the Government to issue bonds without the direct sanction of Congress. Says the Populist: It is a scheme to put money in the pockets of the gold-bugs, who will, of course, snap up the bonds, and the producer will have to sweat to pay the interest. And so it goes. Every question and interest now before the country is involved the moment the money nerve is touched. It is a fact worth remembrance by those who care to study the underlying motives of our national life.

Here is a plain statement of the condition of the treasury. The cash balance (which includes the gold reserve fixed by custom at \$100,000,000) has fallen below \$90,000,000. For the last six months, revenues have been \$34,000,000 less than expenditures. There is good reason to believe that the deficiency for the next six months will be considerable. Few candid and well-informed persons estimate it below \$20,000,000. This deficiency must come out of the cash balance, reducing it below \$70,000,000. Not more than \$60,000,000 of this will be gold reserve. Upon

this \$60,000,000 of gold must be supported directly some \$375,000,000 of legal tender notes, and indirectly over \$500,000,000 of silver and silver paper. All persons of knowledge agree that it is madness to let the reserve thus run down.

To meet the necessity (and everybody admits the necessity save the fiat money men and the extreme silverites), Secretary Carlisle proposes to sell bonds—that is, to give the notes of the Government—in the sum of \$50,000,000, in either registered or coupon form, in denominations of \$50 and upward, redeemable in coin at the pleasure of the Government after ten years from the date of issue, and bearing interest, payable quarterly in coin, at the rate of five per cent. Proposals for the whole or any part of these bonds will be received at the Treasury Department until 12 o'clock, noon, the 1st of February, 1894. The proposals shall state the amount of bonds desired, whether registered or coupon, and the premium which the subscriber proposes to pay. As soon as practicable after the 1st of February, allotments of bonds will be made to the highest bidders therefor, but no proposal will be received at a lower price than \$117.223, which is equivalent to a three per cent bond at par, and the right to reject any and all proposals is expressly reserved. The bonds are to be payable in gold only.

This is the proposition; and already bids are being received at the treasury. The authority for this proceeding—such as it is—is found in the Act of 1875 providing for the resumption of special payments, which declares that in certain contingencies the Secretary of the Treasury may sell bonds of the Government. It was an authority expressly bestowed to meet a possible emergency during the change from the greenback to the metal basis many years ago; and in the judgment of many able lawyers there is a question as to its application at this time under circumstances wholly different from those in the contemplation of Congress at the time of the enactment. Indeed, within the past few weeks both Secretary Carlisle and President Cleveland have expressed doubts of the present legality of the authority to issue bonds, and the latter in his annual message asked Congress to make the authorization more definite. In consideration of this doubt, it was at first intended to ask Congress to authorize the proposed issue by special Act; but upon reflection it was feared that such a request at this time would complicate the tariff measure; and so it was resolved to force the project through on such questionable authority as existing law affords. It is only fair to say that whatever criticism may attach to Messrs. Cleveland and Carlisle in this matter attaches equally to preceding administrations since 1875, for each of them has asserted the authority under the provisions of the law upon which Mr. Carlisle is now proceeding, to issue bonds in their own discretion. It is not a matter in which one party has any right to arraign the other.

The RURAL stands with those who hold the bond issue to be bad policy. The necessity for it grows out of the proposed change in the revenue laws, and, as we have often said before, we believe the change untimely and unwise. Somehow, the Government must raise approximately five hundred millions of dollars per year to pay its running expenses and the annual pension charge; and it is not likely that this annual requirement will soon be reduced. At a time when the revenues hardly supply sufficient funds for current necessities, it seems rank folly to cut them down as the Wilson tariff bill proposes; and a folly ranker still to attempt to make up the deficiency by new forms of domestic taxation as is further proposed. It seems indeed a strange course and a strange time to throw over the policy of Protection to American industries under which the country has long prospered; and to substitute for it a policy of internal industrial taxation. As we look at it, it is a course certain to produce—if it should be carried into execution—industrial demoralization and widespread poverty. It hardly needs to be added, in view of its wider relations, that its effect upon the public revenues is the least, and the last to be dreaded, of the consequences of the Wilson tariff measure. We have only to look about our own State and consider what would be the effects of the proposed tariff changes, to be able to estimate the havoc and ruin it would make in the country at large.

Wiser far, it appears to us, would it be to dismiss all notions of tariff reform, at least until the country shall have regained its normal commercial and financial health. What would be thought of a surgeon who should choose for some hazardous and doubtful operation a time when his patient was sick of a fever and when his vital forces were at their lowest ebb? Such a course would be comparable with the arbitrary folly which selects a time of stagnation and distress for tinkering with the tariff.

The Wilson bill is having very hard sledding in the House of Representatives, though it is admitted that if it can be forced to a vote, party authority will carry it

through. For several days it has been in the stage subject to amendment, and propositions of change have been thick and furious. It is, of course, ably defended by Mr. Wilson and as yet only one considerable amendment has been carried over his protest; and that is one vitally related to the interests of California. The McKinley law, now in operation, provides a bounty of two cents per pound for sugar of domestic production. The Wilson bill, as it was introduced, provided for its abrogation in eight annual installments—that is, to take one-quarter of one per cent each year from the bounty for eight years. As now amended, the bill provides for the immediate abrogation of the bounty. This has made a great row in the majority camp, the Louisiana men declaring that they will not support the bill as it stands. The California men, whose interests are identical, will probably join in the protest, although up to this time (with the exception of Mr. Geary, who is outspoken in opposition) they have shown very poor spirit.

So many propositions for change are now before the House that a recommendation to recommit the bill to the Committee for amendment is expected at any time; and it is certain that a combination between those Democrats, who want specific changes, and the whole body of Republicans, who will do anything for delay, could throw the measure back upon the hands of the Ways and Means Committee. This is the critical position of the bill at this time. Recommitment would be a virtual defeat; and it will be opposed by all the powers that the leader of the majority and the Speaker, backed by the Administration, can bring to bear. The plan of this combination is to bring the bill to a direct vote on the 29th—next Monday; and, if they can hold it to its course, there is scarcely a doubt that it will go through. Its danger lies in the fact that certain Democratic elements who would not dare to go against the party on direct vote, may join in a vote for delay and amendment. The strain will be intense during the next few days; and we incline to the opinion that the Administration forces will win.

The real fight will probably be in the Senate, where the Protection forces are stronger and where the rules of procedure give a clearer field for obstructive tactics. There the Administration has no such power as it has in the House. Only last week the President's nominee for the Supreme bench (Hornblower) was rejected—a fact very significant as notice to the President that he must not count upon support of the Senate either for nominations or for legislation. Senator Hill of New York, who led the opposition to Hornblower, is known to oppose the President's tariff policy and may be expected with his colleague Murphy to stand with the Protectionists.

On Tuesday of this week the Committee on Foreign Affairs reported the following resolution for the consideration of the Senate:

Resolved, From the facts and papers laid before the Senate it is unwise and inexpedient, under the existing conditions, to consider at this time any project for the annexation of the Hawaiian Islands to the United States; that the Provisional Government therein having been duly recognized, the highest international interest requires it shall pursue its own line of policy. Foreign intervention in the political affairs of these islands would be regarded as an act unfriendly to the Government of the United States.

In presenting this resolution the chairman said that Dolph of Oregon dissented from the first clause, but that in other respects it expressed the unanimous judgment of the committee. As yet the resolution has not been acted upon, but the impression is general that it will be made the basis of American policy relative to Island affairs during the continuance of the present Administration. It is scarcely necessary to point out that it flatly negatives Mr. Cleveland's recent propositions, and that in effect it will establish an American protectorate over the Hawaiian group. Whenever we notify the nations of the earth, as this resolution proposes, to keep hands off from Hawaii, we assume, practically, the responsibility of her future. In the end it will involve incorporation of the Islands within the dominion of the United States, probably not in the form of a new State, but in some special relation fitted to the special conditions of the case. This has seemed to us all along to be the inevitable outcome; and it has, therefore, seemed scarcely worth while to protest against manifest destiny.

The move is one of serious import in its relations to the future of the Republic. It will make a precedent in the extension of American dominion that opens the door to Canada, to Australia, to Ouba, to Mexico and to a dozen other countries. It will lead to a direct connection with international affairs which hitherto it has been our policy to avoid, and it will make our political life of the world instead of purely insular. It will lead to a prodigious development of our naval establishment. It will make the Nicaragua Canal and a submarine cable between California and the Islands military necessities. And no man has the wit to know how all

these things will affect the political, the material, the intellectual and the moral life of the American people. The possibilities suggested by these reflections make thoughtful men grave when they turn from the partisan, personal and ephemeral considerations involved in the recent diplomatic muddle to consideration of the real question involved; namely, that of the wisdom or unwisdom of making Hawaii an American dependency.

Citric Acid and Oil of Lemon.

We alluded last week to the warning given by the U. S. Consul at Rome that artificial citric acid was being produced in Italy and that the manufacture thereof from the lemon was endangered thereby. There is, however, constant inquiry for the methods employed in realizing some advantage from the waste lemon product, and to meet this demand we give the following from Spon's Encyclopædia of Industrial Arts, describing citric acid and oil of lemon manufacture as practiced in Europe:

CITRIC ACID.

The lime juice from which the acid is prepared is imported from Sicily, the south of Italy, and from the West Indies. After removing the seeds and peel, the fruit is strongly expressed, and the juice collected; it is evaporated in copper pans until it has a density of about 1.234, when it is a thin, dark brown, syrupy liquid, containing about 32 per cent of free citric acid. An instrument termed a citrometer is sometimes used to measure the amount of citric acid contained in the juice, but this method is not to be relied on, owing to the variableness of the quantity of insoluble and saccharine matter present in the sample, as well as to the fact that during the concentration of the juice, part of the acid is invariably decomposed and carbon thereby set at liberty; the dark color of the juice is also due to the presence of free carbon. It is imported into this country in casks containing about 100 gallons.

The vessel in which the decomposition takes place is a wooden tub, conical in form, and of any convenient size; this tub is fitted with suitable agitating gear, worked by machinery above. The juice is run from a cistern, by means of a metal pipe provided with a stop-cock, having been previously heated to about 100° C. Small portions of common whiting, finely ground, are added successively, the contents being well agitated the while, until the mixture ceases to effervesce. It should be observed that the reaction with litmus or turmeric affords no indication of the point at which all the citric acid is converted into citrate of lime, owing, it is said, to the formation of an acid citrate, and also to the presence of phosphoric acid, which is always to be found in the crude lime juice; these bodies are with difficulty neutralized by chalk, and render the mixture distinctly acid when considerably more chalk has been added than is sufficient to combine with the whole of the citric acid. The liquid may be, and sometimes is, neutralized by the addition of milk of lime, but the practice is objectionable, and has been discontinued by the best manufacturers, on account of the mucilage precipitated by the lime, which hinders the filtration and crystallization of the concentrated liquor. It was formerly the custom to get rid of these mucilaginous matters by subjecting the crude juice to a process of fermentation, but this has generally been given up as unnecessary.

When the addition of more chalk produces no effervescence, the agitating gear is stopped and the contents of the tub are allowed to settle; the clear liquor, containing much soluble impurity, is run away by means of a tap. The citrate of lime is now washed rapidly, but thoroughly, with warm water, the contents are well stirred up, again allowed to settle and the washings run off; this process is continued till the citrate is thoroughly cleansed. It is then ready for decomposition, which is carried on in the same vessel. The proportion of sulphuric acid required to effect this is about 9 parts of strong acid, diluted with six times its weight of water, to every ten parts of chalk previously used. The acid is run in while still hot and the mixture kept in a state of agitation for about 12 hours, or until the whole of the citric acid is decomposed. This operation complete, the whole contents are run off, while still well mixed, into a shallow leaden vat, placed immediately beside the decomposing tub and connected with the bottom of the latter by means of a leaden pipe. The heavy sulphate of lime, which may afterward be sold as manure, sinks immediately to the bottom of this vat, leaving the citric acid liquor free to flow into the concentrating vessel placed at its side; this vessel is made of wood, lined on the inside with lead and furnished with a leaden coil which lies at the bottom of the pan, and through which steam is constantly passing. In order to render the concentration more speedy the wooden sides of the pan enclose a row of metal pipes, through which also steam is made to pass. The steam is withdrawn as soon as a thin film appears on the surface of the evaporating liquid, and care must be taken that this point is not passed. On withdrawing the steam the concentrated acid is run or pumped into a convenient cistern, and from this it is ladled into canvas bags suspended from a wooden frame, beneath which are placed rows of circular leaden basins; the liquor running through is retained in these basins, all mechanical impurities being left behind in the bags. As soon as the crystals cease to form, the mother liquors are poured back into the concentrating pans and the citric acid is carefully detached from the basins. The article thus obtained is sufficiently pure for ordinary purposes and represents the citric acid of commerce.

During the process of evaporation in the leaden vats the concentrated liquor invariably becomes contaminated with more or less lead. When the acid is used for the preparation of aerated waters this becomes a serious difficulty, owing to the poisonous nature of lead compounds. It has

been proposed to obviate this by employing vessels of wood or earthenware.

OIL OF LEMON.

Expression and Scarification.—Such processes as are described in this section are adapted only to the materials yielding a large percentage of essential oil, such as fruits of the citrus genus. The simplest form is the so-called "sponge process." The peel is first cut off of the fruit in three longitudinal slices, leaving the central pulp of triangular shape, with a little peel at either end; the central pulp is cut transversely in the middle and thrown on one side, while the peel is collected on the other. The latter is left till next day and treated thus: A seated workman holds in the palm of his left hand a flattish piece of sponge, lapped round his forefinger. With the other hand he places a slice of peel upon the sponge, the outer surface downward, and presses the uppermost (zeste) side so as to give it a convex instead of a concave surface. The oil vesicles are thus ruptured and the oil which issued from them is absorbed by the sponge with which they are in contact. Each slice receives four or five squeezes and is then thrown aside. The workman carefully avoids pressing the small bit of pulp attached to each slice. As the sponge becomes saturated it is forcibly wrung out into a coarse earthenware bowl, provided with a spout and of a size to hold at least three pints; here the oil separates from the watery liquid accompanying it and is decanted. Despite its apparent rudeness and wastefulness this process is capable of affording an excellent article; it is employed chiefly for treating lemons.

Another implement adopted with both lemon and bergamot is known as the *écuelle à piques*. It is a stout pewter saucer, about 8½ inches wide, with a lip on one side for convenience of pouring. The bottom is covered with stout, sharp, brass pins, standing up about one-half inch, the center being deepened into a tube about one-half inch in diameter and five inches long, closed at the lower end. The whole resembles a shallow funnel, with the tube stopped up at the end. The peel is held in the hand and rubbed over the pins, by which the oil vessels of the entire surface are punctured. The liberated oil flows down into the tube, which is emptied at intervals into another vessel, where the oil may separate from the turbid, watery liquid accompanying it.

A modified form of the *écuelle* for extracting bergamot oil from the full-grown, but unripe, entire fruits is as follows: The fruits are placed in a strong metallic dish about ten inches wide, having a raised central opening, forming with the outer edge a broad groove or channel, and covered with a lid of similar form. The inner surfaces of both dish and lid are provided with a number of narrow, radiating, metallic ridge blades, about one-fourth inch high and resembling knife-blades. The dish is also perforated to permit the outflow of the oil, and both dish and lid are arranged in a metallic cylinder, placed over a vessel to receive the oil. By a simple set of cog wheels, a handle causes the cover, which is very heavy, to revolve rapidly over the dish; the fruit lying between the two is carried round, and simultaneously subjected to the action of the sharp ridges, while, rupturing the oil vessels, set free the oil to flow out by the small holes in the bottom of the dish. Some six, eight or more fruits are dealt with at once, and are kept under operation for about one-half minute; about 7000 fruits can thus be treated in one such machine per diem.

Distillation.—The oleiferous material is placed in an iron, copper or glass still of 1-1000 gallon capacity, and is covered with water; superposed is a dome-shaped lid terminating in a coil of pipe, placed in a vessel of cold water and protruding therefrom with a tap at the end. On boiling the contents of the still, the essential oil passes over with the steam, and is condensed with it in the receiver; the oil and water separate on standing. A great improvement, introduced by Drew, Heywood and Barron, is the use of a steam jacketed still. Steam is supplied from a boiler into the jacket; within the head of the still is fixed a "rouser," a double-branched stirrer curved to the form of the pan, and having a chain attached and made to drag over the bottom, the whole being set in motion by means of a handle. The still is charged and nearly filled with water; the head is then bolted on, steam is admitted into the jacket, the contents are well stirred, and soon the oil and steam are carried up the pipe, condensed in the refrigerator, and let out into the receiver. Here the oil and water separate and escape by different taps.

The Dried Fruit Trade of 1893.

The *Herald of Trade* has kindly furnished us an advance copy of a review of the dried fruit trade of the last half-year, prepared by A. G. Freeman, manager of the local branch of J. K. Armsby & Co. It will be read with interest:

When the market opened in July on new dried apricots, practically the former season's product of all kinds of California dried fruit, including peaches, apricots, pears and plums, had been consumed. Of dried grapes and raisins alone there was a fair supply of old stock. President Cleveland had just called Congress to meet in extraordinary session to consider the causes, and a possible cure for the extreme financial depression then existing. Banks were failing every day and commercial institutions of every description, no matter how strong financially, were more or less fearful, and all, with one accord, acted on lines of extreme conservatism. It is well known that our dried-apricot product was in light supply, and that the Eastern fruit crop, especially of apples, "the great staple," was in very light supply, both spot and prospective, but wholesale grocers were afraid to operate except in a very limited way, and the price dropped until fine California dried apricots, "one of the most delicious and nutritive dried fruits produced anywhere," could be bought at 7 to 8 cents f. o. b., in car lots. Consumers soon began to appreciate their value and shortly a brisk movement

started, coming wholly from a consumptive demand, and in a very short time the bulk of the product was moved. The same influences acted on the peach product, which came next, and likewise on pears and other varieties of smaller volume. Quite early in August, and to certain extent in July, the prospect of a liberal prune product began to excite comment, both from producers and dealers. Extreme high prices had prevailed for the product of 1892 and this led many producers to expect fairly high prices from the then growing crop. Much feeling was engendered by offerings by certain commission houses and large producers at prices considerably below those sought to be obtained by the large Exchanges in Santa Clara valley. The Exchanges started with the idea that 6 cents for the four sizes of graded prunes in sacks could be obtained. These views they soon reduced to 5½ cents, and later to 5, and, while they did not publish the facts, many were sold at 4½ and even less before shipments commenced. The total prospective volume of the product was belittled and every device used to maintain a price above what has proved to be the actual value of the product.

The situation on raisins and dried wine grapes was somewhat different—quite a quantity of the product of 1892 was still on hand in August, 1893, and was selling at extremely low prices. Raisin handlers saw no chance to open the market at anything above ruinously low prices from the producers' standpoint. Zante currants were being offered at under two cents, all expenses paid delivered in New York, and import orders for large amounts were being placed daily. The raisin product of Spain was nearly a month earlier coming into market than for many years, and, owing to heavy losses on the California product, Eastern dealers were inclined to buy much heavier than usual of the Valencia product. At this time a large meeting of producers and packers was held at Fresno, and a large, well-attended adjourned meeting in San Francisco. Prices were made, being a sort of compromise between the extremists of both sides. A committee on freight rates was appointed, and, it can justly be said, performed some of the best work ever done by a committee of this kind in this State. A vast array of facts and figures was presented to the officials of the Southern Pacific Company, who made a great reduction, every mill of which has gone to the benefit of the California fruit producers. The prices made at this meeting were quite generally maintained by sellers on early shipments, but just as soon as the bulk of the crop was ready, large consignments commenced, and these were sold as fast as they arrived at current market rates, which were very much less than the f. o. b. schedule adopted at the San Francisco meeting.

During the last 60 days we have had a dragging market on nearly all kinds of dried fruit, especially on raisins and prunes. The fall trade took such a large percentage of peaches, apricots and other varieties that prices on them have been fairly well maintained. The course of the market the past year, and of all markets on food products for all time past, shows most clearly to the student of markets the fallacy of fixing a price. Such a thing is only possible with non-perishable products, the production of which can be adjusted to the consumption. How few producers give a thought to the matter of consumption, and the few that do are far more apt to catch at anything showing that their special product is selling at high prices to consumers, no matter from what source or whether the report has any basis of fact, than to get a real honest view of the situation as it really is.

A large percentage of the families of the United States have incomes under \$1000 per annum. It is estimated that of the ten to twelve million families in the United States only about 85,000 have incomes of over \$4000 per year. A glance shows who consumes this season's product of 50,000,000 pounds of prunes, 70,000,000 pounds of raisins and 25,000,000 pounds of other California dried fruits. They are necessarily consumed by the 60,000,000 people who live by the fruit of their daily labor, who compare our product in cheapness and general desirability as a food article with whatever else is offered them from the markets of the world. Producers of food products cannot learn too quickly that it is not the province of "meetings," "combinations," "organizations," etc., to "fix the price" under normal conditions. The wife of the man with the "tin bucket" invariably fixes the price under normal conditions. You can lead a horse to water but you cannot make him drink. And you can "fix the price" of a food product but you cannot force the American housewife to buy it. No better illustration of this great truth can be had than the course of the market on California dried fruit this year when we had an utter absence of speculation. The consumer, the wife of the man with the "tin pail," decreed that our dried peaches and apricots were cheap and good food articles, and bought them so freely that we had a firm market and fair advance. She likewise decreed our prunes and raisins were too high, and in spite of the fact that we had made a large number of wholesale grocers believe they, or more especially prunes, were cheap, down went the price to meet the consumers' views. Another great fact we have to learn, and that quickly, is that as our product increases in volume, we have to constantly seek a large number of consumers with smaller incomes. In other words, as our products increase in volume they naturally decrease in price, as they pass from being delicacies of the rich man's table to the every-day food of the workers of the land.

LAND PLASTER or gypsum is useful about the stables. It fixes the ammonia and so makes the manure more valuable, and absorbs all bad odors. It also helps toward making the premises look tidy—an item that sometimes is not sufficiently considered.

THE human family living on earth to-day consists of about 1,450,000,000 souls—not fewer, probably more. These are distributed literally all over the earth's surface, there being no considerable spot on the globe where man has not found a foothold.

HORTICULTURE.

How Badly They Need Our Fruit in London.

Some friend kindly sends us a copy of the London *Daily News* with an article on the Christmas fruit supply of the world's metropolis. It will be interesting reading to California fruit-growers, and it shows, we think, how wonderfully their fruit supply would be varied and improved if they should include California fruit products instead of relying wholly upon the historic articles of the Mediterranean region. The article also incidentally gives information of the producing region mentioned, which is entertaining. We quote as follows:

The year 1893, which here in England has been one of the most delightful and one of the most fruitful on record, seems to have been pretty much the same throughout Europe—southern Europe at any rate. Christmas fruit has never poured into our market in such quantities as this year, and it is said that upon the whole prices have never been so low. The Ionian islands—Cephalonia and Zante principally—have had such a crop of currants as they never had before. The plants are liable to be swept over by the "black sirocco," an African wind that blasts and shrivels them like the breath of a furnace. This year they seem to have escaped all perils; never were the vineyards more extensive, never have the deep purple clusters hung thicker under the sunlit leaves, never have the islands looked prettier, with their white cliffs, their clustering cypress trees, their dark olive groves, and their thousands of acres of vines, with the picturesque natives working in their midst. Alas, it is difficult to be quite happy in this world, and the Ionians this year are strongly inclined to think that their prayers have been somewhat too abundantly answered. The French consumption has almost entirely fallen off, and now comes an unprecedented crop in addition to extended acreage, and prices in London have fallen to just about half what they were. The troubles of the small currant farmers of the sunny isles of Zante and Cephalonia are indeed pretty much the same as with our growers of wheat and turnips. If the sirocco comes and nips up their vines they have nothing to sell, and if it does not come and they have abundant crops, then they can get no price. However, our own enormously increased consumption must be some compensation for fallings off elsewhere, and the extremely low price this year ought to create an extraordinary demand, the effect of which will be to extend the popularity of the fruit for years to come. In 1834 there was a tax of £2 4s. a cwt. on this fruit—nearly five pence a pound. Of course, there were scarcely any eaters. In that year, however, the tax was reduced by half, but even with that the consumption never rose to much over 9000 tons. Ten years later the tax was brought down to 15s., and in a few years the consumption rose to 21,000 tons. In 1860 came another reduction in the tax, and by 1880 our importation had become over 37,000 tons. Ten years ago, when there was still a small import duty, our consumption was somewhere about 70,000 tons. This year, what with the entire freedom from duty, the falling-off of the French market, and the enormous crops, it is computed that our imports of currants will not be less than 160,000 to 170,000 tons, and as it has been said, prices for good sound fruit have dropped 50 per cent. However, in the long run the Greeks will be pretty sure to take it out of us. Such quantities and such prices mean a great popularizing of the humble currant and as the growth of it is entirely confined to the rocky, volcanic, little islets on the coast of Greece, the growers have an absolute monopoly. Many attempts have been made to get the vine to grow elsewhere—in the neighborhood of Smyrna, for instance, and in two or three localities in Spain—but though the plant will grow, the fruit degenerates and some becomes worthless.

Plums, too, are very abundant this year. The popular Sultanias, which only two or three years ago sold at famine prices, are now lower than ever, and though the best qualities may still fetch their prices, there is this year an abundance of excellent fruit of this particular kind to be had for three pence a pound. The grapes which come to us in the form of "plums" for our puddings, or as raisins for desert, grow like the currants in some of the sunniest and prettiest spots on earth. A little musing over the ingredients of a plum pudding should be well calculated to enhance one's appreciation of it in the dull dark days and the sullen skies of a London midwinter. Plums are, of course, grown in the open air, on sunny plains or the lower slopes of mountains. Like the currants of Zante or the grapes of southern France, they are supported on poles, and in order to convert grapes into "plums," the fruit requires special treatment. The inferior kinds are gathered and dried, and dipped into a liquor containing salt oil, wood ashes, and vanilla, which imparts to them the ruddy brown color by which "plums" are distinguished from raisins. The grapes grown for raisins are dried, or partly dried, before they are gathered, the stalk of each bunch being partly cut through. This causes the bunch to wither and shrivel without losing its beautiful bloom. After awhile they are severed from the vine and laid out in small sheltered places on banks sloping to the sun, provision being made for covering them up from rain or the dew of night. Great care is taken to pick from these drying beds only those that have been sufficiently exposed. From 8 to 12 days is the usual time, and skilled men are employed to sit on boards supported over the beds and pick out the bunches that are properly dried. They are taken to the packing houses, where every bunch is closely examined and where inferior or unripe grapes are clipped out with scissors and thrown into a barrel for wine making. The good grapes are sorted into qualities, packed into boxes, and finally exported to us as Malaga or Valencia raisins. They come to us with a reminder of some of the most delightful scenery and most enjoyable climate of Europe, where grow myrtles and citron groves, pomegranates and mulberry trees, figs and

orange gardens, almond blossoms and lemon trees, veritable gardens of perpetual bloom and fruitfulness. And yet, even here the growers are not altogether happy. Other parts of the world are entering keenly into competition with them, and hence it is that prices for all but the highest quality of fruit are unprecedentedly low.

But besides plums and currants there are other fruits that enter into the composition of any well-constituted and orthodox plum pudding. Candied peel, though not a large item in our Christmas grocery, is certainly an important one, and this, too, comes with a whisper of sunny lands and balmy breezes. We get lemons pretty well all the year round—April to the end of August; they come to us from Naples. From August to November our supply comes from Malaga, and from November to May Palermo and Messina take up the running. The lemon peel, which in a candied form we find in our puddings, comes to us in pipes of brine from Messina. Here in England it is taken out of the brine, has the salt removed from it by a process of steaming, and is then "candied." Of citron peel, pretty much the same may be said, except that we get our best citrons from Corsica, though a good many come to us with the lemons from Messina. All these fruits, together with all sorts of nuts, have for some weeks past been pouring into our markets in great abundance, our own cob-nuts from Kent having also proved an excellent crop this year. Jordan almonds, which last year fetched two shillings, have this season fallen to 18 pence, and most other nuts are equally low.

Pineapples are getting cheaper and cheaper as the production extends and the popular taste for them develops. In St. Michaels, the island of the Azores to which we always used to look for the finest of our oranges, the pine has come to be quite a specialty, and one ship recently arrived at London Bridge with just about twenty-four thousand delicious pines on board. St. Michaels has almost entirely given up sending oranges to this market; indeed, this Christmas there seems to be none at all over here. The Spanish growers have very greatly developed their business and have much improved the quality of their fruit of late years. This season they too seem to have heavy crops to report, and oranges this Christmas are, like all other kinds of fruit, sure to be very cheap. Consignments already in the market are very heavy, and are reported to be in excellent condition, though a little late. Jaffa oranges, the large, egg-shaped fruit, seem to be becoming very popular as their delicious quality becomes known, and though, of course, from their large size, they are higher in price than most others. They are exceptionally cheap this year and may be bought for 18 pence a dozen. Altogether this seems to have been a very abundant fruit year, and if our Christmas tables do not reflect something of the brightness and bountifulness of many an earthly paradise it will not be for want of a good supply.

[They call this a good supply, and yet almost any California fruit-grower can far surpass it from his own pantry. Evidently we have to teach the Londoner what is a good supply before he can appreciate and call for it.—ED.]

Kerosene Emulsion.

TO THE EDITOR:—Please answer through your valuable paper the reason for the following: I had occasion to make some kerosene emulsion. I used our well water which is hard, and the formula given by Prof. C. V. Riley, U. S. Entomologist, following his directions exactly, but there was no emulsion. I finally tried heating it, and at once a fine emulsion formed, but when I diluted it the oil rose to the top and the next day I could dip enough oil off to kindle a fire. I also tried the formula given by Prof. A. J. Cook, formerly of the State Agricultural College of Michigan, but now of Pomona College, this State. In this I had good success, making a complete emulsion, and the next day it was as perfect as the night before. Please explain the reason for the failure of the Riley formula.—ERNEST A. GAMMON, Courtland, Sacramento Co., Cal., Jan. 2, 1894.

Comments by Prof. C. W. Woodworth.

To produce the "Riley emulsion" the soap solution should be *hot*, and the pumping continued five to ten minutes.

When a soap solution and kerosene are stirred together there is soon formed a creamy substance which will bear dilution if it contains enough soap. This is the "Cook emulsion." If a higher per cent of kerosene is wanted, the stirring must be much more violent and longer continued, and the emulsion thus obtained becomes as thick as clabber and is indeed quite a different substance. This, the Riley emulsion, will bear dilution without the separation of the kerosene. C. W. WOODWORTH.

University of California, Berkeley.

FLORIST AND GARDENER.

Annual Meeting of the State Floral Society.

The annual meeting of the State Floral Society was held January 12th. In his informal speech, President Wickson said:

"With reference to our affairs in general, we can congratulate ourselves on our success during the past year. We have an unfortunate debt left over from the last show, but leaving that out of the question our regular income has been satisfactory, and we have a live and active membership. Perhaps the notable feature of the year was the open-air meetings of June and July. These were very satisfactory, and will probably be arranged for again during the coming summer."

In consequence of the ill-health and subsequent absence from home of the secretary, his report was not forthcoming. The treasurer's report showed that the year's receipts amounted to \$1586.40, and the disbursements to \$1471.09, leaving a balance in hand of \$115.31.

A letter from Professor Emory E. Smith, superintendent of the department of horticulture of the Midwinter Fair, was read, urging the State Floral Society to appoint a

strong committee to confer with that department for the arrangement of flower shows during the continuance of the fair—above all, of regular fortnightly exhibitions of flowers. The president appointed the following committee: Mrs. Babcock, Mrs. Cross, Mrs. Hodgkins, Mrs. Wiester and W. McGowan.

The election for officers resulted in the return of E. J. Wickson, president; Mrs. L. O. Hodgkins, vice-president; Charles W. Aiken, secretary; John Henderson, Jr., treasurer; and Miss E. F. Bailey, accountant. The president, secretary and treasurer being ex-officio members of the board of directors, it only remained to elect two other directors. From among a number of nominations Mrs. B. P. Rodolph and Mrs. R. W. Brehm were elected.

The members listened to an interesting paper on ferns by Mrs. L. O. Hodgkins, followed by W. McGowan's address, "The Rose Blossoms of 1893."

During the meeting over a hundred varieties of ferns from the Sandwich Islands were on exhibition. These the society formally accepted as a gift from Mrs. Mary S. Sperry.

How They Use Eschscholtzias in England.

Foreigners have done much for our California poppies which might perhaps never have been done at home. We have the flower in such glorious amount that we thought little of developing varieties, but this was done abroad. They have also in distant parts made decorative uses of the plant, which we do not. If fact, if we should grow the poppy as an English writer advocates below, we take the risk of being ridiculed for having *weedy* garden beds. However, the following from the London *Garden* is very interesting:

The late Mr. Charles Perry, when an amateur rose-cultivator at Birmingham, used to adopt the practice of growing eschscholtzias among his standard roses, and, as he always said, to his entire satisfaction. That he obtained brilliant effects was patent to all who saw his rose garden when his favorite annuals were in bloom, and one saw large bushes with deep orange, yellow and lemon-colored tulip-shaped flowers rising above the graceful foliage in thousands, growing high enough to hide a good portion of the naked stems of the rose trees. Mr. Perry always held no harm was done to his plants or the bloom they carried; indeed, he considered that in summer on dry land the eschscholtzias were beneficial, keeping the soil cool; and, as he said with some truth, if it is necessary to have such a covering, let it be something beautiful to look upon. Since Mr. Perry grew his eschscholtzias several fine new varieties have been raised. In his day he had the lemon-colored *E. tenuifolia*, the yellow *E. Californica* and the golden *E. Crocea*. The varieties have since been extended by the introduction of the white form of *E. Californica*, the rich, the pretty and distinct rosy carmine *Rose Cardinal*, which is regarded as a variety of *E. grandiflora*, and the deep rich orange *E. Mandarin*, which, though placed in seed lists as a variety of *E. Crocea*, actually came from *Rose Cardinal*. Doubtless other annuals would serve the purpose of carpeting beds of standard roses, but perhaps nothing more lasting, brilliant and graceful than the eschscholtzia. Mr. Perry made a practice of sowing seeds in his rose beds in December, and by so doing he had the plants at their greatest beauty at the time the roses were in bloom, and they continued to flower in good condition until September, when the plants were all pulled up in order that the soil should not be made sour for the autumn. Originally grown as a biennial, the eschscholtzia blooms much better as an annual, and never, perhaps, so finely as when autumn-sown. I have seen in Mr. Waterer's nursery at Knapp Hill plants of eschscholtzia raised from seeds sown in late autumn that were marvelously fine, and it is not too much to say that the eschscholtzia is among the hardest of annuals. When the seeds are sown broadcast the plants come up thickly, and it is necessary they be thinned out 12 inches to 15 inches from each other, so as to afford ample room. They are much better sown in the open than when transplanted.

Cauliflower Culture in the South.

Samuel A. Cook of Georgia writes an article on this subject for the *American Agriculturist* which may be suggestive to our people. He says it requires skillful management to raise a satisfactory crop of cauliflowers in the Southern States, and it may be esteemed a very justifiable cause for pride when one secures a crop of fine heads to the extent of 50 per cent of his plantings. On ordinary soil it is the most difficult of all vegetables to raise successfully in middle Georgia—200 miles from the sea coast and with an elevation of from 300 to 500 feet above sea level. Insatiable almost as to moisture, extremely impatient of heat and coarse unfermented manure, more susceptible to frost than cabbage, subject to a number of insect enemies, it is by no means the easiest thing in the world to grow under our southern sun and in piney woods soil. A dozen fairly perfect heads out of a hundred plants is success sufficient to make the heart of the average amateur throb with satisfaction at the evidence of his horticultural ability.

The essentials of success with cauliflowers are good seed of a good variety, from which stocky, well-developed plants are grown in cold frames—hotbeds are not needed in this climate—and kept in readiness to be planted out in the open ground just so soon as the severe weather is over; soil that is naturally rich, or judiciously made so, inclined to be moist, which must be thoroughly plowed and pulverized just prior to setting out; an abundance of moisture; frequent shallow cultivation; and timely measures against insects.

Of the many named sorts which appear in seed catalogues, it is only necessary to name the Early Snowball, Early Dwarf Erfurt and Large Late Algiers. If confined to one kind exclusively, I should select the first named. Secure good seed at any cost. Neglect to do this is the

cause of so many failures. A good strain of seed must be secured from some reputable dealer who will warrant its quality. A good beginning has been made when good seed has been obtained. In our latitude the seeds are sowed in cold frames, from the 10th to the 20th of January, and as soon as the plants attain their third leaf they are pricked out and transplanted to another frame, at a distance of three or four inches apart each way. They are allowed to get stocky and well rooted, and about the last of February are transplanted to the open ground. The soil in the meantime has been deeply broken, well pulverized and lightly rolled; broad shallow furrows, three to four inches deep, are laid off three feet apart. A plant is set every two and one-half feet in the furrow, pressing the soil firmly to the roots. If the cutworms infest the soil, a little square of paper is twisted around the stem of the plants as they are set out. If the soil is at all dry, half a pint or more of water is poured into the depression left purposely close to the plant; and, when the water has soaked in, the hole is filled with dry soil to keep it from baking. By frequent stirrings of the soil early in the mornings, the plants are pushed forward. About a month or six weeks after planting out, a mulch of pine straw is applied along the rows to a depth of several inches, the mulching extending nearly a foot on each side of each row. A space 18 inches wide is thus left between the rows unmulched. The cultivation is done entirely with a sweep 20 to 24 inches wide, the wings of which run under the straw without displacing it at all. The mulch of pine leaves is put on after a saturating rain.

If the plantation can be made near a source of water—a well if nothing better—watering may be advantageously resorted to, but a well managed mulch can usually be made quite effective. When the soil needs enrichment, I have found nothing better than a mixture of bone dust two parts, unleached hardwood ashes one part, high-grade superphosphate one part. Of this mixture, one ton per acre should be well harrowed in several weeks before planting. If the need of additional nitrogen is indicated, 100 to 150 pounds of nitrate of soda may be evenly broadcasted just before mulching. The plants are usually prepared for transplanting by grouting the roots with a mixture of clay dust and fresh cow manure, half and half, and water enough to make into a mush, which will adhere to the roots freely when dipped into it. Half a teacupful of kerosene oil stirred into a bucketful of the grout will help to keep off cutworms if paper is not used about the stems. By carefully following this method, success will very likely follow the attempt to grow cauliflowers in the South.

THE FIELD.

Safety Farming.

We wrote recently on the advantages of the small many-crop farmer in a State where there is such a strong bent after specialties. The idea, as we said, was an old one, but not the less true and practicable. We believe many of our readers who are situated in regions of suitable soil and climate and with abundant water supplies can be profited by continuing the discussion, and to invite it we introduce an Eastern sermon on the same subject by a writer for the *Country Gentleman*:

When a discouraged farmer sells out and moves to town, he often gets an object lesson which is something of an eye-opener. I met one recently who sold his farm a few years ago and had just \$2000 in cash left, which, fortunately, was safely invested where it brings eight per cent interest. This farmer has learned something about taxation, for while I pay on real estate and personal property 13 mills on the dollar, this farmer in town pays 26 mills, and he said to me: "My taxes used up almost one-third of my income."

Now, I believe there is no man who can weather financial storms with so little distress as the farmer, and none who can get so large returns from a small investment. He is never out of profitable employment. With even a small farm, all the fruit, vegetables, milk, butter and poultry products needed in the family can be produced, and some surplus of all; and usually, in addition to this, the bread stuff and most of the meat. The farm referred to contained 25 acres, half of it fairly good plow-land, and the remainder good pasture, set with permanent blue grass and containing a spring. It is on a free turnpike, within 15 minutes' drive of a good market. All that is left of the income from what this farm was sold for, after the taxes are paid, will not pay the rent on as good a house as there is on it.

This is another thing in favor of a small farm—little time is lost in going to and from one's work, and the man is always within call. If it rains, you are at home to do some useful work under cover, or to go to the house and read, and you are your own master. All the big shops may close, but you will not be thrown out of employment, and no labor union can dictate to you what you shall do, or whom you shall employ.

Now if I had owned this farm, I would have remained on it and so managed as to get a good living from it. To begin with, I would keep but one horse, for with the exception of a very few days' plowing one good horse would do all the work, and there would be no difficulty in hiring a horse for this. I would keep four good Jersey cows, from which I could certainly depend on an income of \$50 each, and ought in a few years to increase this to \$75. I would devote three of the remaining twelve acres to gardening and small fruits, and from an experience of many years in this line I know that I could rely on an income of nearly, or quite, \$100 an acre from these three acres. This would leave nine acres on which to grow corn, wheat and clover, or such feeding crops as would be most profitable. From some experience I have had, I think I can grow more summer feed from sorghum than any plant I ever grew, and I should depend on this largely to tide over a summer

drouth. I certainly would never be caught with short pastures and no soiling crop, and the area under cultivation would be so small that I could put the land in fine condition and give it the best possible tillage. I would keep one or two good brooding sows—a little experience would enable me to decide which number was best—and raise two litters of pigs, spring and fall, and sell them young; often they would give the best profit sold at weaning time, but if not, I would push them so that they would be ready for the butcher at from four and a half to six months old. The milk and garden waste would go far towards keeping them, and it would be safe to expect an addition of from \$50 to \$100 to the income from them. Then 100 hens would produce in addition to all the eggs and poultry the family would use at least another hundred dollars. This would be my plan of starting on such a farm, but I would be ready to change my plans as soon as I was sure I could do better.

One should keep an account with each department of his farm, so that at the end of the year he can know just what each has paid. This might result in banishing the hogs and feeding the milk to the hens instead. It is quite possible that some crop would prove so well adapted to the soil and market that most of the cultivatable land could be devoted to its growth, and all the grain and a part of the hay bought for the stock. If this crop should prove to be strawberries, it would be fortunate, for the old beds can be plowed as soon as the picking is done, which is early enough to grow a full crop of fodder corn or sorghum; or if there is a market for sweet corn, a full crop can be grown, the ears sold, and the fodder fed to the cows. I should stick to the dairy and increase the number of cows, so as to get as much manure as possible, and it might be profitable to increase the number of cows to one for each acre of pasture, and only allow the cows to run out a few hours each day, and feed them bran and other grain food summer and winter, but this would depend upon whether manure could be bought near enough and at such a price that you could get what you needed cheaper than to keep the cows and produce it, and also to some extent on the price you could get for butter. The intelligent, progressive farmer will study all these questions carefully. About two tons of bran will feed a cow a year, and this can be bought usually, by taking advantage of the time when the millers are overstocked, for \$12 a ton or less. The manure from bran is especially valuable, and if you can grow crops which will return from \$60 to \$200 per acre—which will be true, I think, in many localities, of strawberries, sweet potatoes, tomatoes and some other crops—one can afford to keep cows liberally the year round if he keeps them most of the time where the manure can all be saved, for it is quite probable that the extra milk and butter would pay for heavy feeding, and leave the manure as clear profit.

I am not laying down any fixed rules which I would follow or advise any one else to, but only suggesting what might be done. I know one man on a 24-acre farm who makes strawberries, sweet corn, early onions for bunching, radishes, lettuce and sweet potatoes his money crops, and who is supporting a large family. Any one on a farm of this size who would attempt to make a living by growing corn and wheat, would certainly come to grief, for he would come in competition with millions of farmers, most of whom have better chances to grow profitable crops than he; but by growing special crops for a local market, and such crops as have a possibility of a large sum per acre, he reduces the number of competitors to perhaps a few neighbors.

Another point must not be lost sight of—this little farm comes very near supplying the table the year round, thus greatly reducing the expenses of living, and while it does not promise wealth it does remove the fear of want, and gives the farmer much leisure during the year which he can devote to reading. I say then in this time of financial distress, blessed is the contented farmer! And if he has learned to manage a little farm so as to have an assured income sufficient to meet his wants, then he is thrice blessed. While I never cease to be thankful that I am a farmer, I am especially so in times of financial distress, when the unemployed of our cities are counted by the millions. I am willing to endure all the ills incident to the farmer's lot, for the sake of the safety, the opportunity for development and the many blessings within easy reach of the man who intelligently manages his farm.

THE VINEYARD.

What Eighty Raisin-Producers Think of the Situation.

The Producers' Raisin-Packing Company, of Fresno, is sue the following declaration of their experiences and beliefs with reference to the production and handling of raisins under prevailing conditions:

The manner in which raisins have been marketed this year is an object lesson to every raisin-grower who desires to keep out of bankruptcy. As 80 raisin-growers, packing our own raisins, we desire to place before you the conditions as they now exist, the cause and the remedy.

The question that every raisin-grower who wishes to survive should now consider is how this disastrous state of circumstances can in the future be obviated. We know that at the price at which goods are now being sold, the producer will not net on the average the cost of production.

We know that the cost of producing raisins is not less than 2 to 2½ cents per pound. We recognize the fact that while the producer is getting poorer each year, the commission packers and handlers of California raisins are becoming richer, and we think that some method of co-operation should be immediately inaugurated to save the raisin industry from ruin.

Causes of the Present Existing Conditions.—Under this head we claim that the chief causes are as follows:

First—The unevenness in the packing, wherein different

houses put their raisins under known grades and in some cases put larger sized fruit in the grade than should naturally go there, and vice versa, and also where other houses pack inferior layers in the bottom of the form and good layers on top.

Second—The manner in which the raisins are being crowded in the East by commission packers who made a small advance on the raisins delivered to them. In the month of October there is always a demand by the wholesale trade for raisins, who are prepared to pay a fair price for them.

At the end of October these wholesale houses have all loaded up with a stock sufficient to last them until consumption creates a second demand. At the end of October the packers still have over one-half of their pack to dispose of, and instead of holding the crop here or shipping it to the East and holding it there, at regular prices, thus enabling the wholesale trade to take them as they require them, these raisins are consigned to some eastern broker and from \$500 to \$1000 a car is drawn upon him against the raisins so consigned. The broker advances the freight and pays the draft, and when he receives the raisins he cannot sell them at a fair price by reason of the fact that the entire market is supplied with all the raisins that will be consumed for the next month or two. The broker cannot afford to hold the goods. He takes them to the wholesale trade or the speculator and sells them at a price which will net the grower about 1 cent per pound on loose raisins and 2½ cents per pound on layers, which is considerably less than the cost of production.

We have seen box raisins sold which, after deducting the price of packing and freight, would not pay the growers 1 cent per pound. Many of the raisins are sold after November 1st at less than the price advanced to the grower in the sweat box, and when a settlement is made by the commission packer, the price received by the grower is an average between those raisins which are sold for a good price in the early part of October and those that are slaughtered later on.

Third—The indiscriminate consignment by individual packers and growers who have no standard mode of packing, the placing of these goods in the hands of irresponsible Eastern brokers who in some cases have hardly sufficient capital to pay the freight on the raisins consigned to them and are continuously slaughtering prices.

Remedy.—With a view of obviating the competition existing through the commission packers, we, as growers recommend the establishment of co-operative packing houses, operated by their own board of directors, who shall be growers, contributing all of their raisins to the packing house with which they are connected.

We recommend these co-operative companies to accept the raisins and make the same advance to non-stockholders as to their own stockholders, charging the same rates for packing and hauling as the commission men, and as an inducement agree to return to the grower one-third of the actual profit derived from packing.

One of the strongest holds that the commission packer has on the growers is the advance that he makes to enable the grower to pick his crop. Co-operative companies upon having the crop assigned to them can make the same advance, obtaining the money from the bank in the manner hereinafter described.

Capital Required.—The capital required to start a co-operative packing house is much less than is generally supposed. The banks of Fresno city will advance all the money necessary upon the note of the company guaranteed by their stockholders. The mere expense of equipping packing houses can in like manner be spread over a number of years.

One of the most disastrous results attending the slaughter of raisins during the present season has been the want of uniformity in the pack, some packers packing 2-crown raisins under a 3-crown brand and guaranteeing their 3-crown raisins as superior to their competitors' and selling at 3-crown prices. All co-operative companies should organize one company for marketing their fruit, by which means they will be able to maintain a uniform price and a uniform pack. To this end this company is prepared to place their experience at the disposal of any body of men who may be desirous of starting a co-operative company and will be prepared to attend the meetings and explain its operations.

In making advances to growers to assist them in picking their crop, it could be arranged by the grower assigning the crop to a trustee for account of the co-operative packing company, and the grower agreeing to deliver his crop to said co-operative packing company as soon as it is ready for market. There is no doubt whatever that capital could be obtained for this business provided the advance on the crop was anywhere within reason, and these advances be deducted out of the proceeds from the first raisins delivered at the packing house.

FORESTRY.

Forestry in the United States.

The report of the Executive Committee of the American Forestry Association shows that the work of the association is beginning to bear fruit, as may be seen from the following abstract of reports recently issued by the association:

Not only has the policy of reserving public timber lands for forestry purposes, established by the last Administration, been recognized by the present Administration, in reserving some 4,500,000 acres more (the Cascade Range and Ashland Timber Reserves in Oregon), making the total acreage in forest reservations nearly 18,000,000, but there is ground for hope that some rational legislation for protecting and utilizing these reserves may be enacted. Members of the association and all friends of forestry are requested to urge upon their representatives the passage of

House bill No. 119 as a first step toward a more rational use of the public timber lands.

While the action of the President and the assurances of the passage of such legislation are encouraging as committing the Government to a sound forestry policy, we have grounds for encouragement in other directions. The devotion to forestry of a special building and the creation of a special department of forestry at the Columbian Exposition are signs that our subject is permanently established, and the action of the Exposition authorities has done much to widen the circle of those who appreciate our endeavors. The special meeting of the association at Chicago, under the auspices of the World's Auxiliary Congress, has been hopeful in the same manner, and was successful especially in impressing the representatives of the lumber trade with the legitimate aims of the association and the need of its work for the benefit of the lumber interests.

The president of the association is at the head of the U. S. Department of Agriculture; one of our former secretaries is in charge of the public timber lands at the General Land Office; and the Chairman of the Public Lands Committee in the House of Representatives is fully persuaded of the necessity of new legislation along the lines urged by the association; and there is a realization that virgin forest resources have shrunk so as to expose as childish the cry of "inexhaustible" supplies, and the knowledge is at last dawning on the irrigators of the West that "the forest waters the farm," while there is a general awakening of public interest in the forestry movement, which purposes to turn the irrational destruction of a great national resource into a rational husbandry of the same.

The provisions of the bill mentioned above are extremely simple. Protection of the forest reservations (now comprising nearly 18,000,000 acres) is sought by the employment of the army, which has done such effective work in both the Yellowstone Park and Yosemite reservations. The Secretary of the Interior is empowered to make such rules and regulations and establish such service as will insure the objects of such reservations, namely, to regulate their occupancy, to utilize the timber of commercial value and to preserve the forest cover from destruction. He is also empowered to have cut and to sell timber on non-reserved lands under the same regulations as made for the forest reservations, provided that it shall be first shown that such cutting will not be injurious to the forest. The plan is endorsed by officers of the American Forestry Association, and is hereby recommended for support and propaganda by all friends of the association.

THE STABLE.

Hints on Stable Building and Fitting.

In selecting a site for a stable, a rising ground should be chosen to insure complete drainage, not only for the conveying away of the water falling from the roof, but also the urinary excretions of its inmates. In either case it is necessary that these fluids should be removed in order to keep the stable dry, but urine should be speedily conveyed away for other reasons—it not only keeps the flooring damp, but the gases disengaged from it are highly deleterious to animal economy, frequently acting as the exciting of derangement and contagious maladies, coughs, glanders, farcy, pneumonia and inflammation of the eyes.

It is far preferable to have a continuous underground drain from stall to stall throughout the stable, terminating in a small exterior reservoir, so constructed as to preclude the in-draught of air up the drains. Another advantage is attached to this manner of drainage, for the fluid drains from the center. There is no longer any necessity for that declivity of the flooring which was requisite when the liquid passes away by the foot-stall, for the ends and sides of the stall may be on the same level, gradually leveling toward the center point, where the grating is fixed.

We strongly recommend all our friends about to build stables to have them so constructed as to contain separate loose boxes, each being eleven feet in breadth, fourteen feet in length and twelve feet in height. The old-fashioned stalls, in which horses are attached by the halter to the manger, are bad. In the first place, many horses so situated never lie down; secondly, they are always standing on an inclined plane, sloping downward from before, backward. In order to make our views clear in exposing the evils necessarily inflicted on an animal in such a position we will briefly consider the anatomy of the foreleg.

Progression is effected by the horse in the following manner: The muscles of the back part of the leg (flexors) contract, which, together with the muscles of the arm, raise the leg from the ground. The foot is now in a position to be sent forward, which is affected by the contraction of the muscles at the front part of the leg (extensors), which send the leg forward. The foot comes again in contact with the ground, the flexors again contract and the above movements are again repeated.

If, during the time the foot of a living animal were situated on a plane, the extensor muscles of the limb belonging to the above foot were to contract, then the toe would be raised off the ground; but if, on the other hand, the flexors were to contract, the heel would be elevated. Now, during the period a horse is standing on the inclined plane before mentioned, the toes are elevated above the heels, *i. e.*, the extensors are contracting and the flexors are extending. Such action, contractile in the former case, and extensible in the latter, is opposed to muscular quietude. The flooring in most stalls is so constructed as to slope off at the heels, in order that the urinary secretions may flow down to a gutter at right angles to the stalls, and finally terminating in a liquid manure tank outside.

The result of this unnatural position is that the horse, in order to place his muscles in a state of rest, *i. e.*, in a neutral state—neither that of contraction nor extension—flexes his knees, and by this means removes the previous tension

imposed upon the muscles at the back part of the leg. This same attitude is continually persisted in, until the numerous ligaments at the back part of the knee become contracted. The knee is then permanently bent, and the disease denominated "over at knee" set up.

If a horse be placed in a stall with the flooring sloping to the gutter, as before described, but be untied and able to move about, it will be seen at one time he will stand with his head and at another time with his tail toward the manger, thus proving that the being obliged always to stand up hill, as it were, is distasteful to the animal. Observe, also, how often a horse will hang back, *i. e.*, place the hind feet on the rack situated behind the gutter. This is done evidently to place himself in a position favorable for rest again. When tied up the animal is obliged to lie nearly always in the same position. How many times have horses hung themselves in the halter at night? We could enumerate many cases, and many of our readers doubtless could do the same.

In the old-constructed stalls the hay rack, placed above the horse's head, necessitates the contraction of the cervical muscles of the animal when elevating his head in search of food. This continual action was considered by horsemen to be very fatiguing to the horse at any time, and more especially after a hard day's work. To remedy this evil many improvements have been made in hay racks, feed boxes, etc. The hay rack and feed box should be in one and the same straight line, situated in the same position as the manger previously was, *viz.*, below the horse's nose, but, in addition to this, in the same straight line as the hay rack, *etc.*, a water trough is fitted up. Owing to this plan the horse is able to feed with great ease, and the necessity for the continual action of elevating the head is removed. The presence of the water trough with water in it is very advantageous, for it enables the horse from time to time to take a little. The old notion of depriving horses of water is very injurious, and now, happily, most horsemen allow them, when at rest, to take it freely.

No doubt the imbibition of large draughts of cold water directly after work would be productive of evil to the animal, and perhaps induce colic. Practical experience has proven that a horse kept in the stable for a day with water before him during that time will not drink as much as the horse which is presented with it three or four times during the day by the groom. Nature prompts the horse when to drink, and when the promptings occur, nature, in this respect, should be satisfied.

We think it a good plan to accustom the horse to always drink before feeding him. By so doing we oftentimes prevent him from bolting his food, and bringing on an attack of indigestion.

All food, before being placed in the trough, should be well sifted, in order that nails or small pieces of stone may be readily detected. Small stones and nails, be it well remembered, very frequently constitute the nuclei around which calcareous depositions accumulate, which form the various kinds of calculi found in the alimentary canal. Nails and other substances are often taken into the body through the mouth, and finally find their way through the muscular coats of the intestines into the various organs of the body. An anecdote is related of a gentleman who swallowed a penknife, which remained in his body for nine months, at the end of which time he complained of pains in his shoulder, where an abscess formed, pointed, and from it the above-mentioned knife was extracted. The following came under our observation: A child, aged three years, swallowed a needle, three months after which an abscess formed on the thigh and the needle was removed from it.

Ventilation is necessary as a means for the removal of gases rendered impure, and therefore unfit for respiration. A current of air should be admitted through a grating near the ground, and so contrived as not to blow upon the horse. An aperture should be made in the roof, over which a chimney, provided with a weather fend, should be placed, so that a current of foul gases may be continually escaping, and its re-entrance (often carried by gusts of wind) frustrated by the weather fend. The temperature of a stable should be about 60 degrees Fahrenheit.—Chas. R. Wood, V. S., in Horse Breeder.

POULTRY YARD.

Artificial Hatching and Rearing of Chickens.

TO THE EDITOR:—The subject of artificial hatching and raising fowls seems to be looked on by many who have never tried it as a thing with a trap. Now I have given artificial hatching and brooder raising careful tests, and am satisfied artificial means are much more satisfactory than the old hen as we find her among the average of her kind. What has caused me to make mention of it now is the visits of two neighbors within the last week. One is a veteran hen raiser, the other an incubator admirer. The former put 130 eggs under 10 hens and got out 35 chicks. Of course this was not his usual success, but it shows that seemingly good sitters will not always coax out the chicks. Now, the second neighbor had 190 fertile eggs in his machine, and took out 170 good chicks. I have hatched in my machines 92 per cent on one occasion, but as a rule count that from 80 to 85 per cent is good hatching. As for raising, it is so much easier for me with brooders than with hens that I would close my ranch before I would go back to raising chickens with hens.

To any one who has trouble with brooder chicks, please try this method and you will be an advocate of artificial hatching. For the first 48 hours do not give the little chicks anything to eat or drink. Then commence by feeding for the first three days as follows: Crumbled stale bread every two hours, omitting one feed of bread and feeding finely chopped onions—cabbage, lettuce or finely cut green barley or wheat is good. Keep millet or rape seed scattered about over the floor or in a small vessel. I find

a low pie pan very convenient for this purpose. For drink I have used sweet milk at times, and other times pure water. I have found to put Douglas mixture in the water the first day had a good effect, as it seems to check the tendency toward diarrhea. I suppose every one knows what Douglas mixture is, but in case some one does not I will give proportions. Take half a pound of copperas and half an ounce sulphuric acid to one gallon of water. One tablespoonful of this mixture is enough to one gallon of drinking water. Always take away the feed board as soon as the chicks have finished eating. After the third day a mixture of ground corn, oats, bran and middlings mixed in the following manner, baked and crumbled dry will make chicks grow and do well: One part corn, one part ground oats, one part bran and two parts middlings, mixed with sour or buttermilk if obtainable. Put soda enough in it to make it rise well, or about the same as you would to make Johnny cake. A little lean beef scraps, not more than five per cent of the whole, added to this is good. Give one feed every three days of meat, or, if you have plenty of sour milk, make curd and feed instead of meat. This may be fed once a day. I commence on the fourth day feeding the Johnny cake, and use cracked wheat after this time instead of the millet or rape seed, and always keep the cracked wheat where the chicks can run to it as they wish. After the first week I only feed the Johnny cake every four hours, always making one feed of green or vegetable matter each day, and I think a great deal of onions for chickens, young and old. For summer chicks there is nothing so good as to put fresh horse manure in a pile and let it lie from 36 to 48 hours. At the end of this time it will be found full of worms from the fly blows. It sometimes seems to be literally alive. Throw this in the runs and let the chicks scratch it and eat the worms. They will learn in two or three days to come as far as they can to meet you when you wheel it to them, and seem to go wild over it. You must always remember that your brooders must be kept clean and fresh. For a feed board a 12-inch board with a lath on either edge is the best thing I have used. I always keep a vessel with coarse ground shells, fine broken charcoal and fine sharp gravel where the chicks can get it as they wish.

I want to add I have no incubators nor brooders to sell, nor am I interested in the sale of any. J. W. FORGEUS.
Santa Cruz, Cal., Jan. 16, 1894.

Artificial Hatching and Raising.

F. M. Reed, of Anderson, Cal., writes his experience for the *California Cultivator* concerning hatching and rearing from the incubator standpoint. In this modern age, when artificial hatchers have been brought to the degree of perfection that many of them have, it is, in my estimation, folly to try to get along in the old way. The old hen, as a general thing, only becomes broody in the spring months, and many of them not until late spring. If, therefore, the hen alone is dependend upon for hatching, the poultryman's visions of numberless broods of early hatched broilers fade into an insignificant lot of lousy summer chicks. And all who have had any experience know how much more satisfactory and profitable the early hatched chicks are both for market or for breeding. I have had the question asked me, "Is it not much more expensive hatching with incubators than with hens?" I answer *no*. Take for instance a 120-egg size. It will take on an average from three to four gallons of oil to run it three weeks, costing not to exceed 75 cents. Now take the ten hens necessary to hatch the same number of eggs and count your feed, and the difference is not great. Therefore keep your hens laying and hatch with incubators. It is not the purpose of this paper to discriminate between the different makes of machines. However, I have had my experience with a number, and a dear one it was, and I have this to say: I consider our California made machines equal to, if not superior to the Eastern machines. In buying it is well, if possible, to see the machine before purchasing, and always look well to the simplicity of it. The more simple a machine is in its make up, and yet do its work without watching, is the most desirable and the less liable to get out of order. Most reliable makes are now sold with a guarantee.

But the hatching question is to me the smallest part. The brooding or raising of the chicks is the difficult part. Here I would say that my experience for several years has led me to choose and use a top-heat brooder. I have had fine success since using them, whereas the great mortality of young chicks I had in the *strictly* bottom-heat brooders well nigh disgusted me. It is a matter that each, with a little study, can make plain to themselves. Notice how a hen broods her chicks. She always prefers the cool ground, and the youngsters stand or sit on the ground, reaching up to receive the warmth on their backs. The same natural plan applies to top-heat brooders. The sand in the floors is cool on which they stand and stretch out at full length, occasionally rising and stretching up their necks for the warmth from above.

Now, reverse the plan; let the chicks stand upon a floor directly heated from underneath, at times the sand heated hot, upon which the chicks must stand or sit night after night, and the results are leg weakness and bowel trouble. I am well aware that this is a subject upon which there is a difference of opinion, and well there is. But the plan that is nearest to nature, and gives the least mortality of chicks, is the one we are all after.

Now, when you have settled the question of incubators and brooders, then get good eggs for hatching. Don't waste your oil on store eggs. While store eggs sometimes hatch well, the usual results are about 50 per cent infertile, or weak from inbreeding. It costs no more to raise a thoroughbred than a mongrel; therefore get good stock, raise your own eggs and hatch strong chicks. Care should be taken when the chicks are taken from the incubator to not let them get chilled, and the brooder should be heated up a few hours before it is wanted, and be at

fully 90 degrees heat when the chicks are put in. The feed, of course, is important. I have found oatmeal the best food for chicks, fed dry with slightly warm water to drink. Bread crumbs, very slightly moistened with milk, are good. Fresh sand, rather coarsely screened, should be put in the brooders every day, as the chicks will eat more or less of it at first for grit. I always put a dish of finely cracked wheat and bone mixed together before the chicks from the first, so they can go to it when they want it. Never give sloppy food, and be judicious in feeding green food and meat the first few weeks. Much depends on personal attention and regular feeding by one person only.

THE DAIRY.

The Oleomargarine Warfare.

We are naturally looking to the great dairy States of the East to carry forward the center columns in the warfare against the bogus products which are made within their borders. Governor Flower of New York, in his message to the Legislature which assembled the first of the present month, has the following paragraphs on this question:

The State of New York has expended a great deal of money to protect the dairy interest from competition with spurious butter. Our laws on the subject are very strong, absolutely prohibiting the manufacture or sale of oleomargarine or any substitute colored in semblance or imitation of butter within the State. Notwithstanding these stringent laws, persons have been engaged more persistently during the last six months than ever before in flooding the State with their products, openly defying the law and claiming the right to sell their goods under the Interstate Commerce decisions in original and unbroken packages. While this might be conceded if oleomargarine were sold as a product pure and simple, the question presents a different phase in the form in which oleomargarine is placed upon the market. As made, oleomargarine is a colorless substance of about the appearance of lard. As sold, it is colored in semblance and imitation of dairy butter. In the case of *People vs. Avenburg*, reported in 105 N. Y. Reports, page 123, the Court of Appeals decided that the "law which prohibits the manufacture or sale of any product not made from unadulterated milk or cream, but made in imitation or semblance of dairy butter, is constitutional, and producers of butter from animal fats or oils, although the product may be nutritious and suitable for food and the manufacture and sale thereof may not be prohibited, have no constitutional right to resort to devices for the purpose of making their product resemble dairy butter, and the Legislature has power to enact such laws as it may deem necessary to prevent the simulated article being put upon the market in such form or manner as to be calculated to deceive."

It has been held in other States—notably in Pennsylvania and New Jersey—that the statutes prohibiting the sale of such products were clearly within the police powers of the State, in protecting its citizens from fraud, and also in the interests of the public health. It will be some time before this question can properly be passed upon by the Supreme Court of the United States, and in the meantime I suggest that the Legislature petition Congress to provide by statute that all food products coming from one State into another shall, immediately upon their entry into the State, become subject to the State laws. This was done after the Kansas decisions in reference to liquor, resulting in the passage of what is known as the Wilson act, which simply covers the sale of liquors. It should be extended to all food products. Such action will meet with the approval of the dairy interests of the State.

This suggestion of Governor Flower has been speedily acted upon, for Senator Hill has introduced the following short and sensible bill, which ought to pass Congress and be signed by the President without delay:

"All articles known as oleomargarine, butterine, imitation butter, or imitation cheese, or any substance in semblance of butter or cheese, not the usual product of the dairy and not made exclusively of pure and unadulterated milk or cream, transported into any State or Territory, or remaining therein for use, consumption, sale, or storage therein, shall, upon arrival in such State or Territory, be subjected to the operation and effect of the laws of the said State or Territory, and the exercise of its police powers to the same extent and in the same manner as though such articles or substances had been produced in such State or Territory, and shall not be exempt therefrom by reason of being introduced therein in original packages or otherwise."

Prune Fed Pork.

Mr. C. E. Hoskins, of Springbrook, has made an interesting experiment this year with feeding prunes to hogs. When grading prunes before drying, all prunes which passed through the $\frac{3}{4}$ inch opening (prunes which would run from 120 to 140 per pound when dried) were placed on the trays just as they came from the grader and dried without cleaning and dipping. These he used to feed hogs with and found the results very satisfactory. The hogs did remarkably well on their prune diet and the pork was of unusually good flavor, as might be expected. Mr. Hoskins expresses the opinion that every prune-grower should make a note of this and try the experiment next fall. No prunes of the size mentioned ought to be sent to market from Oregon under any circumstances, and if, as his experience this last year indicates, they have special value as hog feed, they should be utilized for that purpose. The knowledge of such a fact would also be of value in case there should at any time be such a depression in the price of prunes as there is in the price of wheat at this time. Oregon hogs raised on clover and milk and finished off with prunes ought to give a product rivaling in quality the famed Westphalia hams, which sell for about double the price of the best corn-fed product.—Rural Northwest.

FRUIT MARKETING.

Details of the Fruit Exchange Organization.

The following are the objects for which the California Fruit Exchange is organized, as set forth in their articles of incorporation:

To promote the interests of the producers of fruit and other food products of California, especially by collecting and disseminating information and statistics bearing upon the preparation and marketing of said products; establishing uniformity in methods of manipulating, grading and packing, and extending and developing markets.

To borrow money, loan and make advances of the same upon products in possession or under the control of the corporation; and to promote the formation of local co-operative associations affiliating with this corporation, and assist in establishing their credit.

To purchase and sell all supplies used in raising, preparing and marketing said fruit and food products; to lease, purchase or otherwise obtain real or personal property, necessary to the transaction of the business of the corporation, and to sell or exchange the same.

To receive, store and market for account of its owners all fruit and other food products entrusted to the corporation for that purpose, on such terms as the by-laws and regulations of the Board shall prescribe.

The following code of by-laws for the California Fruit Exchange has been approved by the Board of Directors, and recommended for adoption by the stockholders at a meeting which will be called for that purpose:

By-Laws.

SECTION 1. The name of this corporation shall be the California Fruit Exchange. It shall have a corporate seal which shall be circular, and bear upon its circumference the words "California Fruit Exchange," with the date of incorporation.

SEC. 2. The principal place of business of the corporation shall be in the city of San Francisco.

SEC. 3. The corporate powers of the corporation shall be vested in a board of eleven directors, who shall serve for one year, and until their successors are elected and qualified.

SEC. 4. The capital stock of this corporation shall be \$100,000, divided into twenty thousand (20,000) shares of a par value of five (5) dollars each.

SEC. 5. The annual meeting of the stockholders of the corporation shall be held at its principal place of business on the third Thursday in January in each year, at which time the Directors shall be elected.

SEC. 6. One month before the annual meeting the Secretary shall mail to each stockholder a complete list of the stockholders, with the number of shares standing in the name of each. Thereupon any stockholder, by letter mailed to the Secretary of the corporation, may nominate one or more stockholders for Directors, and the names of all stockholders so nominated shall be printed in alphabetical order and mailed to each stockholder one week before the annual meeting.

SEC. 7. At all meetings of this corporation stockholders may vote in person or by proxy. Proxies must be in writing and filed with the Secretary. No person can vote a proxy who is not himself a stockholder.

SEC. 8. Certificates of stock may be issued prior to the full payment of the par value, subject to the provisions of these by-laws.

Each subscriber must, upon the issuance of his certificate, pay to the Secretary 25 per cent of the par value of said stock; and thereafter, on the call of the Board of Directors, must pay such proportion of the par value, as in their judgment may be deemed necessary, until the whole is fully paid.

SEC. 9. The corporation shall sell no stock to any person unless he be a producer of fruit, nuts, beans, honey, or other similar food product.

SEC. 10. At the annual meeting a committee of three stockholders, not Directors or officers, shall be elected by the stockholders, whose duty it shall be, at the succeeding annual meeting, to report to the stockholders upon the accounts, bookkeeping and general financial condition and management of the corporation, and all the books and papers of the corporation shall be at all times subject to examination by this committee.

SEC. 11. Immediately after their election the Directors must organize by the election of a President and Vice-President (who must be of their number), a Secretary and a Treasurer (who may be a corporation). They must perform the duties enjoined on them by law and the by-laws of the corporation. Such officers shall hold office for one year and until their successors are elected and qualified.

SEC. 12. The office of Manager shall be filled at the discretion of the Board, and his term of office shall be at their pleasure. He shall perform such duties as the Board may prescribe.

SEC. 13. The Board of Directors may adopt such rules and regulations for their government, and for the management of the affairs of the corporation, as they may deem advisable and not inconsistent with the provisions of these by-laws.

SEC. 14. All officers entrusted with the control of the funds of the corporation shall give bonds in such sums and with such sureties as the Board of Directors may prescribe.

SEC. 15. The President shall be the executive officer of the corporation, and shall preside at all meetings of the stockholders, and of the Board of Directors; shall sign, with the Secretary, all certificates of stocks, deeds, contracts, leases, and generally exercise all other authorities, and perform all other duties connected with the affairs of the corporation requisite and appropriate to such office. He shall receive such compensation as may be fixed by the Board of Directors for his services to the corporation as President; and shall be allowed actual traveling expenses in attend-

ance upon any business appertaining to the affairs of the corporation.

SEC. 16. The Vice-President shall, in the absence, or other incapacity of the President, perform his duties and exercise his powers, being subject to the same rules as to compensation and expenses when acting as such President.

SEC. 17. The Secretary shall be the custodian of the records of the corporation. He shall keep full minutes of the proceedings of all meetings of the stockholders and of the Board of Directors. He shall, jointly with the President, sign all certificates of stock, always strictly in accordance with the by-laws regulating the issue and transfer of stock. He shall keep an accurate account with the stockholders of the corporation. He shall countersign all contracts, deeds and leases signed by the President under the direction of the Board of Directors, keeping an accurate record of the same. He shall collect of the stockholders the amounts due from stock and assessments if any, from time to time, and pay the same over to the Treasurer of the corporation, taking his receipt therefor. He shall keep accurate accounts of the receipts and expenditures of the corporation; and render proper statements thereof. He shall issue the proper notices of all meetings of the stockholders and of the Board of Directors and perform such other duties as are appropriate to the office of Secretary, and as are required by the Board of Directors.

SEC. 18. The funds of the corporation shall be deposited in its name in some bank designated by the Board of Directors, and withdrawn and disbursed under such regulations as the Board may prescribe.

SEC. 19. The Board of Directors shall meet regularly twice each year and otherwise at the call of the President or any two Directors. Directors shall receive actual expenses incurred in the discharge of their duties as such.

SEC. 20. Special meetings of the stockholders may be called by the President upon the written request of a majority of the Board of Directors or of ten (10) stockholders. Notice of all meetings of stockholders of the corporation shall be given in the manner required by law. A majority of the stock issued shall constitute a quorum.

SEC. 21. The Exchange shall seek by all means to extend the market for California fruit and food products.

SEC. 22. At the annual meeting of the corporation, the Board of Directors shall cause to be made a complete exhibit of the business and financial condition of the Exchange.

SEC. 23. Vacancies from any cause in the Board of Directors shall be filled for the unexpired term by the remainder of the Board at any meeting.

SEC. 24. Sales of fruit shall be made only for cash upon delivery of fruit or bill of lading, except through responsible agents guaranteeing payment, and who have themselves given bonds to the Exchange sufficient to make good said guarantee, and any losses sustained by violation of this by-law shall be made good to the Exchange by the officers or Directors responsible therefor.

SEC. 25. No Director, officer or employe of the corporation shall be directly or indirectly engaged in the sale of fruit or food products of the classes handled by the Exchange, and not of his own production, unless such sales be made through this Exchange or through some local co-operative society affiliated with this Exchange.

SEC. 26. No debt beyond the sum of \$5000 shall be created except by vote of three-fourths of the stock issued, except for money to supply advances on fruit in possession or under the control of the corporation, or for material and supplies which must be sold for cash.

SEC. 27. The books, records and business papers of the corporation shall be open to the inspection of stockholders at all times.

SEC. 28. The Board of Directors may make all needful rules and regulations for the conduct of the business of the Exchange not inconsistent with law or with these by-laws.

SEC. 29. These by-laws may be altered or amended in the manner provided by law.

More About the Perkins Process.

In the RURAL of November 4th we gave an outline of a process for preserving fruit during transportation, devised by Rev. A. T. Perkins of Alameda. In December we gave the favorable report of a committee appointed by the State Horticultural Society to investigate the subject. Mr. Perkins has been reserved about giving in detail the process upon which he relies, because patents had not been granted. Now, we understand, these patents have been secured, and a reporter of the *Call* has been furnished with details of the process. We take therefrom such statements as are additional to the descriptions we have previously given:

The dry-air process is based on the scientific principle that when fruit decays a new life begins, *i. e.*, the fungoid growth. Dampness is conducive to the spread of fungus, while dryness has the opposite tendency. In other words, ripe fruit will last longest while it is under the influence of dry air at the temperature of 55 degrees. Under these conditions the life of the fruit is prolonged and decay arrested for a longer period than under any other known condition.

The natural inquiry is: "Where can you secure a steady supply of dry air at a steady temperature in a car which moves through a variety of climates on its long journey across the continent?"

An answer to this question involves much more than a description of the mechanical appliances used. It is a well-established principle of science that when air is compressed its temperature is raised. For instance, take five atmospheres at a temperature of 100 degrees Fahrenheit. Compress them into the space of one atmosphere, and you raise the temperature to 250 degrees. Release compressed air and it instantly becomes cooler.

In applying this principle to a freight car you must have a tank or reservoir to hold compressed air at a high tem-

perature. The air is released by stop-cocks through spray nozzles so arranged within the car that there is a constant circulation throughout every part of the car, of dry air. The equable temperature of 55 degrees is maintained by regulating the pressure at the nozzles, just as the pressure of water is regulated. Additional to this there is for further protection and for better circulation of air a three-inch shell which surrounds the car.

A constant supply of compressed air can be furnished to the tank from the locomotive in exactly the same manner as air is furnished to the Westinghouse brake. But it is not known as yet whether the railroads would be willing to equip their engines as to furnish this supply of air; therefore, a plan has been perfected whereby the process can be carried on independent of the locomotive. There will be the tank full of compressed air at the beginning of the journey. Each car will be provided with an air pump, which will receive its motive power from a simple arrangement attached to one of the car axles. This pump will furnish a fresh supply as fast as the stock is exhausted. A delay, during which the car should not move, would shut off the dry air, but still the fruit would keep far better exposed, after having been subjected for a time to contact with dry air, than it would fresh from the tree, for the reason that much of the humidity—the principal factor in decay—has been removed.

The risk of loss or damage to fruit in case a car is side-tracked has been amply provided against. First, there is a shell on the outside, leaving a three-inch space for the circulation of dry air; inside of that another three-inch space for dead air, and inside of that the air chamber containing the fruit. The dry air, after making the circuit of the car, escapes through vents under the footboard on top of the car.

These double shells were tested last summer on the Arizona deserts. While the side of a refrigerator car exposed to the sun was so hot that one's hand could not be held against it, the interior shell of the Perkins car was only a little above normal. Thus protected, it is claimed that a breakdown of not to exceed five days, whatever the temperature of the outside air, will not affect the fruit adversely.

It should not be inferred that the fruit must be kept at 55 degrees exactly. Any temperature between 55 and 65 is perfectly safe.

Moisture and high or low temperature are food for the development of fungoid growth. After the fungus has once gained a foothold, its spread is very rapid. The process just described acts upon all the factors of decay. The refrigerator method takes the fruit before it is perfectly matured, before it receives its full amount of sugar, and places it in a low temperature, retarding fermentation. When the fruit is transferred to a warm temperature the fermentation is abnormally rapid and the decay rapid in proportion. Under dry air the fruit not only keeps better in transit, but lives much longer after being taken out of the car.

After all is said, the dry-air process, while very interesting, would have very little practical value apart from its financial consideration.

In the first place, it will save \$200 a car in freight charges alone. Rates for the Perkins car have not yet been fixed, but it may be safely announced that the charge to Chicago for the use of the car itself will not exceed \$50. It ought to save about \$100 in the haul.

All of the points claimed for the dry-air process are demonstrated facts, not theories. Every test that could be made has been tried over and over again in the laboratory with results as described. It now remains to put the process into practical operation on cars which shall make the transcontinental journey. This will be done at once.

The patents granted to Dr. Perkins have been acquired by the International Transit Line, a company of Alameda county capitalists. Work is now in progress on a car to be fitted with an air-pump and tank. It will be ready for service before the early fruit season opens. A few trips to Chicago will develop what mechanical modifications, if any, are necessary for perfect transportation, and, these decided on, the manufacture of cars will begin on an extensive scale.

The probability is that 1000 cars will be built the first year. There are now in use 1700 refrigerator cars, and this number is insufficient for the fruit-growing industry. In the busy season there are never so many cars as shippers need. One great drawback to the refrigerator cars is that, after making two or three round trips, they have to be thoroughly cleaned with water and then remain idle while they dry. The Perkins car is available for almost any sort of freight for the return trip.

Free Lumber.

The Puget Sound *Lumberman* says: "How free lumber will effect the Pacific Coast can be easily figured out. The capital invested in the lumber industry in Washington, Oregon and California is not far from \$50,000,000; nearly 27,000 are paid in wages \$18,000,000 annually. Washington and Oregon last year produced 1,700,000,000 feet of lumber. Of this amount 350,000,000 feet were shipped to California and about 300,000,000 feet were shipped to foreign ports and the East. At the same time nearly 2,000,000,000 shingles were cut in the two States, over one-half of which found markets in the Eastern States. The industry brought into the two States about \$12,000,000 last year, and is consequently the mainstay of the Pacific Northwest. This trade is threatened by British Columbia and Canada in the event of the Wilson bill becoming a law. Lumber carried from Washington and Oregon to any port within the United States must be carried in American bottoms. This places the Washington and Oregon lumbermen at a disadvantage in case of competition with British Columbia, and the California market, which takes fully one-half of the exports of lumber from Washington and Oregon, will practically be given over to British Columbia if the Wilson bill becomes a law."

Horticulture in Napa.

Mr. Leonard Coates in Napa Register.

I have been asked by the editor of the Napa Register to write a few lines on horticulture in Napa for his special Midwinter edition. After 18 years' residence in Napa valley, engaged during the whole of that time in actual horticultural pursuits, in almost every branch, the conclusions arrived at are somewhat as follows, which conclusions have, perchance, an added strength when it is known that a large nursery business, extending all over the Pacific coast, has given me peculiar facilities for critical and comparative observation.

There are many localities in California which are becoming known as "the home of the prune," or "the home of the peach," or "the home of the orange," and so on, but it does seem to me that, speaking candidly and impartially, Napa valley is the home of all good things horticultural. To enumerate briefly, and for the edification of those who are strangers to this garden spot:

The apple, by many considered the king of fruits, is perfectly at home in Napa. The varieties chiefly grown are Astrakan, Alexander, Gravenstein, Bellefleur, Spitzenberg, Hoover, R. I. Greening, Newton Pippin—earliest to latest. You can't grow good apples in excessively hot portions of the State.

Pears are equally as good, few varieties being grown in quantity, however, but the Bartlett. In the smaller valleys to the northeast of the main valley, as in Berryessa, the quality and size of the Bartlett pear can scarcely be equalled elsewhere.

Peaches, for size, color and lusciousness unsurpassed, thrive anywhere in the valley or on the hillside, where the land has natural drainage. Peaches here always attain great size and superior quality, because the rainfall is regular and ample during the winter months, and irrigation is never needed. The varieties most planted are Alexander, Hale's, Crawford, Orange Cling, Muir, Susquehanna, Salway, with others of more local renown.

Plums and prunes are so pronounced a success that, were it possible to make a choice, these would be the varieties.

The large plums, as Pond's (or Hungarian, locally), Yellow Egg, Bradshaw, Coe's Golden Drop, Columbia, Tragedy, and many others as well as the very popular Japanese varieties, such as Kelsey, Burbank, Mikado, Satsuma, etc., are largely grown for shipment to distant markets, many finding their way to New York, Boston and other great cities in the far East.

The varieties known as prunes, such as French or d'Agen, Robe de Sargent, Silver and Golden are dried in large quantities, and Napa is one of those few highly favored spots where the dried prune is always meaty and sweet, the land being phenomenally rich and moist enough without recourse ever being had to irrigation, which, while it may add to the appearance of the fruit while fresh, detracts from its qualities as a dried or preserved article.

Apricots are grown mostly along the creek banks, or on the "redwood" land of the hillsides. The Royal and Blenheim are mostly planted, and they bear regular crops of excellent fruit. Their demand is very great for canning and drying.

Cherries are, perhaps, the most popular of fresh fruits, and it may be stated, with no fear of contradiction, that nowhere can they be produced in finer quality. The Tartarian, Napoleon Bigarreau, Black Republican, and many others, all flourish here, and are one of the best paying crops.

Nectarines must not be omitted, for they do equally well in Napa, and are really a superb canning or drying fruit.

Nuts are becoming to be more generally planted, for it is found that the soft and paper-shell almonds, as well as English, or more properly Persian, walnuts are an abundant success.

This nearly runs through the list of the most commonly known deciduous fruits, samples of all of which can be seen at the Napa county exhibit in the Northern and Central California building at the Midwinter Fair.

Figs grow anywhere and bear immensely, the Brown Turkey, California and Adriatic being most frequently met with.

Olives are so much of a success that the industry of pickling and making oil from this nutritious berry will, before many years, be a great one in Napa. Whoever eats the Napa ripe olive will want no more of the "hard, indigestible bullets" of import, and whose once dresses his salad and fries his eggs in the pure, unadulterated oil will use it and no other.

The olive thrives and bears well anywhere in Napa. For the best quality of oil, however, a hillside location is best, with more of mineral and less of humus in the soil. For pickling olives the richer valley lands are as good, and better, in that the fruit is larger and the tree more vigorous. The Picholine, Mission, Manzanillo and Nevadillo are used by most planters, although the Pendulina, Rubra, Regalis, Macrocarpa, and others, as they become known, will be better appreciated.

Oranges and lemons, while not as yet largely planted in Napa for commercial purposes, grow and bear well most anywhere in Napa, and are rarely more injured by frosts than in the most favored regions of southern California. Indeed, they are less injured than where the summers are hotter, for the rind is generally thicker, which prevents injury to the fruit during the unusual frost in the winter.

For those who engage in the culture of small fruits and vegetables, there are exceptional advantages, especially at the lower or southern end of the valley, at tide water, where easy access is had to the boats between Napa and San Francisco.

Grapes have not been touched upon, as in California they are generally classed by themselves under the caption of

"Viticulture." Nevertheless must they have passing mention, as all varieties are so peculiar a success in Napa.

Such grapes as Flame Tokay, Emperor, Muscat, Verdal, Cornichon, etc., are grown for shipping in a fresh state.

The seedless grapes, as the Sultana and Thompson's, for drying (and, oh, so much nicer than the dirty, imported "currants" of the grocer!). We do not, however, claim to produce raisins in Napa, although as fine Muscat grapes grow here as anywhere. To make a good raisin one must go to a very hot climate—thermometer 100 or 110 degrees in the shade. Napa cannot accommodate the raisin-grower.

Perhaps I may be pardoned if I mention, as showing that I know something whereof I preach, that at my home, Sausal Fruit Farm, 4½ miles north of the city of Napa, and about 55 miles from San Francisco, I have growing all of the fruits named in this sketch, and very many others. The orchard of 75 acres is largely of peaches, plums and prunes, but all other fruits are grown in smaller quantities, among them 25 varieties of oranges and lemons, many in bearing. Japanese persimmons, guavas, pomegranates, with an almost endless variety of trees and shrubs, native and foreign, which speak for themselves as to what can be done in that favored of all spots, Napa valley.

Practically, and from a commercial standpoint, to all who care to look carefully into the facts here presented, Napa offers inducements which, perhaps, are second to none.

Climate as near perfect as possible, and therefore it goes without saying, no malaria; soil phenomenally rich; freights low, there being both river and railroad transportation; markets good, by easy access either to San Francisco or to main line to Sacramento and the East, and, locally, there being several flourishing fruit driers, canneries, tanneries, etc.; socially, all that could be asked in the way of churches, schools and first-class society; and add to all this a low tax rate, considering the advantages; price of land very low, because Napa has had no "real estate boom," and values have therefore never become inflated. What more could one ask?"

Oregon's Mammoth Caves.

Captain A. B. Smith went from Josephine county to Portland lately to submit a proposition to the Oregon commissioners of the Midwinter Fair, says the *Oregonian*. The captain is chief owner of a mammoth cave, whose entrance is twelve miles north of the State's boundary line, and which has been explored for a distance of 22 miles, partly underlying California's surface. The end of the cave has not yet been reached. It is a chain of spacious chambers, some of them being 326 feet in diameter, and the ceiling of none of them being less than 50 feet from the floor. Captain Smith wants to have one of these chambers duplicated in plaster of paris and exhibited at the San Francisco fair as one of Oregon's natural wonders, and that is what he came to see the commissioners about. It would require considerable money to defray the cost of arranging the exhibit, but the captain believes that it would more than clear itself if a small fee were to be charged for the privilege of inspecting it. At the World's Fair there was a plaster of paris imitation of a portion of Kentucky's mammoth cave that earned bushels of dollars for its proprietors, and Captain Smith declares that his cave is as far ahead of the Kentucky cavity in all the elements of attractiveness as Kentucky whisky is in front of Chinese gin as an agreeable beverage.

"We have 600 chambers in sight and an incalculable number to find before we reach the end of the cave," said Captain Smith last evening. "The chambers lie in nine different strata—granite, marble, limestone, redstone and others—and almost every one of the natural apartments contains a marvel of some kind aside from its stalactites and stalagmites. In the 'Lord's Supper chamber' there is an almost perfect facsimile in limestone of the famous painting. The 'fairy chamber' is in a stratum of California diamonds. The 'tornado chamber' is visited by a wind storm every 24 hours. In the 'rain chamber' there is a perpetual drizzle, and the 'steam chamber' is constantly filled with steam from an undiscovered source. A coffin resting on stalagmites is the feature of the 'death chamber,' and the 'bridal chamber' is ornamented with a solid stone four-post bedstead. Then there is 'Sullivan's chamber,' so called because of a mighty arm and fist pendant from the ceiling, and others too numerous to mention, much less to describe. A reproduction of any one of these chambers would prove a drawing card at the Midwinter Fair."

Some San Francisco people of a scientific turn are organizing a party to resume exploration of Captain Smith's cave this winter, and Senator Mitchell is endeavoring to get an appropriation from Congress to enable the Smithsonian Institute to take a hand in the game. The railroad point nearest to the cave is Grant's Pass, 70 miles from the entrance, but a surveying party is now laying out a new road from the cave to Jacksonville, for a distance of 26 miles.

THE Southern Pacific is putting electric search lights on its engines up north, and the two Hogg engines running into Ashland, Or., are to be equipped soon. These search lights are very powerful and long-distance peepers into darkness, being able to throw a light for miles.

THE Watsonville beet-sugar factory finished the season's run last Friday afternoon with gratifying results to the company and all concerned. Seven thousand seven hundred and sixty-nine tons of sugar were manufactured.

THERE is every indication that the settlers on railroad grant lands in southern California will be defended in the contest for their property by the United States Government.

PROBABLY the largest silo in the world is located at the mouth of the Pajaro river, near Watsonville. It is 700 feet long, 20 feet wide and 20 feet high.

THE HOME CIRCLE.

That Hat.

I won her "Yes!" I kissed her lips,
I searched her eyes with thoughts elate;
Her deep blue eyes were fraught with doubt,
How could my darling hesitate?
I coaxed the cause of trouble forth—
She murmured, "Is my hat on straight?"

Weeks flew, she was my wedded wife;
The carriage stood beside the gate
To bear us to our dear new home,
My joy was quite imperate.
I whispered low, "My love, my own!"
As forth we fared in bridal state,
With eyelashes all wet with tears
She answered, "Is my hat on straight?"

Weeks flew, she was my wedded wife;
My downfall was precipitate.
I gently broke the news to her,
My angel wife and loving mate,
Our little all was at the dogs
And we should have to emigrate.
She trustfully made answer brave,
With confidence for any fate,
"You'll make another fortune, dear,
But tell me, Is my hat on straight?"

She snatched our baby from its death
Upon an engine's path irate;
She spoke a speech with much applause
Upon the day we celebrate;
She single-handed warned and fired
A serving man intoxicate,
But after every feat supreme,
When I my pride would intimate,
My heroine would always say,
"How nice! But is my hat on straight?"

O woman, dear to God and man!
What ails your graceful little pate?
Why is that sweet, delightful hat
So difficult to navigate?
Knowledge of good and evil you,
Ere you were summoned to vacate,
Snatched at in Eden and secured
With penalties commensurate,
But will you never, never know,
From now to beauty's doom and date,
Past peradventure of a doubt,
Whether you have your hat on straight?

—New York Sun.

Out Here in California.

Out here in California, when winter's on the scene,
And the earth is like a maiden clad in shimmering robes of green;
When the mountains 'way off yonder lift their snowy peaks to God,
While here the dainty flowers raise their faces from the sod;
When the sunbeams kiss the waters till they laugh beneath his rays,
And nature seems a-joining in a matchless hymn of praise;
When there's just enough of frostiness a sense of life to give,
Right here in California it's a comfort just to live.

Out here in California in the January days
The soul of nature seems to sing a jubilee of praise,
And the birds they whistle clearer, and the blossoms are more fair,
And some way joy and comfort seem about us in the air.
It's cold, perhaps, off yonder, but we never feel it here,
For the seasons run together through a summer-haunted year,
And Dame Nature in her bounty leaves us nothing to forgive
Right here in California, where it's comfort just to live.

Out here in California, where the orange turns to gold,
And nature has forgotten all the art of growing cold,
There's not a day throughout the year that flowers do not grow;
There's not a single hour the streams do not unfettered flow;
There's not a briefest moment when the songsters do not sing,
And life's a sort of constant race 'twixt summer and the spring.
Why, just to know the joy of it one might his best years give—
Out here in California, where it's comfort just to live.

Badly Mixed.

RALPH MIDDLETON was in love—hopelessly, irretrievably in love—and he felt sure that his passion was returned. That being the case, and his financial condition warranting him marrying whenever and whomever he pleased, one might expect him to be a very happy man indeed, instead of which he was plunged into the lowest depths of despair.

The trouble was this: Mr. Middleton was in love with two women instead of one, and he positively could not decide which of the two he wanted to marry. He loved them both with all his heart, and he was certain that each of them was only waiting for him to make his declaration in due form to tell him how much she loved him in return.

The first woman at whose shrine he worshipped was Dora Paine, a sprightly little brunette, with charming manners, a beautiful face and unusual intellectual gifts. He

had known her only a year, but they were on terms of the most friendly intimacy.

He was a constant visitor at her father's house and her ready attendant at places of social amusement. He felt that he must become either less or more at once. His manly instincts demanded that he should delay the matter no longer.

But there was Agnes Moulton. During the preceding winter an old friend of his mother had visiting her a young orphan girl by that name.

Agnes was in great sorrow and shunned all gay society. Mrs. Grytan begged him to come often to help her cheer her visitor, and this cheering process had led to his second infatuation. He had corresponded with Agnes ever since she went back to her brother's home, and he was sure from the tone of her letters that she returned his affection.

What was he to do? He puzzled over the relative merits of blonde and brunette, weighed in the balance the numerous virtues of each, tried every possible and impossible plan for finding out one's own mind—all to no purpose. He was too thoroughly ashamed of himself to take any one into his confidence. Mrs. Grytan was his nearest matronly friend, but she stood in too intimate relations with Agnes to be considered for a moment. If it were any other matter he would go to Josephine, but he could never own himself such a fool to her.

He had known Josephine Ferris all his life. Only a year his junior, she seemed quite passe compared to the girl to whom he paid his addresses nowadays.

He was 35 now, and he remembered with what impatience he had waited for the day he attained his majority, that he might lay his fortune at her feet in truly heroic fashion.

She was 20 then, and she laughed at him for a silly boy. Their friendship had remained unimpaired, however, and Josephine had gone on teasing and lecturing him just as she had done since they were babies. In later years their friendship had grown to be a very pleasant one, and Josephine seemed to him like an elder sister.

He went to her in all his perplexities, and she had had no little share in his professional success. But he had never spoken to her of love affairs—indeed, till this present dilemma he had never had any since his boyish devotions to Josephine herself.

So he hid his trouble and brooded over it. He spent evenings at the Paines', vowing to decide before he went home. He came home more deeply in love with Dora than ever, to find a letter from Agnes had still all its old power over him. He was growing thin. Where was this matter to end?

One night at the club he said to a brother member, "Hal, what do you do when you can't decide between two apparently equally good courses of action?"

Toss up. Settle things every time, feeble brain over decisions that won't decide. Here you are, Ralph. Heads or tails?"

"Heads." For Agnes, he said to himself. Hal threw up the coin. He watched the result eagerly.

"Tails!" exclaimed Hal, and tails it was. "Thank you, I'll follow the coin. Good night. Have an engagement."

He started for the Paines', cursing himself all the way for his treatment of Agnes, yet happy beyond measure in the thought that the matter was finally settled. He would write to Agnes to-morrow and tell her of his engagement to Dora, but no one else must know it for the present except Josephine.

No one was at home at the Paine's. Stupid of him to forget that they left town that day to attend a wedding and were not to be home till Thursday. He went around to Josephine's and spent the rest of the evening. She played for him as she only could play, and chatted of books, his work, the theater, all with her matchless charm. Dora must be intimate with Josephine when they were married. He could not give up his friend even for the dearest little wife in the world, he thought.

The next morning came a letter from Agnes, and, joy of joys! she wrote him that she was engaged to be married! "Bless that cent!" he exclaimed ecstatically. "This makes all clear sailing. Dora will be home to-morrow, and I'll be an engaged man before another week. Thursday night is the Beldon ball. I'll settle matters there."

Thursday night came. Dora was bewitchingly attired in a floating mass of pale yellow gauze which made her look like an escaped sunbeam. Toward the close of the evening he managed to get her away from the circle of admirers into the conservatory—that paradise of lovers—where he poured out his passion. What was his astonishment and indignation to meet with a decided refusal!

She was already engaged she assured

him. Her lover was poor, and she was young, and it had been thought best not to announce it at present. He reproached her with unfair conduct to himself, and she replied: "I am sure I never dreamed of your meaning anything by your little attentions to me. Every one thinks you are engaged to Miss Ferris, and Mrs. Grytan told mama months ago that she was sure there was an understanding between you and Agnes Moulton."

Chagrined and furious, Mr. Middleton made his way back to the ballroom. Here he vented his spite in a way most fatal to his best interests. He vowed to himself that he would marry before either of those should do so. Who was his partner for the next dance? Lilly Edgerton. He would propose to her as soon as it was over. She was a nice girl enough, used to be a great belle, had flirted desperately, but what of that? Marry he would, and that at once. He carried out his intention. Miss Edgerton was much astonished, and she may have had a shrewd suspicion of the truth, but she was too clever a woman of the world not to profit by her opportunity, and she accepted him immediately.

He went the next evening to see Josephine before going to place his betrothal ring on Lilly's finger and told her of his engagement. Her face was a study in which sorrow and surprise were blended. "She thinks me an ass, he mutters to himself as he left the house, 'and she thinks about right.'"

Less than a month later the fashionable columns of the daily newspapers chronicled a brilliant wedding in which Mr. Ralph Middleton and Miss Lillian Edgerton were the contracting parties. There was a trip to the Bermudas, a series of receptions in their new home, and all the feting and attention usually shown a newly married pair.

On one of these occasions Mrs. Middleton said to her husband: "Do you see how devoted Fred Carter is to Josephine Ferris? I hope it will make a match."

"Josephine!" he exclaimed in an annoyed tone. "Impossible!" He had come to regard Josephine as his own especial property. Surely his friend was not going to desert him too.

"Why impossible?" demanded Mrs. Middleton sharply. "She is no older than I and much more agreeable than most of those chits of girls."

"She is 32. I thought you were 24." "So I am to the world at large. You don't suppose any woman out of her teens tells the truth about her age, do you?"

Mrs. Middleton had no intention that the intimacy between her husband and Miss Ferris should continue, and she spoke her real sentiments when she said she hoped for the match. It was not made, however, and a month later Miss Ferris left town for an extended trip abroad.

Mr. Middleton, having married in haste, now had time to repent at leisure. He found that his wife was a selfish, worldly woman, with not a little of the shrew in her makeup. She cared nothing for him and for his home, only that she might exhibit its beautiful appointments to the outside world. He missed his old friends, with whom his wife would have nothing to do, and he could not endure the fashionable circle with which she surrounded herself, so he gave his days to the club and sighed sometimes for the bachelor days when he was free to picture an ideal home of domestic felicity. But if Mrs. Middleton did nothing else for her husband, one thing she did with entire thoroughness—she took the conceit out of him. He was a much smaller man in his own estimation than when when he had offered his name and his fortune to Lillian Edgerton. He knew now that he had never loved any one but Josephine Ferris, and he felt himself to have been an egregious fool that he had not tried to win in his mature manhood what she had denied to his callow youth. He did not suspect the truth, though his wife did, that he would have been entirely successful.

To end in the regulation way, Mr. Middleton ought to have found himself a widower at the end of the year with a tiny baby girl dependent upon him for love and care, and Josephine on her return from Europe should have been prevailed upon to be a mother to the little creature, but things do not end in the regulation way in real life.

On the contrary, Mrs. Middleton presented him with a bouncing boy and was soon in the full tide of fashionable life once more, and he scarcely saw Josephine again. She married an American artist whom she had met abroad and removed to a distant city, while Mr. Middleton devoted his life to his profession and to his children and found in them some of the happiness that in a moment of pique he flung away at the Beldon ball.—Lucretia Clark in Albany Journal.

Appearances Don't Govern.

I have jest about concluded,
After figgerin quite a spell,
That appearances don't govern,
And that blood don't allus tell.

Sometimes the shaller plowin
Will raise the biggest crap,
And it ain't the tallest maple
Allus runs the sweetest sap.

It ain't the richest, rankest grass
The cattle likes the best;
'Tain't likely all the eggs we find
Are the hen's that made the nest.

The tallest stalk of corn that grows
In my twenty-acre field
Ain't got a nubbun on it
Nor any sign of yield.

The likeliest apple tree that grows
In my neighbor's orchard lot
Is full of blossoms every spring,
But the fruit is sure to rot.

While the crooked, orn'ry seedlin,
Standin outside by the road,
Comes up smilin every season
With a heapin wagon load.

The largest sheep of all the flock
May grow the coarsest wool;
The finest horse upon the farm
May balk before he'll pull.

The scrubbiest nag upon the track
May win the longest heat,
While the one that has the backin
May be the easiest beat.

The sweetest drink I ever took
I drank from out a gourd;
The deepest water in the creek
Is jest above the ford.

So I've jest about concluded,
After figgerin quite a spell,
That appearances don't govern,
And that blood don't allus tell.

—Will W. Pfrimmer.

An Interesting Story of a Grain of Wheat.

The noises on the inside of the mill are deafening. One who has never been in a flouring mill of the largest size cannot realize what a peculiar lot of noises are made by the machinery. As soon as the wheat enters the machine from the long spout which brings it down from the upper floors it falls between two rollers of iron—"chilled" iron they call it, and very hard iron it is, too. One of these rollers revolves rapidly, the other more slowly, in order that the separation of the coat, or bran, from the kernel may be more easily accomplished. The wheat first passes between rollers separated just enough to allow the coat to be crushed. It is then carried away up to the top of the mill again to a room where the sun vainly tries to shine in through the flour-coated windows far above the city's roofs. It next passes over a wire sieve, which separates the bran from the kernel proper.

This bran, which contains much of the material, again passes down and is ground once more, this process being repeated four times, making five grindings, each one finer than the one preceding it. Each time the fibrous or bran portions are more completely separated, and at last the bran comes out a clear, brownish husk with every particle of flour removed.

The inside part of the kernel has meanwhile been going through with a very interesting process. After the first grinding or breaking, it passes to a big six-sided revolving reel covered with a fine wire netting or sieve. Through this reel the finer portions of the kernel pass, coming out in what is called "middlings," a granulated mass which goes back to the rollers for another crushing. This process is repeated through five reels, all but the first being of silk. The last one has 120 threads to the lineal inch. The flour which comes out of the fifth reel, while white in hue, is yet not of the finest or "patent" grade, but is classed as "baker's" or second-grade flour.

The middlings above referred to are purified by an interesting process. They are passed over a fine wire sieve, through the upper part of which a strong current of air is passed. This holds in suspense the tiny portions of fibrous matter which may have been in the flour, and at last, after this process of middlings-purifying has been successfully carried out, the flour appears a spotless, snowy white—the "patent" flour, as it is called. In the process of grinding in this gradual and repeated way, the germ of the wheat, a tiny particle about the size of a mustard seed, is separated from the white flour. It is what one might call the life part of the wheat. If it were ground up, it would not leave the patent flour so white and powdery, so it is separated in one of the sievings and passes into the darker or lower-grade flour. It contains, however, the best and most nutritious part of the wheat.

The last thing that happens to the pulverized kernel before it is ready for market is the filling of barrels or sacks. Down many stories through a smooth tube comes the

white or "patent" flour. Under the tube is the barrel or sack, as the case may be, and as it begins to fill, a steel augur, just the size of the barrel, bores down into the flour, packing it carefully and solidly beneath the broad blades.

Ventilation.

The healthy atmosphere in a room is one in which the air is changed to the extent of three thousand cubic feet per hour per adult inmate, says the *Contemporary Review*. The air admitted need not be cold; warmed air, so long as it is fresh, is, of course, preferable to cold air in winter, but in some way the air must be brought in if we are to continue in health. There are various ways of doing this. One is by admitting cold air, so that it is directed upward toward the ceiling, where the air of the room is at the highest temperature; the cold stream is then heated in its passage as it falls to the lower level for breathing. But in large rooms, to utilize at its best this current, there should be in the skirting outlets communicating with a heated up-cast flue, which will draw away the heavy air near the floor, in cases where there is heating by hot water coils, the cold air may be brought in at or near the floor level, and passed through the hot water coils—the outlet for ventilated air being in or near the ceiling—to a heated up-cast flue. In larger rooms or buildings for public assemblies, it may be necessary with either of these systems, to use a fan either to propel fresh air into the room or to draw away the vitiated air.

The great desideratum in the admission of fresh air is cut it up into very fine streams, something in the way water is cut up in passing through the fine nose of a watering can. It has been found that air admitted through a tube or orifice of equal sectional area throughout enters as a cold draught; but if the inlet be through a series of small truncated cones, the smaller section outward, the larger inward, with a wire gauze on the inside, the current is so cut up and diffused that the draft is not felt. By analogy a mass of water entering through a narrow canal, drives all before it, and cuts a channel for itself, but the same quantity passing over a large surface of ground irrigates it. Another important point is not to let the passage of the air be too great a velocity; the gentler the flow the better.

Home Dressmaking.

In the present day of paper patterns and simple systems of dressmaking any intelligent woman of moderate means may learn to make her gowns much more elegantly than she can buy them. The average cheap dressmaker who charges from \$6 to \$10 for a dress can not afford to spend so much time upon it as the amateur dressmaker who has little else to do but to make her own dresses. Of course, there are working women all over the country who must depend upon the dressmaker, as the business man must depend upon the tailor, and such women are not likely to have their dresses as well made at the limited price they pay as the woman who makes her dresses at home.

In every family where there are several girls and economy is a matter of moment, one at least should be trained to become an expert dressmaker in order to fit and assist in making the gowns of the family, just as each one of the other girls takes upon herself the burden of some other branch of the household work. There are many simple devices of the expert dressmaker and many good systems which can readily be acquired in a three months' course at a cost of not over \$25 or \$30 for tuition. In England, a number of ladies of rank whose purses are limited have joined these schools for dressmaking, and a great many ladies join them in this country who have no present idea of going into the trade. The dressmaker who has not learned her business is never successful. The gowns which she manufactures have a certain awkwardness of fit and crudeness of finish that mark them as the work of an inexpert. The proper method of basting, cutting and fitting is taught in these schools first, and then the entire making of the gown. It is expected the applicant is already a good plain seamstress, as every woman should be.

THE housewives in Florida have found a new use for oranges. They scrub the floors with them. Go into almost any town in the orange-growing districts and you will see the women using the luscious fruit as our housekeepers use soap. They cut the oranges in halves and rub the flat, exposed pulp on the floor. The acid in the oranges doubtless does the cleaning, but, at any rate, the boards are as white as snow after the application. It is thought that lemons would be better than oranges for this purpose, because of their greater acidity.—Exchange.

DOMESTIC ECONOMY.

The Kitchen.

PIES.—Delicious pies are made by lining a pie dish with paste, covering it with egg as described and baking it then, having ready some prepared fruit, lemon meringue or other suitable filling; put this into a dish, cover the top with very narrow strips of pie-paste laid on in a sort of lattice-work, and bake in a quick oven for five or ten minutes. Cranberries, dried peaches or dried apples, properly stewed and seasoned, make excellent filling for pies of this sort. There is a decided difference of opinion as to the sort of dish to be used, but many of the best cooks prefer tin pieplates to those of china or earthenware. There is an excellent reason for this. Continual baking and heat make the earthenware absorb a certain portion of the grease, and this after a time becomes rancid, and no amount of cleaning, scouring or scraping can remove it. When the next pie is baked the heat throws out enough of this stale flavor to seriously affect the taste of the pie. Many cooks have been accused of using cheap lard or rancid butter, when the entire blame of the objectionable flavor lay in the quarter-of-a-century old plate on which it was baked.—N. Y. Ledger.

VIENNA WAFFLES.—To one pint of boiling water, add three rounding tablespoonfuls of fine white corn meal, mixed previously with a little cold milk. Cook for thirty minutes, being sure it is cooked thoroughly. To this add quarter of a cupful of butter. Mix together one cupful of flour, one teaspoonful of baking powder measured slightly rounding and sifted, and half a teaspoonful of salt, and sift. Add the dry ingredients to the mush, also the beaten yolks of two eggs, quarter of a cupful of milk and lastly, the whites of two eggs beaten stiff. Bake on well-greased hot waffle irons, using butter, clarified drippings or lard for greasing. Pour the mixture, which should be about the consistency of an ordinary griddle cake mixture, toward the center of each compartment and let it run back, being careful not to put in too much. Serve hot, with butter and maple syrup, directly from the waffle iron, having the plates heated. The first one or two will not generally be as satisfactory, as the waffle iron needs to be thoroughly heated through. The waffles, which are delicious, may be made of yellow corn meal, but will not be as delicate. The waffle irons can be purchased for fifty cents and upwards, according to the make.

BURNT ALMOND ICE CREAM.—Blanch and chop one cupful of almonds. Caramelize three-quarters of a cupful of sugar, add the nuts, cool and pound fine. Add to this a cupful of milk, quarter of a cupful of sugar and cook for ten minutes in the double boiler. Cool, add a quart of this cream and one-tablespoonful of vanilla and freeze. To caramelize the sugar, put it in a saucepan (a new one being preferable) and stir constantly over a hot fire until it has all melted, the result being light brown in color, about the consistency and color of maple syrup. No water will be necessary. Peanut or almond candy may be made in this way, by adding peanuts or almonds to the sugar when it has melted and pouring it into pans to cool. Use rock salt in freezing the cream, as it is cheaper and gives just as satisfactory results, using three parts of crushed ice to one of the salt. Better results will be had if the measurements are exact. Snow may also be used in place of the ice, packing it in solidly and giving it rather generous measurement. If it melts too slowly, pour on a little water to hasten the process. The can should not be filled full, room being left at the top for air, this giving lightness to the cream. Turn slowly at first and more rapidly the last few moments.

FAIRY GINGERBREAD.—Cream half a cupful of butter, add gradually one cupful of light brown sugar (the medium grade being the best) and half a cupful of milk, adding the latter almost drop by drop. Mix a teaspoonful of ginger with one and seven-eighths cups bread flour and a quarter of a teaspoonful of soda and add to the first mixture. Spread very thinly on the bottom of a dripping-pan inverted and buttered. Mark in squares and bake in a slow oven about five minutes, watching carefully and turning so as to cook them evenly. In spreading them on the pan, use a long-bladed, broad knife. A cookie sheet may be used for baking then, but is not so convenient in handling. The soda may be used or not as liked. These wafers are very delicate and can be served with ice cream. In order to keep them crisp, the air must be excluded from them; the best way being by the use of paraffine paper.

YOUNG FOLKS' COLUMN.

The Bird's Happy Thought.

When early autumn days drew near,
And with their fruitage brought good cheer,
A merry party full of glee,
In sporting mood or carelessly
Tossed a small chair into a tree,
And there for months it kept its place
Nor could the storms its hold displace.
And much amusement "by the way"
It gave the children at their play.

But in the summer time so fair,
'Twas thought to bring the little chair
From its high perch among the leaves,
And branches, which the summer weaves.

Now listen, children, while I tell;
Within the chair you loved so well,
A little bird with skillful care
Her cunning nest had builded there.

O, how that little artisan
Seized on the thought, matured the plan
To have a home within the seat
Of your old baby chair complete.

And many birds with envy frowned
Because this little bird had found
So snug a place to build her nest,
And rear her brood, so softly pressed.

Now dears, there's nothing more to tell
About the birds that were so "swell,"
But all who saw the nest agreed
That, 'twas a funny sight indeed.

—M. Ellen Smith.

The Twins' Pledge.



HE twins, Essie and Bessie May, were ecstatically happy. Aunt Dorcas, just arrived from Meadow Sweet Farm, did not come visiting her city cousins and nephews

empty-handed.

"Chickens, eggs and butter," said Essie.

"Wild grapes, nuts, my dear white Kitty," piped Bessie.

"My lovely spotted Spotty—the cute, sweet puppy. Oh, let's feed your kitty and my puppy—yes, let's do, let's do," echoed Essie, going into the kitchen.

The tots looked into Norah's pantry. Not a drop of milk could be found.

Kitty gave a frightened "mioouw." Spotty whined.

"Hurry, oh, hurry, Bessie," cried Essie, nodding her brown curly head impatiently.

Bessie ran into the dining-room, returning quickly holding out a bottle of dark crimson liquid.

"That isn't milk."

"No," said Bessie, "it's medicine to make people grow strong; Aunt Dorcas made it for papa."

"We want puppy to grow quick."

"Yes," said Bessie, pouring the dark medicine into the china saucer.

Kitty ran quickly to the plate, thrust into it her pink nose, lapping daintily. She turned from it "moouwing" dismally.

"Puppy will like it better," said Spotty's owner. "Drink, drink," she commanded. Spotty, too, refused to drink.

"You shall drink," cried Bessie, holding poor puppy's nose to the dark liquid.

Mr. May, attracted by the noise, looked into the kitchen. Aunt Dorcas looked astonished.

"We wanted our kitty and puppy to grow fast, Aunt Dorcas. It's the medicine you made for papa. Spotty will not taste it," explained Essie.

"Dearies," said Aunt Dorcas, "I made the currant wine for your papa."

"If it is good for papa, why isn't it good for Spotty?"

"Is it good for you, papa?" inquired Bessie.

"The wine has headaches in it, my dears. You do not want your pets to take that which gives them a headache," said Mamma May, bravely looking directly into Aunt Dorcas' blue eyes. Aunt Dorcas and Mrs. May did not think alike on a number of questions. "Nora will bring you milk for your pets." Nora brought the milk.

The puppy in his haste toddled over pussy, endeavoring to reach the milk first fellow.

"They know milk is good for 'em."

they not wise little creatures? They won't touch the medicine that isn't good for 'em," said Essie, gaily.

"Dee, dee, papa, 'f I was you I wouldn't ever take medicine that gave me a headache," murmured Bessie, winding about the young man's neck two tiny plump arms.

A few hours later the twins gravely announced to Papa and Mamma May with Aunt Dorcas for witness, "they never, never intended to taste headache medicine, and should drink milk a long, long time; that was best for little girls."

"It's a time when people make promises, papa, an' we want to promise something. We truly can't think of a single other thing to promise," said Bessie, gravely.—Kaye M'Kaye.

Humorous.

Easily Flattered.—"I received a magnificent tribute to my skill the other day at the exhibition."

"What was it?"

"You know my picture, 'A Storm at Sea?' Well, a man and his wife were looking at it, and I heard the man say, 'Come on, my dear; that picture makes me sick.'"

Rupert—I think I'll pour some cologne in this medicine bottle.

Mamma—Why?

Rupert—Why, to take the taste out of its mouth.—Harper's Young People.

Dimples (examining her new Christmas doll)—Buddy, how do you s'pose Santa Claus got pieces just like mamma's wrapper to make dolly's dress? Buddy—I don't know, 'less maybe Mrs. Santa Claus buys remnants.—Harper's Young People.

"Good morning, Janet. I am sorry to hear you did not like my preaching on Sunday. What was the reason?" "I had three verra guid reasons, sir. Firstly, ye read ye're sermon; second, ye didna read it well; an', thirdly, it wasna worth readin' at a'!"—Judy.

Little Clara was out with her mother, taking dinner at a neighbor's house, and the hostess, in an attempt to be entertaining, asked her if she liked kittens. The little miss shocked those gathered at the table by looking suspiciously at the chicken pot-pie, and replying, "I does not—dess I'd rather have cake."

Matrimonial Misfits.—We never knew a woman who believed in taking ice-cold baths in the morning and sleeping with the windows open who didn't have a husband who catches cold if he sits near a keyhole.—Atchison Globe.

Postal Clerk—This letter is too heavy, Miss; you want to put another two cent stamp on it.

Miss Innocence—But won't that make it heavier still?—Raymond's Monthly.

Keeping Warm.

It may not be generally known that, when exposed to severe cold, a feeling of warmth is readily created by repeatedly filling the lungs to the utmost extent in the following manner: Throw the shoulders well back, and hold the head well up. Inflate the lungs slowly, the air entering entirely through the nose. When the lungs are completely filled, hold the breath for ten seconds or longer, and then expire it quickly through the mouth. After repeating this exercise while one is chilly, a feeling of warmth will be felt over the entire body, and even in the feet and hands. It is important to practice this exercise many times each day, and especially when in the open air. If the habit ever becomes universal, then consumption and many other diseases will rarely, if ever, be heard of. Not only while practicing the breathing exercise must the clothing be loose over the chest, but beginners will do well to remember, in having their clothes fitted, to allow for the permanent expansion of one, two, and even three inches which will follow.

Highest of all in Leavening Power.—Latest U. S. Gov't Report.

Royal Baking Powder
ABSOLUTELY PURE

PATRONS OF HUSBANDRY.

Random Thoughts.

By A. P. ROACHE, W. M. S. G. of California.

Content, now days, is seldom found,
In those who, by their labor, till the ground.

What is in a name? Everything, either for weal or for woe. What feelings of disgust are engendered by the mention of the names of Tarleton for his cruelty, Arnold for his treachery, Vitellius for his gluttony, and Booth, Guiteau, Prendegast, for their murderous deeds.

What sentiments of admiration and patriotism are at once enkindled by the mention of Washington at Valley Forge, Greene at Eutaw Springs, Taylor at Buena Vista, Scott at Lundy's Lane, Perry on Lake Erie, Sherman at Atlanta, Sheridan at Winchester and Grant at Appomattox.

How many times has it been proven that Americans cheerfully lay down their lives to sustain the motto of the nation, *E Pluribus Unum*.

The National Grange has successfully struggled for 27 years to sustain its motto, *Esto Perpetua*. Instances are not lacking where the mere difference between names meant victory or defeat. Realizing, then, the glory or disgrace of a name, let each subordinate grange select an appropriate motto by which it may become known, and which, if faithfully adhered to, will result in great good. The motto of Watsonville Grange, "No drones in our busy hive," was an inspiration which made it grow as never grange grew before. Select a motto for your grange, patrons; send it in that it may be recorded, not forgetting at the same time to suggest one for our State Grange, to be voted on at the Stockton meeting.

The grange may not be the best order for the merchant, the doctor, the lawyer, the politician or the monopolist of any color, stripe or title, but is the best for the farmer and his family. This is a fact which all tillers of the soil should remember and act upon. If

"A little nonsense now and then
Is relished by the wisest men,"

Why—

A little nonsense laid down by rule
Is often pleasant to a fool.

Education is to an individual exactly and no more than is a frame to a picture; it smoothes the lines, rounds out the contour, promotes the expression, relieves the harshness and enhances the symmetry, but it can add nothing new to the original plan or mental constitution of the man or woman.

Whenever patrons, in the strength of their manhood and mind, write on some common policy for the eradication of the evils of systems which deprive them of a proper remuneration for their time and investments, and then, with a single purpose and unity of thought, labor for what they desire, that thing, if it is just, they will surely attain. But as long as they allow politics to divide them into several hostile camps, lose sight of the fact that what injures a Democratic farmer also injures a Republican farmer alike situated, and that what benefits a Republican farmer likewise benefits a Democratic farmer alike situated, they must continue to serve as the tail of any kite political parties care to fly.

Two Rock, Potter Valley, Stockton, San Antonio, Merced, Yuba City, Grimes, San Jose, Tulare and Bennett Valley Granges have nobly responded to the call of duty for the present year. May we not hope that all others will be as patriotic and courageous?

The salutatory of the new National Grange Lecturer (Bro. Alpha Messer) has the ring of the pure grange metal, and that he has a clear understanding of the difficulties he will have to meet none can doubt. He promises his best efforts in the cause, and he is neither a novice nor a beginner in matters educational.

Tulare Grange.

TO THE EDITOR:—Tulare Grange held its regular stated meeting on Saturday afternoon. Notwithstanding the day was wet and unfavorable, a good attendance was had, including all the newly installed officers. W. M. Premo communicated the new annual password. A committee was appointed to consider and report at next meeting the change and shortening of the ritual proposed by San Jose Grange.

Sections 2 and 3 of Article 9 of the by-laws were repealed. These sections provided for a Mortuary Fund on a regular and strict payment of dues rarely complied with.

Bro. F. S. Chapin made an interesting address on his trip to the World's Fair and New York and on a uniform and advisable method of putting up and marketing California fruit, suggesting that small receipt-

books giving directions for preparing and cooking California fruits be printed and one put in each package.

At the next regular meeting the newly elected officers propose to rehearse the work.

The grange has received from Senator Perkins and Congressman Bowers various vegetable seeds—a variety in each package. Packages, with a copy of Grange Declaration of Purposes to each, were distributed to members and sent out to other farmers to cultivate and report results.

Joint Installation at Haywards.

One of the very notable grange meetings of the season was held at Haywards last week, the occasion being a joint installation by Eden Grange (of Haywards) and Temescal Grange (of Oakland). There was a large attendance and the services of installation were conducted by Mr. Goodenough, lecturer of the State Grange. Excellent addresses were made by the new masters, Mr. A. T. Dewey of Temescal and Mr. Christenson of Eden, and others. Each of the other new officers in turn had something to say, and the meeting was lively and interesting from beginning to end. The principal address was by State Lecturer Goodenough, as follows:

This was not an order of brigadiers. No officers ever fought a battle alone. The rank and file must do the fighting. They would not be found wanting in any effort necessary to success in every department. The interests of our great order are in your keeping. It is no light task. It is not my office to tell you it is an easy matter. Mutually resolve to labor for our order, our country and the good of man. Our declaration of principles is fit to be hung by the side of the Declaration of Independence. Our object is to develop a better and higher manhood and womanhood among ourselves. Archimedes said: "Give me standing place and I will move the world." Goethe said: "Make good your standing place and move the world." Our work is to move our country to a higher plane.

Do we understand our heritage? The past culminates in us. (Here the speaker quoted the poem, "Heir of all the ages, I.") What a heritage it is; the fruits of all the past are in our hands.

Shall we advance to our high position as members of this great order? Every reason to believe we can accomplish our purpose, make our mark, leave the tide at higher flood than we found it.

Over half of our population is upon farms, united by the strong and faithful tie of agriculture. It is their duty to see that whatever stands in the way of human progress shall be removed. It is their duty to inaugurate whatever advances the race. (Here the speaker told the humorous story of the Tipperary courthouse: First, the new courthouse should be built; secondly, the materials in the old courthouse should be used in building the new; thirdly, the old courthouse must not be taken down till the new one is built.) We, however, should take down the old house and use the materials in building better.

The other half of the population cannot exist without us. They should not dominate us, and we should qualify ourselves to act wisely. The prosperity of the country rests on us. We must not hesitate to hurt the feelings once in a while; we must do our duty. All are bound up with us.

Seventy-nine one-hundredths of the freight transported by the railroads comes from the farm. Twenty thousand carloads of fruit went East from California this season. Ought they not to have consideration for the farms? The railroads could not live a month without us. We ought to rise in our power and assert our rights. Our organization forbids partisanship, but we are not forbidden to take up great economic questions. Stand together in a strong pull and a long pull until what is good for all is accomplished.

The prosperity of all depends upon us. When the thirty millions of farmers go into the market and buy, everything jumps with prosperity. When they do not and cannot go into the market and buy, everything languishes. The crops had been poor, and hence there was present stagnation. The farmers were compelled to economize, and could not buy. It made him sick to eat bread at a cent a pound. When we take care of ourselves we take care of all.

The lands of the United States are valued at sixty-five thousand millions of dollars. Where did all this value come from? What was it worth when Columbus discovered America? Not a cent. To count this vast sum, how long do you think it would take? To count \$50,000 a day, a man would be 4000 years old. Labor produced every dol-

lar of it. You cannot point to a dollar that labor did not produce.

One per cent of our population own half of the values. It ought not to be so. Labor created it all. The farmers more than half of it. The object of the grange is to organize this great mass of labor.

He was a member of a number of secret societies, but none was as great as the grange.

1. Its object is to secure prosperity to all. 2. It is a social order. 3. It is a moral organization. 4. It is an educational order. And it is the business of the grange to see that the community at large understands these questions.

Here the speaker told a humorous story of the man who reached the wharf after the boat had shoved off. He made a desperate leap and struck on his head on deck. When he recovered, the boat was a mile or more out, and the fellow looked back and said, "Great Scott, what a jump!"

What a jump we should make if we did our duty.

Here the speaker related the story of the frogs in the milk cans. The one frog gave up the struggle and sank to the bottom. The frog in the next can swam and kicked through the night, and when the farmer came out in the morning he found a live frog sitting on a butter patty. This frog had conquered his environment. There is a grand call for kickers among us. We need to form a large patty of butter under us.

We can be the controlling influence in the country. Shall we work for it?

At the conclusion of this excellent address, of which the above is but a charcoal sketch, others were called on, but the day was well spent, and their remarks were very brief. The grangers bade each other a hearty "good-by" and separated, after one of the pleasantest gatherings in the history of Eden Grange.

From Past Master Steele.

TO THE EDITOR:—It is with reluctance I enter upon the duty assigned by the Worthy Master of the State Grange. I am something like a lawyer I once knew, who said, "If I only had the ability, etc." A severe cold contracted during my last visit to San Francisco makes me feel anything but bright.

Our master seems to have arranged his plan of procedure in the form of a wedge, and sends me ahead. I suppose the small end must enter first, and I will trust to those who are to follow me to crown his plans with success.

My voice in the council is for peace first, last and all the time among ourselves while we encourage an uncompromising contest with ignorance and its long list of evils that so grievously afflict humanity.

The new year is full of promise for a bountiful harvest for the husbandman and an abundance of water for mining. With mutual forbearance and good will, the bad effects of the financial crisis in 1893 will soon pass away and prosperity will be established on a firmer foundation than ever, and the panic may prove to have been a blessing in disguise.

A mutual understanding between capital and labor, in which each recognizes the rights of the other, would do much to restore confidence, the loss of which causes period-

ical panics. Senator Stanford said, "The hope of labor is in co-operation." If the capital invested in the necessary plants for manufactories could be owned by the laborers in them, and the expenses, responsibilities and profits divided equally among them, the difficulties encountered by employers would be better understood and the effect of paying high wages in times of great depression comprehended.

Any man or set of men who quote false statistics, falsify facts or promises to laboring men to secure the success of any party or for personal aggrandizement is unworthy of confidence.

The effort to increase the functions and powers of our Government, and thus reduce the incentive to individual effort, is questionable. There are already far too many government positions with large salaries and insignificant services that increase taxes on industry to a grievous burden.

It is the publicly expressed opinion of our ablest educators that exertion is necessary to human development. Full-grown men and women with strength of body and mind, gained by overcoming obstacles, are more important to the nation and the perpetuity of our form of government than any amount of government pay for incompetents.

After the Government has done all it can, it remains with the virtue, intelligence and energy of the people to restore prosperity to our country.

I. C. STEELE.

From Petaluma.

A. B. Leckenby, the newly appointed correspondent of Petaluma Grange, writes as follows under date of the 15th inst.:

The regular meeting of the grange was held Jan. 13th. Installation of new officers for the ensuing year was the order of the day, conducted by Bro. John Purvine, after which a bountiful feast was enjoyed by many. The afternoon was set apart to listen to an address by E. W. Davis, which was full of suggestions for very serious thought, and it is a pity that so few were there to hear and reflect. Very strong points in it were: That the brotherhood of the order was a move in the right direction, and the brotherhood of man a necessity; that a religion based on the golden rule would be better for us than the many based on isms and theology. The subject of Government ownership of railroads was discussed, and some members urge strongly that it is a necessity. There is a general conviction among us that we must think and work earnestly and promptly for the uplifting of humanity.

American River Grange.

J. D. Cornell, Secretary of American River Grange writes to report the installation meeting which occurred on the 13th inst. After the usual order of business had been gone through with the new officers were installed by P. M. Lauredson, these exercises being followed by a social entertainment, the whole winding up with a fine harvest feast provided by the good sisters. "Our new staff of officers," says the correspondent, "are earnest laborers in the interest of the order and seem determined to use their best endeavors to advance the interests of the order during the coming year."

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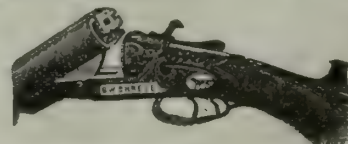
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AGRICULTURAL NOTES.

CALIFORNIA.

Butte.

Near Gridley, says the Oroville Register, is a demonstration that combined harvesters waste grain. A. M. Smith hauled some straw and placed it beneath his fig trees. The straw was from grain that had been threshed by a combined harvester. We passed the orchard this week, and beneath each fig tree the grain was a perfect green mat, showing that hundreds, perhaps thousands, of kernels had been wasted in the amount of straw beneath each tree.

Oroville Register: A fruit-grower who could only get a small price for his fruit this season thinks there are too many fruit trees. The cry of overproduction is an old one, and applies to almost everything. No man can get a fair price for wool, yet are there too many sheep? Wood is low, yet are there too much stove wood? Wheat is the lowest ever known, yet is there an overproduction of grain? Take every commodity and note the price and it will be seen that this is an off year. Now compare fruit with any other thing grown on the farm and see if the producer will not receive a better price this season and make more money from his fruit than from beans, potatoes, wheat, barley, corn, hay or stock of any kind. We don't believe there is or ever will be too much good fruit.

Oroville Register: C. H. Leggett & Son are planting 17 acres to White Adriatic figs. They will set 48 trees to the acre, which will give them 816 trees. They have a large number of bearing fig trees.

Colusa.

Colusa Sun: Occasionally one sees a row of trees around the edge of an orchard said to be planted for a windbreak. These are sometimes eucalyptus, sometimes cypress or other evergreens, and sometimes even black walnut or some other deciduous trees. We have wondered why. Any of these trees cost as much to plant and grow as so many fruit trees, and they take more substance out of the ground; in fact, the next row of trees are generally stunted. Now, if one fancy an evergreen, the olive is a good tree, and the fruit of a row of trees around 20 acres would produce a great deal of oil. They might first be planted ten feet apart, and we would have nearly 400 trees around 20 acres, and when half were cut out there would still be trees enough for two acres of land—quite an olive orchard. If an evergreen is not the fancy, what is better than the fig? It grows fast and makes an excellent windbreak. It will grow with but little cultivation, and could be planted along the road outside the orchard, and thus a portion of the orchard land could be saved, and a dollar a tree claimed from the county under the law. If, therefore, the fancy is to have the orchard belted around with some other kind of tree, plant some fruit tree. There is no profit in anything else.

Fresno.

A method of keeping potatoes from sprouting is given by Prof. W. A. Sanders of Fresno county, as follows: "Sprinkle them with fine dairy salt, just enough so that an atom of the salt will get into every potato eye, and I'll warrant them never to sprout. The salt also seems to exert antiseptic properties in prolonging the time that the potatoes will keep in perfect condition. After you're sure that a minute speck of salt is in each and every eye, you can sack or pile or keep in any convenient way."

Kern.

Down on the old Chester place there can be seen some magnificent tobacco plants, says the Bakersfield Californian. One that stands nearly six feet high has furnished three crops of leaves this season and is already in bloom again. From this plantation Messrs. Dunn and Willow have taken two plants each four feet high and two feet in diameter, which will be shipped to the Midwinter Fair and shown in the Kern county exhibit. They were taken up with enough earth surrounding them to warrant the belief that there will be no check to their growth, but that they will keep on growing all the time.

Several Chinese in Kern county raised 200 tons of yellow corn on 120 acres last fall.

A bee-keeper in Kern county has a swarm that made 300 pounds of honey in one season.

Kern Echo: There is something inconsistent in the statement that in local markets turkeys are worth 15 cents and pork 20 cents per pound, but it is a fact nevertheless. A thoughtful man pondering over this condition of affairs might conclude that there exists an overstock of the stuffed bird of freedom or that pig is considered the rarest of delicacies by Bakersfield's epicures, or that a sudden wave of prosperity had caused an unequal upheaval of prices. Then again he might be convinced that there is money in hogs.

Kings.

Hanford Sentinel: Returns are slowly coming in from our raisin men, but not enough has yet been done to give a comprehensive idea of the results of the season's business. The producers will probably net from three to four cents per pound, although it is reported that some have netted five cents.

Alfalfa hay is selling at \$3.50 per ton in the stack at Grangeville.

Napa.

Napa Register: C. C. Councilman is enlarging his present splendid orchard of 78 acres by the addition of 30 acres of French prunes and Bartlett pears. Sim Buford will enlarge his 5 acres to 35—half Bartlett pears and French prunes. Truman Greenfield is just doubling the size of his orchard by the addition of seven acres of

Bartlett pears. John Smittle, the pioneer orchardist of Berryessa valley, is enlarging his 60-acre orchard by planting 3000 more trees. Frank Phillips is adding eight acres to his present orchard, mostly Bartlett pears. Mrs. Phil Sweitzer is putting out four acres of Bartlett pears and four acres of French prunes.

Placer.

The Newcastle News complains as follows: The Sacramento papers persist in claiming the fruit shipped from Newcastle and other intermediate points as being forwarded from that city, and as being a part of the resources of that section. The fact is that out of a total number of 4372 carloads billed to the East from Sacramento, over 25 per cent belongs to Placer county and was never shipped from Sacramento, but simply billed from that city, it being shipped direct to the East from the several stations in this county. Fifteen per cent of the amount claimed for Sacramento was shipped from the station of Newcastle, or 655 carloads of 23,000 pounds each. All the fruit shipped over the Sierra Nevada mountains from this portion of California is billed from Sacramento, a terminal point, and the shipping stations lose credit for the amount shipped.

The Placer county fruit-growers are taking hold of the co-operative movement in dead earnest and propose to organize a Placer County Fruit Exchange at once. The object of organization is to give the management of disposal of fruits to a Board of Directors who shall combine the best available experience and business abilities, which shall regulate also the methods of packing, inspection and branding, so that a uniform and reliable distinctness shall be obtained.

San Benito.

Hollister Advance: Jas. Laporte has purchased several thousand head of sheep in Bakersfield, for the purpose of stocking that portion of the Quien Sabe rancho leased by him.

San Bernardino.

A letter from Richard Gird to the San Bernardino chamber of commerce, states that the average net profit on sugar beets at Chino is \$60 per acre; that last season the owners of lands made from \$22 to \$105 per acre, averaging \$65 net profit. Mr. Gird says that beets ought to be grown the first year at a cost not exceeding \$25 per acre, work all hired; \$1.50 per acre for seed is the expense to one doing his own work. The Southern Pacific Railroad will carry the beets to Chino this year at 70 cents per ton. Planting is done from February to June. Most of the ground should be plowed twice.

According to the Ontario Record, Hanson & Company are doing some magnificent work in the way of improvement and development work at their place near Chino. It promises to become one of the beauty spots of southern California.

San Diego.

During the month of December, says the Escondido Advocate, Deputy Horticultural Commissioner C. A. McDougal inspected 5509 citrus trees of which 199 were found to be infected with scale, also 8403 deciduous trees of which 225 were infected; 191 olives of which 34 were infected. During November he fumigated 732 trees, and during December 758 trees. Mr. McDougal's report shows that the orchards in this section of the county have less scale than in any other part of the county.

Santa Cruz.

Pajaronian: The long season's run at the beet factory is over, and all but the regular hands have been laid off. About 40 men are at work cleaning up machinery and getting things in shape for the enlargement of the factory, which is to be completed before the opening of the next campaign. When the whistle next blows for beets the Watsonville factory will have the capacity to handle 1000 tons of beets per day, and will be one of the largest beet factories in the world. The factory has just commenced to grow; the beet business is just getting out of long clothes. During the past season the factory handled 65,396 tons of beets, from which 7768 tons of sugar were made. There is yet a large supply of syrup on hand which may be processed next year.

Pajaronian: Pajaro apples continue to roll out of the railroad yards of this valley, in carload lots, bound for all quarters of the country. As the Eastern apple orchards never have two successive years of failure there is but a slim chance for the Eastern market next fall. Without that market the past season the apple-growers and handlers of this State would have learned the full meaning of the failure of a market. Even with the heavy Eastern apple shipments from every apple district of the Pacific States there is but a poor home market for the light shipments to San Francisco and other large cities. The failure of the Eastern crop saved the Pacific coast apple districts this year, but such salvation cannot be looked for next fall.

Solano.

Dixon Tribune: W. R. Ferguson has sold 20,000 nursery trees to various parties on the Wolfskill tract who will plant orchards this spring. . . . R. J. Currey is preparing to plant 40 acres to fruit trees, which, in addition to those planted last season, will give Mr. Currey one of the largest orchards in this section. . . . James Campbell will plant the greater portion of the tract of land he recently purchased on the outskirts of town, to fruit trees of various kinds. . . . Many thousand trees will be planted in the northern part of the county this season, and the number will be added to each succeeding season until in a few years the whole country from the foothills to Putah creek, and from Putah creek to Dixon, will be almost a solid orchard.

Vacaville letter: Vacaville will soon be as

famous for its citrus as for its deciduous fruits. Some fine oranges have been raised in the valley this season, which are equal to any that can be produced in the south, and it is very likely that a number of our fruit-growers will enter into orange culture on a large scale next season.

Vacaville letter: G. W. Thissell has on his place up the valley plum trees in full bloom. To the resident of the bleak and chilly East, who reads this item while crouched over a blazing fire in an endeavor to keep from freezing to death, the statement may be received with doubt. Let him take the next train to California and, before visiting the fair, we will show him this as well as many other sights which will appear marvelous to him.

Sonoma.

Petaluma Courier: The carcass of a giant porker is exhibited at Poehlmann & Co.'s meat market. It weighs over 600 pounds, dressed, and was one of the largest hogs ever seen in this section of the country. To C. A. Bodwell of Lakeville belongs the honor of having raised the porcine monster.

Santa Rosa Democrat: J. J. Slaterry of Blucher valley brought into this office some very extra specimens of Burbank potatoes. Three of the lot, taken from one vine, weighed 11 pounds. One single individual weighed four pounds, and a number of others all of unusual size.

Santa Rosa Democrat: The secretary of the Midwinter Fair committee received from Mr. Hanson of Bennett valley for his collection a beet weighing 75 pounds, grown on the former Aaron Lacque place. It was taken from the ground as it grew, with the soil around the roots, and the leaves are bright and green. We did not know which to admire most, the enormous size of the specimen or the ingenuity of Mr. Hanson in taking it out of the ground and placing it in such beautiful shape for exhibit. It carries with it a sample of the fertile soil in which it grew.

C. Nisson of Two Rock, near Petaluma, has the largest incubator in the world, with a capacity of 2600 eggs. By a limited use of it he brought out, a few days ago, a hatching of about 1000 lively Brown Leghorn chicks, which, after selecting the choicest for "scoring fowls," he expects to market as broilers in from seven to ten weeks.

Petaluma Courier: The silver cup offered by the Massachusetts Buff Leghorn Club as a special prize for the coming poultry show in Petaluma, arrived here Thursday and is on exhibition at the Petaluma Incubator Company's office. It is a very neat little trophy—not much to speak of in intrinsic value, but the glory of winning it in the great competition will be sufficient reward for any of the producers of this fancy new breed, all of whom are on their mettle in preparation for the coming contest.

Tulare.

We extract the following from a letter in the Tulare Register by Major C. P. Berry: It is announced that the industry of canning sardines at Astoria, Oregon, will be commenced this season. Our home-produced olive oil will be used in this enterprise. This is only one of the big ways in which olive oil will be used in the future. Once the masses have begun to use this extremely healthy and nutritious vegetable product the days of oleomargarine and such "stuffs" are numbered. Olives will become as universally liked and used by our people as they are now by the Latin race, and nowhere on this globe will this tree flourish as well and become as productive as it will if planted in our foothill country, the lands of which adapted to this tree are now being used for sheep pasture, and wool worth seven cents per pound. These lands can be bought for three or four dollars per acre and I know of no better opportunity for a father to give his son a start in life than to plant him an olive orchard in Tulare county's foothill country. It will beat "keeping store." Wheat raising, sheep or cattle are not to be compared with it; in fact, an olive orchard is as good a start as a young man wants. It is even good enough for a newspaper man to take hold of.

Lemoore Advance: Chinamen have rented the Dingley fruit ranch for the present year, paying \$5000 cash. The same Chinamen had it rented last year, and claim to have lost \$2000.

Tulare Register: Eggs which go into the San Francisco market, no matter how fresh, if they are all stained up, go in as store eggs and at the lowest figure, but if they are nice and clean, with a good crisp rattle to them when handled, they go in at the top of the market and there is sometimes several cents a dozen between the prices. Now, a little vinegar warmed a trifle and in which the eggs are allowed to remain a few moments, not more than two minutes, perhaps, will take all the stain off, and, at a cost of a fraction of a cent per dozen, add several cents to the selling price. Make a note of this. It costs you nothing and will save you many dollars.

Yolo.

The Winters Fruit Exchange has incorporated with a capital stock of \$25,000, all of which has been taken. The membership is large and enthusiastic. The object of the exchange is to bring the producer as near to the consumer as possible, and dispense with the middleman, who has heretofore shared with the railroad company the greater part of the profits of the business.

Davisville letter in Woodland Democrat: Twenty-six degrees is pretty cold for California, but the mercury recorded that last Friday morning, and we had ice almost half an inch thick. For the old Californian this is almost as bad as 20 degrees below zero back in Iowa. Yet this is regarded as highly favorable in checking the too rapid development of fruit

buds. . . . Davisville's latest achievement is . . . hen with four legs, two in the orthodox position and two on top. Several advantages may be claimed for this arrangement. It is certainly a big help in getting around, as one pair of legs can be rested while the other is in use. Then for the good minister's dinner it is better to have four legs than two. An effort will be made to perpetuate the breed.

Winters letter in Woodland Democrat: So far as the fruit-growers and farmers are concerned, the season has been all that could be desired. The ground is in splendid condition, and the stand of such wheat as is up is very fine. The rainfall has not been half so large as it was last year, but it has come at a most opportune time for farm work and it has fallen so gently that the earth has absorbed it all, so that the soil is more thoroughly saturated than it frequently is after a driving storm in which the rainfall is in excess of the entire rainfall of the season. While business is not specially active, there can be no question that the storm has given it a healthier tone and increased the confidence of all concerned.

The Farmer and the Squirrel.

The ground squirrel is a cunning little beast, with an appetite only equalled by his remarkable propensity to increase his kind. With sagacity and industrious habits, acquired by heredity and necessity, he has managed to build up a reputation that has made him a terror and an outlaw. While the farmer everywhere knows him, and is more or less familiar with his thievish and destructive characteristics, it is probable that comparatively few fully realize the immense amount of loss that he is capable of causing a district or State in the aggregate, say for one year, much less for a series of years.

It is with the view of conveying some approximate notion of the squirrel's great capacity as a destructive agent, while gratifying his inordinate appetite, that the following facts and figures are submitted:

Some practical and observant farmers have said that every squirrel killed was as good as one sack of wheat or its equivalent saved. Whether this be so or not, it is safe and extremely conservative to say that one squirrel or gopher will eat his own weight each month, and probably destroy as much more. Allowing his weight to average one and three-quarters pounds, he will eat and destroy about 40 pounds a year. Now, to give the agricultural districts of California the benefit of 100,000 of these pests actively at work through the greater part of the year, the figures for the aggregate consumption will be found to show up 4,000,000 pounds, a very respectable amount. While 2000 tons of food products lost each year is no small item for producers to consider, this estimate is so modest that those who have given the subject attention will be quite likely to multiply it several times.

These disagreeable facts constantly staring the producers in the face, it is not at all strange that many efforts should have been made to exterminate the evil as far as possible. While most attempts in this direction have proved failures, it is only fair to say that one plan has proved a notable success. This preparation is known far and wide as "Wakelee's Squirrel and Gopher Exterminator." It was the result of scientific and patient study and a full appreciation of the importance of the subject with which it had to deal, and as it has now been on the market for over 15 years, events have proven its complete success and fully justify the immense and yearly increasing sales.

It is estimated that in the 15 years past, more than 10,000 tons of squirrels and gophers have been destroyed by its use alone. Let the curious in figures go into this fact, and by the light of the above hints find out the amount of food it would have required to have made those tons of varmint contented. This preparation is put up in large and small cans, will keep any length of time and is not at all expensive. Directions accompany each can.

Worthless imitations of this valuable preparation are so numerous that the farmer should be extremely careful to obtain the genuine Wakelee Exterminator.

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Miscellaneous.

—English stockholders propose to re-organize the Bear Valley Irrigation Company in San Bernardino county.

—The California Sugar Refinery, employing between 800 and 900 men, which has been idle for six weeks, has again started up.

—For the first time in the history of the San Francisco and San Mateo Electric Railway the operations are showing net earnings sufficient to pay the interest on the bonds. The income, over and above all operating expenses, is reported to be \$5500 a month.

—It is said that the Armour Packing Company is contemplating the establishment of a packing-house in Nogales, Sonora, where can be put up for Mexican consumption the beef of Sonora. The low price of cattle there should make that industry a profitable one.

—The Tubbs Cordage and Rope Works are to resume after a shut-down of nearly four weeks. Fifty-three girls and 100 men are employed in this establishment. A reduction in the pay of the operatives has been announced, and those going to work again will be paid 25 cents each per day less than the old rates.

—The farmers of Lake Washington and Duwamish basin, Wash., are petitioning the King county commissioners to drain their lands. They suffer a good deal from floods, and suggest as the most feasible method of relief that Cedar river be turned into Lake Washington, and the outlet from the latter into Lake Union be deepened and enlarged.

—Receiver Ira Bishop of the Piedmont Cable Company, Oakland, proposes to reduce the operating expenses at least \$12,000 a year by changing the road from Eighth and Washington streets to Mountain View Cemetery from a cable to an electric line. The motive power of the Piedmont branch from the power-house will still be a cable, owing to the heavy grades on that line.

—Professor Burkhalter of Chabot Observatory, received word from Paris to-day that the great Arago medal, with 1000 francs, had been conferred on Professor Barnard of the Lick Observatory. The medal is given by the French Academy of Sciences for his discovery of the fifth satellite of Jupiter. It has only been conferred once before, and then on the illustrious French astronomer Leverrier for the discovery of Neptune.

—It would be difficult to convince the average man that fir is a stronger wood than oak, but such has been proved by actual tests that were made by a fair and impartial committee appointed for that purpose, says a Tacoma paper. The timbers used were each two by four inches and four feet long, both ends solidly braced and the weight applied in the middle of the span. Yellow fir stood a strain of 3062 pounds, common Oregon oak, 2922 pounds; fine-grained yellow fir from near the butt, 3535 pounds; and the best Michigan oak snapped with a strain of only 2428 pounds. The tests were made by the Northern Pacific Railroad Company at Tacoma, Wash.

—The corps of United States Surveyors under John O. Rice, which has been employed resurveying lands in the mountains north of San Bernardino, has been compelled to suspend operations for the present on account of the snow impeding its progress. It is now camped at the foot of the mountains in the orange groves at Highland and does not expect to be able to resume work until April. Mr. Rice says that there are fine forests of fir and pine on 200,000 acres of land included in its survey, and some of the land is good and will raise profitable crops of apples, cherries, and in the lower foothills, olives.

—A new company is to be incorporated which will take the place of the Oakland Contracting Company, a corporation which with J. P. Cochran as manager, has done much street paving during the past five years. The capital stock is set at \$250,000, of which \$100,000 will be paid up. The name will be the Oakland Rock Company. A ten-year lease has been taken of Iron-rock mountain, a deposit of trap rock about three miles beyond the Berkeley line, and a ten-year contract made with the California and Nevada Railroad Company for transportation. A spur track about 3000 feet in length will be built toward the quarry; from the end of this a tramway 3000 feet long will be constructed. Iron-rock mountain is on the old McAvoy ranch.

—A bridge on the North Pacific Coast Railway, across Austin creek, near Cazadero, Sonoma county, gave way last Monday, precipitating Engine No. 6 into the water, and seven lives were lost. The water in Austin creek is 20 feet above its ordinary level and was rushing faster than it had been known to do in twenty-five years. Be-

fore the bridge collapsed the water was up to the rail and speeding like a cataract. The trestle was a new and apparently a strong one; but it seems that the piling on which the span rested was driven into the soft river gravel which was washed away by the flood, thereby leaving no support for the cross-beams. Therefore, when the weight of the engine came upon these latter the entire structure collapsed, precipitating the engine and its entire crew to the bottom.

The San Joaquin Land and Water Company, after six years of litigation among the stockholders has elected a new board of directors with a majority of the men who have been opposing the management, and the great project to bring Stanislaus river water in through a system of canals will be carried forward under a new directory. The new board of directors is composed of Colonel G. B. Sperry, W. C. White, Charles Belding, R. E. Wilhott, J. R. W. Hitchcock of the new forces, and N. S. Harrold, H. W. Cowell and A. M. D. McIntosh of the old crowd. The company owns valuable water rights near Knight's Ferry and has expended \$207,000 in the works, having a dam, several tunnels and a long line of canal nearly completed. The estimated cost of completing the work will be \$400,000, and the canals will carry water to 150,000 acres.

Electric Cooking at Redlands.

Electric cooking is being tried at Redlands, Cal. The *Facts* says: "While passing the office of the Electric Light Company the other day a *Facts* representative was attracted by the appetizing odor of coffee. On investigation he found that the company's officers were demonstrating the efficiency of their new line of electric cooking apparatus. President Sinclair, while in the East, partook of a dinner cooked wholly by electricity, and is more than ever convinced of the efficacy of the electric fluid as a fuel for cooking. As we examined the various utensils, noted their simplicity, safety and convenience, we were convinced that where electric power can be secured at reasonable rates, the old wood and coal stoves for cooking will be supplanted with electrical appliances.

"Another direction in which we learned that electricity is being applied is in laundry machinery. Here there is a great saving of heat and discomfort, while in residences already using electricity for lighting, the additional cost is trifling.

"Assuredly this is the electric age, and if all indications are correct, we are yet only on the threshold of its development."

Uses of Coal Oil.

Coal oil is used for fuel not only under steam boilers on land and afloat and in locomotives, but in furnaces for making crucible steel. A plant of this class was recently described by W. E. Crane of Waterbury, Conn., before the American Society of Mechanical Engineers. Regarding such use of oil with engines the *Iron Age* recently raised an interesting point. In summer oil will flow freely through the supply pipes; in winter extra heat may be required to keep it in a fluid condition. Bursting pipes and other such repairs might easily modify the economy of using that sort of fuel.

Electric War Engine.

A new engine of war has been invented by M. Turpin, the chief point of the invention being the application of electricity. A very light wagon, drawn by two horses, contains two groups of projectiles, and with the aid of four gunners, four charges can be fired off in a quarter of an hour, each throwing 25,000 missiles over a surface of 22,000 square meters. In spite of its extraordinary power, the invention is said to be perfectly in simple design.

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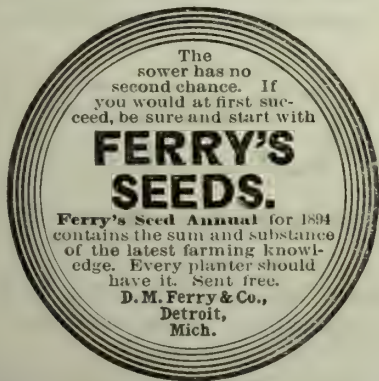
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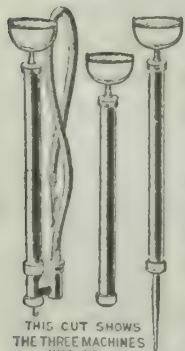
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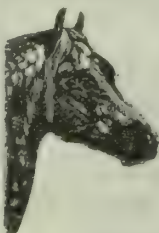
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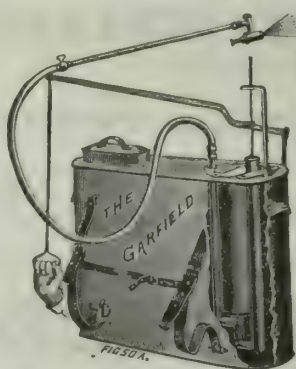
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PHILIP KOEHLER, Manager.

S. H. MARKET REPORT

Market Review.

SAN FRANCISCO, Jan. 24, 1894.

In the local wheat market buying is not liberal, in spite of the fact that prices are down to a very low basis. No. 1 shipping wheat is not quotable over \$1 per cwt., with the prospects not favorable for any immediate improvement. In fact, more than one conservative operator is of the opinion that bottom has not yet been reached. It is to be hoped, however, that such surmises may not prove correct. Probably \$1.01½ could be obtained for something of extra choice character, but it is an extreme rate in the existing condition of affairs. Milling grades are quotable at \$1.02½ to \$1.05 per cwt., though few holders are inclined to sell at the lower quotation.

Barley.

Of ordinary feed qualities there is moderately good supply, but of lots that can be strictly classed as choice and bright, the offerings are certainly not in excess of market requirements. At the same time the demand all around is slow and the volume of business is far from being large. We quote as follows: Feed, 70c to 75c per cwt. for fair to good quality, 76½c to 77½c for choice bright; brewing, 82½c to 90c per cwt.

Dried Fruits.

On another page we give a review of the dried-fruit trade by the manager of a well-known commission merchant who has a character both for discernment and integrity. It is from the standpoint of inside information, and is well worth the attention of fruit men. The market remains in quiet condition. Apples and apricots are scarce, while offerings of choice peaches are rather slim. Prunes are in liberal supply, but neglected. We quote as follows: Apples, 5 @ 5½c per lb for quartered, 5 @ 5½c for sliced, and 8 @ 9c for evaporated; Pears, 4 @ 8c per lb for bleached halves, and 4 @ 9c for quarters; bleached Peaches, 6 @ 8c; sun-dried peaches, 4 @ 5c; Apricots, Moorpark, 11½ @ 13c; do Royals, 10 @ 11c for bleached and 6 @ 7½c for sun-dried; Prunes, 4½c per lb for the four sizes, and 2½ @ 4c for ungraded; Plums, 5 @ 5½c for pitted and 1½ to 2c for unpitted; Figs, 3 to 4c for pressed and 1½ to 2c for unpressed; White Nectarines, 6 to 7c; Red Nectarines, 5 to 6c per lb.

RAISINS—Dealers are anxiously waiting for something to occur to break up the dull monotony of the situation. We quote as follows: London Layers, \$1 to \$1.25; loose Muscatels, in boxes, 75 @ 90c; clusters, \$1.50 to \$1.75; loose Muscatels, in sacks, 2½ to 3c per pound for 3 crown; 2 to 2½c for 2 crown; Dried Grapes, 1 to 1½c per pound.

General Produce Market.

OATS—There is regular movement at steady prices. Supplies are not coming forward with any marked freedom, but stocks on hand are of fair magnitude, and they will likely have to be materially reduced before any positive advance in values can be established. We quote as follows: Milling, \$1.15 @ 1.22½; Surprise, \$1.22½ @ 1.32½; fancy feed, \$1.20 @ 1.22½; good to choice, \$1.12½ @ 1.17½; poor to fair, 92½c @ \$1.07½; Black, 85c @ \$1.22½; Gray, \$1.05 @ 1.15 per cwt.

CORN—Small Yellow has been marked down, as offerings are increasing. No other change. Trade quiet. Quotable at 80 @ 82½c per cwt. for large Yellow, 87½ @ 90c for small Yellow, and 90 @ 92½c for White.

CRACKED CORN—Quotable at \$20.50 @ 21.50 per ton.

CORNMEAL—Millers quote feed at \$20 to \$21 per ton; fine kinds for the table, in large and small packages, 2½ @ 3½c per pound.

OILCAKE MEAL—Quotable at \$37.50 per ton from the mill.

SEEDS—We quote. Mustard, brown, \$2.75 @ 3; Yellow, \$3.25 @ 3.50; Canary, imported, \$4 @ 4.25; do, California, —; Hemp, 3½c per lb; Rape, 1½ @ 2½c; Timothy, 6½c per lb; Alfalfa, 8 @ 9c per lb; Flax, \$2.25 @ 2.50 per cwt.

CHOPPED FEED—Quotable at \$17.50 @ 18.50 per ton.

MIDDLINGS—Quotable at \$18 @ 20 per ton.

MILLSTUFFS—We quote: Rye Flour, 3½c; Rye Meal, 3c; Graham Flour, 3c; Oatmeal, 4½c; Oat Groats, 5c; Cracked Wheat, 3½c; Buckwheat Flour, 5 @ 5½c; Pearl Barley, 4 @ 4½c per lb; Normal Nutrient, \$3 per case of 1 dozen cans; Breakfast Delight, \$3.25 per case of 2 dozen packages.

BRAN—Quotable at \$16 @ 17 per ton.

HAY—For a week past business has been of light order, and activity to any extent is not likely to prevail until the return of sunshine once more. The outlook is considered promising for buyers. Wire-bound hay sells at \$1 per ton less than rope-bound hay. Following are wholesale city prices for rope-bound hay: Wheat, \$10 @ 14; Wheat and Oat, \$10 @ 13; Wild Oat, \$10 @ 12; Alfalfa, \$8 @ 10; Barley, \$9 @ 11; Compressed, \$11 @ 12.50; Stock, \$8 @ 10 per ton.

STRAW—Quotable at 45 @ 55c per bale.

HOPS—Trade is of indifferent character. Quotable at 15 @ 18c per lb.

RYE—Quotable at 95c @ \$1 per cwt.

BUCKWHEAT—Quotable at \$1.20 @ \$1.30 per cwt.

GROUND BARLEY—Quotable at \$16.50 @ 17.50 per ton.

POTATOES—Wharf business has not been very lively of late, owing to the bad weather. Stocks are liberal and prices keep low. We quote: New Potatoes, 2 @ 2½c per lb; Sweets, 75c @ \$1 per cwt; Garnet Chiles, 45 @ 55c; Early Rose, 40 @ 50c; River Burbanks, 35 @ 40c; River Red, 35 @ 40c; Salinas Burbanks, 80 @ 87½c per cwt.

ONIONS—There is a wide range in quotations. Choice product is scarce and commands fancy prices. Quotable at \$1 @ 1.50 per cwt., as to quality.

DRIED PEAS—We quote: Green, \$1.50 @ 1.65; Blackeye, \$1.60 @ 1.65; Niles, \$1.50 @ 1.60 per cwt.

BEANS—We quote: Bayos, \$1.95 @ 2.07½; Butter, \$1.75 @ 1.90 for small and \$2 @ 2.25 for large; Pink, \$1.60 @ 1.75; Red, \$1.75 @

2.10; Lima, \$2.10 @ 2.15; Pea, \$2.25 @ 2.40; Small White, \$2 @ 2.20; Large White, \$2 @ 2.20 per cwt.

VEGETABLES—Receipts are light. Asparagus sells at a wide range. Tomatoes of choice quality bring fancy prices. No string beans received so far this week. There are fair offerings of green peas, but trade is slow. We quote as follows: Asparagus, 12½ @ 25c per lb.; Mushrooms, 8 @ 12½c per lb. for common and 15 @ 30c per lb. for good to choice; Rhubarb, — @ —c per lb.; Green Peas, 6 @ 8c; String Beans, — @ —c per lb.; Marrowfat Squash, \$10 @ 10c per ton; Green Peppers, — @ —c per lb.; Tomatoes, \$1 @ 1.75 per box; Turnips, 75c per cwt; Beets, 75c @ \$1 per sack; Parsnips, \$1.25 per cwt; Carrots, 40 @ 50c; Cabbage, 50 @ 55c; Garlic, 3 @ 4c per lb; Cauliflower, 60 @ 70c per dozen; Dry Peppers, 5 @ 7c per lb; Dry Okra, 15c per lb.

FRESH FRUIT—The market is abundantly stocked with apples, while the demand is slow and confined mostly to choice offerings. Peddlers are buying inferior grades, but not to as great an extent as they would if the weather were not so cold and wet. We quote prices as follows: Apples, 75c @ \$1 per box for good to choice, and 25 @ 65c for common to fair; Choice mountain Apples, \$1.25 @ 1.50c per box; Persimmons, 50 @ 75c per box; Cranberries, Eastern, \$8 @ 8.50 per bbl.

CITRUS FRUIT—The auction sales of oranges are well attended and the catalogues submitted are promptly closed out. About four carloads are sold at each auction. We quote as follows: Fair to choice Navel Oranges, \$1.15 @ 2.00 per box; Seedlings, 75c @ \$1.15; Mandarin Oranges, 65 @ 90c per box; Mexican Limes, 50 @ 70c per box; Lemons, Sicily, \$4 @ 5; California Lemons, \$1 @ 2 for common and \$2.25 @ 3 for good to choice; Bananas, \$1.50 @ 2.50 per bunch; Hawaiian Pineapples, \$2.50 @ 3; Mexican Pineapples, \$3 @ 4 per dozen.

NUTS—Custom is of very moderate proportions. We quote as follows: Chestnuts, 6 @ 8c per lb; Walnuts, 6 @ 7c for hard shell, 8½ @ 9c for soft shell and 8½ @ 9c for paper shell; Chile Walnuts 8 @ 9c; California Almonds, 10 @ 11c for soft shell, 6 @ 7c for hard shell and 11½ @ 12½c for paper shell; Peanuts, 3 @ 4c; Hickory Nuts, 5 @ 6c; Filberts, 10 @ 10½c; Pecan, 8 @ 9c for rough and 11c for polished; Brazil Nuts, 10 @ 11½c; Cocoanuts, \$4 @ 5 per 100.

HONEY—Stocks are in excess of present wants and values have easy tendency in consequence. We quote: Comb, 10½ @ 11½c per lb for bright, and 8 @ 10 for dark to light amber; light amber, extracted, 4½ @ 5c; dark, 4½ @ 4½c; water white, extracted, 5 @ 5½c per lb.

BEESWAX—Quotable at 22 @ 23c per lb.

BUTTER—Receipts are less free and there is slightly firmer tone to prices. Fancy creamery, 26 @ 27½c; fancy dairy, 23 @ 25c; good to choice, 20 @ 22c; common grades, 17 @ 19c per lb; store lots, 11 @ 15c; pickled roll, 17 @ 19c; firkin, 15 @ 18c.

CHEESE—Values fairly steady, under moderate arrivals. We quote as follows: Choice to fancy new, 12 @ 13c; fair to good, 9 @ 11c; Eastern, ordinary to fine, 11 @ 14c per lb.

EGGS—Domestic shipments have been coming in slowly during the past week, on account of the bad condition of country roads. As a consequence, prices have advanced. We quote: California ranch, 28 @ 30c; store lots, 25 @ 27½c; Eastern Eggs, 18 @ 21c per dozen.

POULTRY—The situation does not improve, the market still being heavily stocked with both Eastern and domestic fowl. We quote as follows: Live Turkeys—Gobblers, 10 @ 11c per lb; Hens, 10 @ 11c; dressed Turkeys, 10 @ 14c; Roosters, \$3.50 @ 4 for old and \$3.50 @ 5 for young; Fryers, \$4 @ 4.50; Broilers, \$3 @ 4; Hens, \$4 @ 5; Ducks, \$4.50 @ 5.50; Geese, \$1.50 @ 1.75 per pair; Pigeons, \$1 @ 1.25 per doz. for old and \$1.25 @ 1.50 for young.

GAME—The season is well advanced and buying is falling off. We quote as follows: Quail, 75c @ \$1 per dozen; Canvasbacks, \$3 @ 5; Mallard, \$3 @ 4; Widgeon, \$1 @ 1.25; Teal, \$1.25 to 1.50; Sprig, \$1.50 @ 1.75; Small Ducks, 75c @ \$1; Gray Geese, \$2 @ 2.50; White Geese, 75c @ \$1; Brant, \$1 @ 1.25; English Snipe, \$1.50 @ 2 per doz.; Common Snipe, \$1 per doz.; Honkers, \$3 @ 4; Hare, 75c to \$1.25; Rabbits, \$1 @ 1.50 per doz.

PROVISIONS—No heavy trading at the moment. Shipping orders are expected as soon as the weather clears up. We quote as follows: Eastern hams, 12½ @ 13c per lb; California hams, 12c; Bacon, Eastern, extra light, 14 @ 15c; medium, 11 @ 11½c; do, light, 12c; do, light, clear, 13 @ 13½c; light, medium, boneless, 12½c; Pork, prime mess, \$14 @ 15; do, mess, \$18 @ 19; do, clear, \$21; do, family, \$24 per bbl; Pigs' Feet, \$12.50 per bbl; Beef, mess, bbls, \$7.50 @ 8; do extra mess, bbls, \$8.50 @ 9; do, family, \$9.50 @ 10; extra do, \$11 @ 11.50 per bbl; do, smoked, 10 @ 10½c; Eastern lard, tierces, 8 @ 8½c; do prime steam, 10½c; Eastern pure, 10-lb pails, 11½c; 5-lb pails 11½c; 3-lb, 11½c; California, 10-lb tins, 10½c; do, 5-lb, 11c; 10, kegs, 11½ @ 12c; do, 20-lb buckets, 11c; com-dound, 8c for tierces and 8½c for hf bbls.

WOOL—Market quiet, with the situation against sellers. We quote spring:

California, year's fleece, 7 @ 8c; do 6 to 8 months, 7 @ 9c; do Foothill, 10 @ 11c; do Northern, 12 @ 13c; do extra Humboldt and Mendocino, 11 @ 13c; Nevada, choice and light, 12 @ 14c; do heavy, 8 @ 10c; Oregon, Eastern, choice, 10 @ 12c; do Eastern, poor, 7 @ 9c; do Valley, 12 @ 15c. We quote fall: Free Mountain, 6 @ 8c; Northern defective, 5 @ 7c; Southern and San Joaquin, 3 @ 5c.

HIDES AND SKINS—Quotable as follows:

	Sound.	Culls.
Heavy Steers, 57 lbs up, ½ lb.	4 @ —c	4 @ —c
Medium Steers, 48 to 56 lbs.	3 @ —c	3 @ —c
Light, 42 to 47 lbs.	3 @ 3½c	2½ @ 3-c
Cows, over 50 lbs.	3 @ 3½c	2½ @ —c
Light Cows, 30 to 50 lbs.	3 @ —c	2½ @ —c
Stags.	2½ @ —c	2 @ —c
Kips, 17 to 30 lbs.	4 @ —c	3 @ —c
Veal Skins, 10 to 17 lbs.	5 @ —c	4 @ —c
Calf Skins, 5 to 10 lbs.	7 @ —c	6 @ —c
Dry Hides, usual selection, 7c;		
Calf, 4c; Pelts, Shearling, 10 @ 20c each;		
do, short, 25 @ 35c each;		
do, medium, 40 @ 50c each;		
do, long, 50 @ 75c each;		
Deer Skins, summer, 25c;		
do, good medium, 15c;		
do, winter, 5c per lb;		
Goat Skins, 25 @ 40c apiece for prime to perfect,		
10 @ 20c for damaged, and 5 @ 10c each for Kids.		

TALLOW—We quote: Refined, 5½c; rendered, 4½ @ 4¾c; country Tallow, 4 @ 4¾c; Grease, 3 @ 3½c per lb.

San Francisco Meat Market.

Prices are undisturbed, the receipts keeping fairly up with the demand, which is moderately active. Following are the rates for whole carcasses from slaughterers to dealers:

BEEF—First quality, 5½ @ 6c; second quality, 4½ @ 5c; third quality, 3½ @ 4c per lb.

CALVES—Quotable at 4 @ 5c for large, and 6 @ 7c per lb for small.

MUTTON—Quotable at 6 @ 7c per lb.

LAMB—Quotable at 7 @ 8c per lb.

PORK—Live Hogs, on foot, grain fed, heavy and medium, 4½c; small Hogs, 5c; stock Hogs, 4½ @ 4¾c; dressed Hogs, 7 @ 7½c per lb.

List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR THE WEEK ENDING JAN. 2, 1894.

512,089.—DELINATING MACHINE—Fred Bangerter, S. F.
511,995.—WATER PURIFIER—C. F. Buckley, S. F.
511,983.—BOX FASTENER—W. T. Collier, Los Angeles, Cal.
512,161.—STREET SWEEPER—M. Crawford, Jr., Stockton, Cal.
511,883.—TELEPHONE REGISTER—A. R. Dupont, S. F.
511,940.—PISTOL—M. W. Fairbanks, Booneville, Cal.
511,942.—INSOLE—W. W. Glanville, S. F.
512,021.—WRITING METALLIC SHEETS—J. Gould, Jr., Oakland, Cal.
511,952.—EAR PLUGGER—J. Hubash, S. F.
512,110.—SULKY HARROW—T. J. Hubbell, Santa Cruz, Cal.
511,954.—STEAM ENGINE—B. Jackson, S. F.
511,894.—DISPLAY CASE—John Kahn, Los Angeles, Cal.
511,902.—WICK TRIMMER—J. W. Lawson, San Bernardino, Cal.
511,959.—CAN-OPENER—T. B. Lopley, La Grande, Or.
512,048.—PIANO—H. Miller, Stockton, Cal.
512,258.—HOISTING MACHINE—G. C. Murray, Seattle, Wash.
511,986.—HAIR CLIPPER—O. Olsen, Oakland, Cal.
511,988.—STEAM BOILER—D. Risley, Colfax, Wash.
512,233.—BRAKE—F. M. Speece, S. F.
512,068.—CAR COUPLING—C. B. & T. D. Stewart, Walla Walla, Wash.
511,977.—SEWING MACHINE—Mary Tobener, Gold Hill, Nev.

FOR THE WEEK ENDING JAN. 9, 1894.

512,598.—GATE—J. W. Bennett, Woodfords, Cal.
512,269.—SHIP'S LOG—F. A. Bishop, S. F.
512,600.—SAWING MACHINE—F. D. Butzer, Cosmopolis, Wash.
512,431.—VENEERING STONE—Chatain & Giletti, S. F.
512,543.—MOP HEAD—R. Froberg, S. F.
512,287.—BERT HARVESTER—W. K. Gird, Chino, Cal.
512,440.—VAULT COVER—H. Haustein, S. F.
512,296.—GATE—Hopkins & Simons, Blalock, Or.
512,616.—WINE PRESS—Jas. Kelly, S. F.
512,659.—CARPET TACKER—D. H. McFalls, Ellensburg, Wash.
512,562.—INK FOUNTAIN—O. M. Moore, Hequiam, Wash.
512,447.—TYPE HOLDER—A. E. Newby, San Jose, Cal.
512,624.—WINDOW SASH—Z. Pinard, Portland, Or.
512,682.—MOLD—E. L. Ransome, Oakland, Cal.
512,663.—CONCRETE MIXER—E. L. Ransome, Oakland, Cal.
512,665.—TABLE—G. R. Russel, San Diego, Cal.
512,489.—LIQUID AGITATOR, ETC.—A. H. & T. A. Schlueter, Oakland, Cal.
512,454.—TELEPHONE TIME INDICATOR—C. Stever, San Jose, Cal.
512,411.—ENGINE GOVERNOR—I. F. Thompson, S. F.

NOTE.—Copies of U. S. and Foreign patents furnished by Dewey & Co. in the shortest time possible (by mail for telegraphic order). American and Foreign patents obtained, and general patent business for Pacific Coast Inventors transacted with perfect security, at reasonable rates, and in the shortest possible time.

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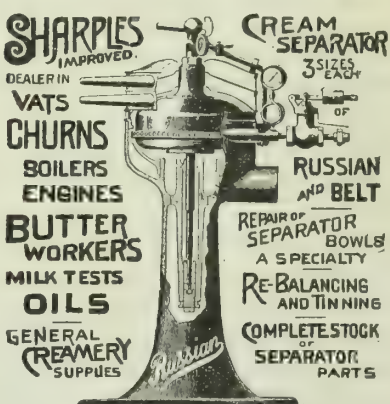


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Brickwork in the Tropics.

Bricks, when stones cannot be obtained, must of necessity be used for certain descriptions of work in the tropics, says the *Architect*. Great caution should be exercised in their selection, as it is found that all bricks made near the seaboard with brackish water are exceedingly susceptible to the weather, and molder rapidly away when exposed. It is, therefore, advisable to make them at some distance from the coast, with fresh water, and, above all, to have them well and thoroughly burned, which, in these climates, where fuel is generally most expensive, is most difficult to insure. Near the seacoast in Brazil it is found necessary to protect all brickwork with plaster, which certainly serves its purpose exceedingly well. In the interior of the country well-burned bricks may stand for a few years, but ultimately it will be necessary to plaster them, or to give them a thick coat of whitewash from time to time. Tar, over a coat of whitewash, has been used with considerable success for the protection of brick buildings and other works of this material, and in localities where it would not be considered unsightly, it is certainly preferable in buildings on the side from which the prevailing winds and rains set in during the wet season, as it not only throws off the moisture on the outside quicker, but tends to keep the interior of the building free from moisture than any other protection. Of two samples of brick taken from the same wall, built in 1790, in Recife, although not in any way protected by plaster or lime whitewash, one appears to be quite perfect, while the other is rapidly decaying, and shows the necessity of outward protection, as a general rule, owing to the all but impossibility of obtaining in large quantities thoroughly well-burnt bricks.

Foundations in Quicksands.

At the International Congress of Engineering held in Chicago, Mr. F. Neukirch, of Bremen, read a paper on making foundations in quicksand. The sand on which the foundation is to rest is converted into solid concrete by blowing into it by air pressure powdered dry hydraulic cement. For this purpose a $1\frac{1}{2}$ -inch pipe is used, which is drawn to a point at its lower end and has three or more three-eighth-inch holes. This pipe is joined at its upper end by a rubber tube to an injector, which is connected to a source of compressed air, and is fed with dry cement.

The sinking of the pipe to the depth required is facilitated by blowing air through it during its descent and setting it in motion. Depth up to 19 feet can thus be quickly reached. This done, the cement is fed in and carried into the sand by the air, which, being forced up through the former, insures a thorough mixture of it and the cement. The tube is then slowly withdrawn, the supply of cement being continued until it reaches the surface. The concrete formed in this way takes several weeks to harden and requires some months to attain its full strength.

The whole area to be treated is divided into a number of small areas of about one square foot each. The tube being sunk successfully and operated on each of the squares, it is found that the mixture of the sand and cement produced occupies less space than the sand alone did before the operation. It has been used successfully in cofferdam work, also in sewer work, where it had to be laid in quicksand, it having proved highly successful in each case.

New Sounding Device.

An instrument has been invented for sounding the depths of the sea without using a lead line, says the *Chicago Journal of Commerce*. A sinker is dropped containing a cartridge, which explodes on touching the bottom; the report is registered in a microphone apparatus, and the depth recorded by the time at which the explosion occurred.

STATE OF OHIO, CITY OF TOLEDO, Lucas County.

FRANK J. CHENEY makes oath that he is the senior partner of the firm of F. J. CHENEY & CO., doing business in the City of Toledo, County and State aforesaid, and that said firm will pay the sum of ONE HUNDRED DOLLARS for each and every case of Catarrh that cannot be cured by the use of HALL'S CATARRH CURE.

Sworn to before me and subscribed in my presence, this 6th day of December, A. D., 1893.

SEAL. A. W. GLEASON, Notary Public.

Hall's Catarrh Cure is taken internally and acts directly on the blood and mucous surfaces of the system. Send for testimonials, free.

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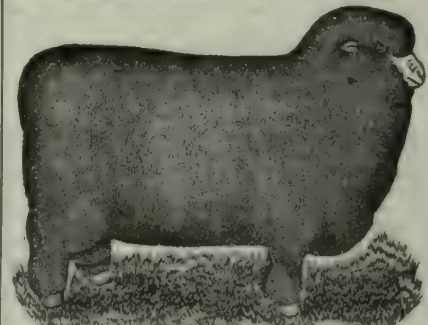
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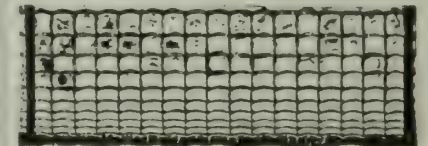


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I have bred from him and his get ever since and have never made an out-cross and never used the same ram but one year on the same flock. My rams at two years old weigh from 100 to 150 lbs., have a strong constitution, without wrinkles, and will shear on an average about 25 lbs., a 13-month's fleece, of long white wool. Rams and Ewes for sale. P. O. Address Steep Point, Sonoma Co., Cal. R. R. Station, Petaluma.



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That is our fence did not go, but staid at home and "sawed wood" as it were. We have no fault to find with awards. They are coming every day from former customers, best judges in the world. Orders for first half of Jan. double the whole month of Jan. 1893. Write for evidence.

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ORANGE CULTURE IN CALIFORNIA.

Now that the interest in the culture of the orange is extending so as to embrace nearly all parts of the State, a book giving the results of experience in parts of the State where the growth of the fruit has been longest pursued will be found of wide usefulness.

"Orange Culture in California" was written by Thos. A. Garey of Los Angeles, after many years of practical experience and observation in the growth of the fruit. It is a well-printed hand-book of 237 pages, and treats of nursery practice, planting of orange orchards, cultivation and irrigation, pruning, estimates of cost of plantations, best varieties, etc.

The book is sent post-paid at the reduced price of 75 cents per copy, in cloth binding. Address DEWEY PUBLISHING CO., Publishers "Pacific Rural Press," 236 Market St., San Francisco.

Photography in Astronomy.

In course of a lecture at Golden Gate hall, San Francisco, Jan. 18th, on "Photographic Revelations in Astronomy," Prof. E. E. Barnard, of the Lick Observatory, said:

"Very few persons have seen any of the results of advanced astronomical photography, save the well-known pictures of the sun and the moon. Indeed, it is the privilege of the few, and only then when they have access to the great telescopes and observatories of the world. I may say that photography has practically revolutionized astronomy, for by its aid and that of the spectroscope we are enabled to see component suns that increase the power of the telescope on Mount Hamilton at least 25,000 times.

"As an illustration of the results of this class of photography, let me tell you that in February, 1892, Dr. Anderson announced that a new star was visible in the constellation of Orion. Professor Pickering of Harvard had made photographs of this region, but up to 1891 there were no signs of the presence of the stranger. However, on December 10, 1891, he discovered this star that had been recorded two months previously by an amateur astronomer, who used the photographic camera in the course of his observations.

"In October of the past year a Mrs. Fleming, who is interested in the observations made by Harvard College, detected a new star that had been affixed on a plate made in Central America. At the present time the rays of the sun have obscured this new star to such an extent that it is not visible, but the Harvard scientific party is still waiting at Arequipa to record its character when it emerges from the field in which it is at present bedimmed.

"Photography is also being applied to the discovery of other heavenly objects, and in the strange zone between Mars and Jupiter there are myriads of stars and kindred heavenly strangers that are constantly furnishing points of absorbing interest to those who study the field with the assistance of the camera.

"Last year, out of 50 discoveries, only one was made by the naked eye, and of the total number 35 were revealed to a single observer."

At this juncture Professor Barnard, with an assistant, used a stereopticon to illustrate the wonders and beauties of his subject, first showing the Lick Observatory in its shroud of snow, and again by moonlight and in a dense fog. He facetiously referred to his next picture as a lamp shade, but upon a closer study it was manifest to the audience that it was a faithful likeness of the sun as it sank on the crest of the ocean. Its eccentric form and luminous reflection gave it an apt resemblance to a transparent shade.

Again, the screen showed the sun with its spots and surrounding mass of incandescent hydrogen. The grouping of bright spots and granulated surface were distinctly defined and to the unscientific gave a bewildering insight to the dazzling surface of the orb of day.

"The heat of the sun is an unknown factor to scientists," said Professor Barnard. "According to their estimates it varies from 3000 degrees to 180,000,000 degrees. One authority says that were the entire coal supply of Pennsylvania placed within its radius, it would be consumed in the fraction of a second, while the glacial masses would be almost instantly turned to steam."

A photograph of the total eclipse of 1893, taken in South America, plainly showed the luminous corona of the great body. Then came the transit of Venus across the sun's surface, in which the planet's insignificant size was graphically displayed.

A magnificent view of the moon's area induced Professor Barnard to say: "On the moon there is no life, no water, no atmosphere. All is a desert. In the south pole region of the moon it will be seen that the craters are inactive and that the volcanoes are silent masses of desolation." In referring to the mountains, valleys, plains and other configurations of the moon, Professor Barnard defined the distances as accurately as he would refer to the area between San Jose and Mt. Hamilton. "One mountain peak near the south pole of the moon is over 40,000 feet high—a greater altitude than that gained by any eminence of the earth," explained the professor.

Referring to the planet Mars and its canals Professor Barnard said that, in spite of repeated claims, there is no accepted theory as to whether intelligent life exists on Mars. As an illustration of the extreme sensitivity of the camera a view was displayed which showed a projectile being discharged from the Zalsky dynamite gun. Its flight when caught by the plate was at the rate of 600 feet a second.

A group of views of the Milky Way were shown and explained in a highly interesting

manner. They were followed by a photograph of the double cluster of Perseus. It was remarked by Professor Barnard that the photographing of the comet of 1882, made at the Cape of Good Hope, was the real incentive for further research in astronomical lines by means of the camera. As illustrating the particular beauty of the skies, a view of the Pleiades, with their nebulous rims, was thrown on the screen.

A New Supply House for Dairymen's Goods.

A. J. Van Drake, so long and favorably known among dairymen as the Pacific coast agent for the Sharpless Cream Separators, has associated himself with Mr. Phillips T. Taylor, under the firm name of Van Drake & Taylor. The new firm has moved from the old place at 203 Fremont St. to the large brick building just erected for its especial use, Nos. 523 and 525 Mission St., near First. In addition to the "Sharpless Russian" and "Belt" Separators, Van Drake & Taylor are carrying in stock a full line of dairymen's supplies, such as tanks, vats, cans, butter-workers, churns, "Babcock" tests, etc. They are also prepared to furnish plans, drawings and estimates for buildings and machinery for dairying purposes. Over the commodious salesroom is their large machine shop, 40 by 70 feet square, fully equipped with power, tools and experienced workmen, where balancing bowls, repairing separators and dairy machinery of all kinds will be promptly attended to. All who are interested in this line of business are invited to correspond for any information wanted, or when visiting the city, to call and look over the stock.

One Man's Faith.

Mr. B. R. Bohart of Cedar Rapids, Iowa, purchased for his farm several years ago a quantity of a particularly good fence—the Page—long advertised in our columns. He was so well pleased that he secured the agency for his county, and has now succeeded A. M. Keeney as agent for the north half of Iowa.

Mr. Bohart has registered a vow to devote himself henceforth alone to the advancement of the Page Fence. He now offers for sale his entire herd of Red Polled Cattle, nearly all of them registered, also a number of well bred horses and other live stock at a great sacrifice, as he has sold his farm, one of the best in the State, in order to embark unincumbered on this heavy business enterprise.

We advise all stock buyers to write Mr. Bohart. Mr. Bohart is not dismayed by the task before him of doubling the record of his predecessor, who sold 350 miles of Page Woven Wire Fence in 1893, and from what we know of the popularity of the fence, we have no doubt he will succeed.

Sensibility of the Eye.

It seems probable that some information as to the degree of perfection of the refractive system of the eye, and as to the ultra-microscopic structure of the cones of the retina, might be derived from a comparison of the smallest intensity of light that can be perceived under different conditions. Thus the light of a star which is just visible has been shown to be equal to that of a candle at a distance of 27,500 feet. Here the source of light may be taken to be a point of absolutely inappreciable dimensions.

On the other hand, Aubert (quoted by Prof. McKendrick) asserts that the minimum surface luminosity that can be seen is one of three-hundredth the brightness of the surface of the moon. The *Optician* estimates that the image of the moon upon the retina forms a circle of about 2025 times the area of one of the central-cone filaments. The total light distributed over this area will be, it is well known, equal to that of a candle at 12 feet. And one three-hundredth of it will be equal to the light of a candle at 208 feet. The light received by each cone may, therefore, be put at one two-thousand-and-twenty-fifth part of this. It is that of a candle at only 9360 feet. For a point source which is not of insensible dimensions this would seem to be the lowest appreciable intensity of light, or it is so if we assume the retinal cones to act independently of one another in perception.

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PLANT MORE PALMS, they give a tropical appearance to any lawn or garden.

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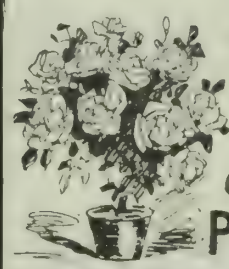
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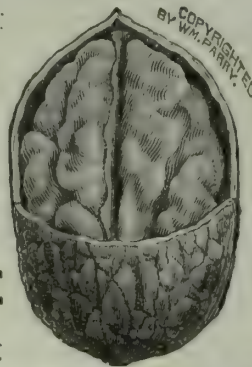
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120 NINTH ST., SAN FRANCISCO, CAL.





Vol. XLVII. No. 5.

SAN FRANCISCO, SATURDAY, FEBRUARY 3, 1894.

TWENTY-FOURTH YEAR.
Office, 220 Market Street.



VIEW OF THE MIDWINTER EXPOSITION GROUNDS AND THE GOLDEN GATE. (From a Photograph)

The Midwinter Fair.

On last Saturday, January 27th, the Midwinter Fair was opened with fitting ceremony and in the presence of a vast concourse of people. Current reports are that there were 72,000 persons in attendance. The great procession, the aerial disturbance by trumpeters and orators, the electric and pyrotechnic etchings on the gloom of night—in fact, all the popular features of the event—were notably successful. The fair, then, is open to the million, to instruct and entertain, to inspire and perspire, to fill the head and empty the purse until the end of June or such other date as the traffic will bear. The successful inauguration of this enterprise is an event of much moment in our industrial history, and reflects much credit upon those who have

brought faith and works to achieve this end. As pertinent to the opening of the fair, we give on this page a real bird's-eye view of the site and its environment, as caught by the camera from an eminence a little distance away on the south. Such a view is more satisfactory than the ideal bird's-eye view of the artist, because one can be sure of the truth of the machine. The view shows that the statements made of the extended and varied architectural features of the fair have not been exaggerated. Of course the point of view gives a close huddling of the structures which does them discredit, because they have really large and well-ornamented interspaces and landscape garden effects, but otherwise it fairly presents the main features of the scene. Beyond the fair grounds are the stretches of sand dunes which lie between its

northern boundary and the shores of the strait known as the Golden Gate. Upon this narrow flow of water floats all the shipping which traverses bay and ocean from the port of San Francisco. Across the Golden Gate lies the shore of Marin county, and the elevations in the distance are those of the Coast Range, with Tamalpais as reigning crest, in the immediate vicinity of San Francisco. The picture has interest aside from its embodiment of the outer features of the fair, because it gives a view across the Golden Gate, while all conventional views are at right angles with this and show in profile the headlands through which, at some remote era, the great interior waters of California forced their way to union with the Pacific ocean. The fair grounds are picturesquely environed and the adjacent country should receive attention from the visitor.

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Our latest forms go to press Wednesday evening.

ANY subscriber sending an inquiry on any subject to the RURAL PRESS, with a postage stamp, will receive a reply, either through the columns of the paper or by personal letter. The answer will be given as promptly as practicable.

ALFRED HOLMAN.....Editor
J. F. HALLORAN.....General Manager
E. J. WICKSON.....Special Contributor

San Francisco, February 3, 1894.

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The Week.

This week brings us into February, the springtime month par excellence in California. The cold rains have fallen; the chance of snow in the valleys has passed. We are well out of the woods so far as low temperatures are concerned. There will fortunately be plenty of water still to fall, but it will be water which will seem to add stature to the plant with every shower, so genial is the temperature. The present outlook is for a stretch of fair days, and these will just meet the views of both farmer and gardener, for it is still early enough in many parts of the State to sow grain and to plant trees, vines, and the whole line of ornamental plants. The garden of the farm should not be delayed, and if well planted now and well cultivated later it will be a great comfort and profit to the household.

Poultry notes are becoming more musical; the soliloquy of the hen is more cheery and her bustling air significant of business. The egg basket is heavier each evening. The new chicken crop should not be too long delayed. March chicks of decent enterprise bring eggs for the November rise; therefore arrange for fall layers: they pay better than London layers.

Orange shipping from the South is well under way, and the new arrangements for marketing show much promise. It looks as though a beginning was really being made in more intelligent and systematic fruit marketing, and such marketing must increase the grower's share in the business. If this be gained it will be perhaps glory enough for a dull time.

SANTA BARBARA does not propose to allow the Midwinter Fair to take the shine from their annual floral festival. The date is announced for April 25th to 28th. Preparations are being made to eclipse all former efforts. The idea is a good one. There will be more strangers in this State this winter than ever before, and many of them can just as well combine the entertainments of south and north.

THE estimate of the orange crop at the south is now placed at about 5000 carloads. Considerably less was estimated earlier in the season.

California Apples for Liverpool.

We gave the details some weeks ago of the successful shipment of California apples in quantity to the Missouri river cities. We had an especially good chance for such work through the failure of the Eastern apple crop, but there has been something of a gradual increase in the Eastern shipment of our best apples for a few years, and some believe we can really contest the ground with the Eastern apple-grower even in years when he has a fair crop. This, however, does not seem so pretentious a claim as that we may possibly compete with the apple shippers of the Eastern States and Canada for the favor of the English markets. Great Britain has come to consume vast quantities of American apples, and the question now seems to be, can supplies be drawn from the extreme West? One grower is disposed to test the point, for there was shipped from San Jose last week the first carload of green apples which ever left the Santa Clara valley for Europe. The shipment was by E. H. Rhodes and contained 800 fifty-pound boxes of Newtown pippins. It was sent to Liverpool as an experiment to test the European market for California apples. Arrangements have been made to rush the car through to New York in nine days via the Santa Fe route, to make connections with the steamer leaving New York February 2d for Liverpool. There seems no reason to doubt that the fruit may arrive in good order if fairly handled in transportation, for one of the strong points about California apples is their keeping quality, which was fully demonstrated as long ago as the New Orleans Exposition. But can the proceeds cover the cost of the long carriage? The result of the experiment will be watched with interest.

Commanding Settlement from Commission Merchants.

There has always been more or less trouble in getting settlements with commission merchants for products sold. Cases have been reported where two years have gone by, and yet the consignor could not get his money and, by its lack, has been seriously inconvenienced in handling following crops. The trouble is really one of the most grievous in fruit marketing, and it should be overcome. One of the chief incentives to self-marketing by growers through their exchanges, is this matter of settlement within decent time after sale. There was a trial in Martinez last week, which bears significantly upon this proposition. The Whitmans of Contra Costa county had made a contract with Cook & Langley, a commission firm, in which the latter agreed to sell in the Eastern States the pears and grapes grown on the ranch of the former, charging for their work 7 per cent commission. They shipped and sold the fruit, realizing therefrom the sum of \$5207.90. Of this amount the merchants had paid all but \$1960, and not being able to get a settlement the producers swore out a warrant charging the firm with embezzlement, and the examination resulted in the holding of Cook to answer before the Superior Court, with bonds fixed at \$2000. The outcome of this case will be eagerly watched for by the fruit men of the State, and may result in bringing of other suits of the same kind. It is a heroic remedy, but sometimes possibly nothing gentler will be effective. The case is, however, still to be tried, and the legal aspect of it is yet to be determined.

Another Promise in Slaughtering.

It is of considerable significance to the stock-growing public of this coast that there is a promise of the revival of the large slaughtering concern on the east side of the bay on a legitimate business basis. It got into deep water through its real estate features, which, indeed, seemed its chief motive. Now we are told that the Rodeo packing and provision plant at Pinole will soon change hands and pass to a corporation of foreign and local capitalists with headquarters in Oakland. The establishment at Rodeo will be enlarged and used for slaughtering and curing purposes only, while all the business, salesrooms and banking of the new concern will be done in Oakland. The new corporation will have a capital stock of \$1,000,000, and the transfer will be made between the 1st and 15th of May next, when work on the enlargement of the plant will be commenced at once. It is announced that the new company will not confine its business to the Pacific coast or the United States, but will seek a trade in South America, Mexico and other foreign ports. It is their intention to handle all their meats in the natural way. There will be no refrigerator meat used except the cured meats, which will be operated under the refrigerator process. We want, certainly, slaughtering and packing concerns on this coast with a liberal and aggressive policy to displace imported meat products and carry our output into all accessible markets on this side of America and beyond the ocean. We hope the reorganized concern at Rodeo will disclose these qualities and ambitions.

WE ALLUDED RECENTLY to the increase of the French wine product of 1893. According to statistics claimed to be official in a recent issue of the *Journal of Agriculture*, it is shown that the decrease of acreage and crop caused by the phylloxera was checked in 1891 by the increase of vines upon resistant American roots and since then a gradual increase in the area planted to vines is to be noted, the area in 1893 being 4,431,242 acres. The year has been extraordinarily favorable to the growth of the grape, and the total wine product of France for 1893 is estimated at 1,322,699,190 gallons, more than double the product of the preceding year, and almost twice as much as the average product of the decade 1883-1892. This vast amount of wine will stand in the way of anticipated growth in the demand for California wines abroad, and if mooted tariff reforms prevail it will push our producers to the wall in their own territory. Certainly these are troublous times for the growers of wine grapes.

RETURNING to the subject of the feeding value of wheat, which is naturally of much local importance, we mention the experiment recently carried on by Prof. E. R. Lake of the experiment station at Pullman, Washington, which, according to the *Spokane Review*, has shown that wheat fed to hogs that bring four cents a pound, live weight, is worth just 65 cents a bushel. The experiment was conducted with ordinary shoats. At its last meeting the board authorized the purchase of some thoroughbred Berkshires, with which it is intended to further continue the experiments. It appears that 65 cents a bushel is far more than wheat can be sold for in eastern Washington; in fact, one calculation is given in which \$350 worth of wheat produced \$715 worth of pork. They also believe at the North that pork at 4 cents per pound at home can be profitably shipped to Eastern markets.

IT IS INTERESTING TO NOTE that some of the Australian colonies are proposing to push their surplus products in the fruit line in the markets of the great islands and populous cities of the south coast of Asia. This territory is much nearer to them than the European and east American markets which they have had in view thus far. It would seem the natural outlet for their products. It is, of course, a question how far they can develop trade among the inhabitants of the Indian ocean and adjacent waters, but they have south temperate products which cannot be produced under the equator, and this should give them some advantage in the proposed commercial conquest. The future alone can tell what there is in it.

THE planters upon the new lands on the south boundary between California and Arizona seem to be confident over their present outlook as a distinctively early fruit region. It is announced that the pumps of the Colorado Irrigation Company have started again. The farmers are happy over the prospects for a prosperous season. Trees, vines and alfalfa are looking well and the oranges are fine. Limes and lemons are in blossom and grapevines are budding. This has the aspect of a very early start in vegetation, and if they do not do too much in spring frosts, our own early regions may have to look to their laurels.

AS tan-bark becomes exhausted in the eastern and central western States, leather manufacturers are casting a wistful eye for future supplies towards the western portions of Oregon and Washington. The hemlock bark of that region is shown by analysis to be the richest in tannin of any in the world. Callam, the northwestern county of Washington, has the largest area and best growth of hemlock timber on the Pacific coast.

THEY are making print paper in Kansas from the fiber of the wild sunflower. The wild sunflower is found in abundance in Kansas, and while generally of a small size, it sometimes attains an immense growth. And it grows in regions where there is but little rainfall—not enough to grow cereals. The paper has a brown color and greatly resembles paper made from straw, although it is much stronger.

WE imported during the fiscal year ending June 30, 1893, foreign grown oranges to the value of \$1,600,000. Yet Florida, Louisiana, Arizona, and California are capable of producing all the oranges of the very best quality that we can use, and even now, in view of stagnant trade these dull times, there is danger of the cry of overproduction in our home markets.

THE Southern Pacific railway has adopted a new rule about carloads, which reads, "24,000 pounds will be the minimum weight upon which carload rates, tariff or special, will apply, except where otherwise specifically provided for. Cars loaded to full space capacity will be considered a carload and subject to a minimum of 24,000 pounds."

From an Independent Standpoint.

The country was electrified on Tuesday of this week by a report that the American flag had been fired upon in Rio Janeiro harbor; that the affront had been resented promptly by an American admiral, and that the offender had been brought to his knees; and unlike most sensational reports, this one turned out to be true. Here is the story in brief: For six months past there has been civil war in Brazil, with the harbor of Rio as the chief seat of military operations. The rebels, with a fleet of ships, have been trying to reduce the city by assault, but thus far have not succeeded. Foreign shipping in the harbor has been subjected to serious embarrassments and danger. Vessels have been prevented from carrying on traffic by the incessant discharge of machine guns from rebel ships and forts in the harbor; and in some instances, when they have run the gauntlet and tied up at the wharves, squads of rebel marines have driven the sailors and stevedores from their work, not by such open violence as to require military interference, but by various forms of intimidation. The object, of course, has been to destroy the commerce of the city and make it suffer as much as possible. Although the rebels have not been recognized by the nations as belligerents, they have assumed the authority of creating a blockade; and until now no foreign commander in the harbor has had the judgment or courage to put a stop to their proceedings.

Several American merchantmen have been lying in the harbor lately wanting to discharge, but fearing to do so because the rebel admiral (Da Gama) declared that he would fire upon them if they attempted it. The shipmasters complained to the American admiral (Benham), who informed Da Gama that American vessels must be allowed to go and come without molestation. The rebel admiral replied that if any ship attempted to land, he would fire upon her, whereupon Benham informed him that the American ships should land and that they would be protected in doing so.

At 10 o'clock on Tuesday, three American ships left their anchorage and headed for the wharves, convoyed by the man-of-war Detroit (Capt. Brownson) which Admiral Benham had detailed for that service. They had not gone far when Admiral da Gama signaled for the advancing fleet to stop. Admiral Benham promptly signaled to the Detroit, "Go ahead," and no sooner did Da Gama see this than, bang! went one of his guns at the Detroit. This shot hit nothing, so Captain Brownson of the Detroit was content to answer it only with a shot across the bows of the rebel man-of-war as a warning that he was in earnest. Da Gama could not take the hint, however, and fired again upon the Detroit. This showed Captain Brownson that further forbearance would be a mistake, so he let fly a small shell from one of his six-inch guns. This shell was intended to strike, and it did not miss the mark. It struck the stern post of the rebel ship with a crash that must have unpleasantly surprised the Brazilians, who are unused to gunners who hit their target at the first discharge.

Without any more ado, and with all the speed possible, Da Gama signaled that he would cease firing, and doubtless he coupled it with a fervent prayer that the Yankee tars would see fit to do the same. It was well he did so, for Captain Brownson was just preparing to give the rebels the benefit of a full broadside from his big guns, but, noting the signal, he mercifully forbore.

This, of course, settles the question as to the rights of American ships in Rio harbor. They will come and go hereafter unmolested; and there is no doubt that the same privilege will be asserted by other foreign ships. In this country and in Europe the course of Admiral Benham is warmly commended. He asserted the rights of his country at the right time and in the right way, and has made a precedent that will add to the universal respect for the American flag and the American naval power. It is, perhaps, not wholly in Christian spirit, but we cannot smother the regret that Da Gama's nerve did not hold out long enough for Brownson to have given him one good broadside.

It has been the hope of Mr. Wilson and other leaders in the tariff reform fight to first put the tariff scheme through, leaving the business of making up the deficiency which it is expected to create in the governmental income to be considered afterward. It was in pursuance of this policy that the "revenue features" of the bill were so long delayed, and that finally, when the delay could no longer be protracted, they were presented in a form separate and distinct from the tariff bill. This policy has failed, however, for it was voted last week in the House to combine the two bills, and they will, therefore, now go before Congress in consolidated form. It is the general opinion that the tariff measure has, in its revenue attachment, a heavy load to carry, for it is certain that many

who are earnest for tariff reform are settled in opposition to the revenue propositions.

As finally agreed upon, the revenue changes include a tax of two cents per pack on playing cards, an increase in the distillery tax, and, by no means least, a tax of two per cent upon corporate dividends and the same upon personal incomes. This tax upon dividends and incomes is, in truth, the main feature of the bill. All incomes in excess of \$4000 a year are to be taxed at the rate of two per cent on that excess—that is, one having an income of \$4100 will be taxed \$2, and a further tax of \$2 on each additional \$100.

It may be predicted with much certainty that the number of net incomes over \$4000 will be quite small, for expenses of business, rent paid, interest, income charges, taxes, cost of exchange, necessary repairs, etc., etc., will have to be deducted in figuring on net taxable income. There will be a great deal of inquisitorial trouble and much expense, with but little return. In the year 1866 the income tax was paid by 460,170 persons. Of these, 190,513 had less than \$1000 income, and 162,513 had \$1000 to \$5000 income. These figures would imply that much less than 100,000 persons then had incomes exceeding the \$4000 now proposed. While population and wealth have much increased since then, the expectation of finding a greatly increased number of incomes above the \$4000 limit is very likely to be disappointed. People then were doing business with a currency worth little more than 50 cents on the dollar. All prices were inflated, and an income of \$10,000 then was worth no more than an income of \$5000 now. Moreover, returns from fixed capital, in the form of interest and rents, is much less, nominally, now than then, and such capitalizations that easily produced six or eight per cent in 1866 yield only three or four per cent now. Here are facts which will surely disappoint the expectations of those who are building hopes of revenue on an income tax under which incomes of \$4000 or less are exempt.

In theory there is no fairer method of taxation than the assessment of incomes, but in practice it is never satisfactory. Everybody objects to the inquisition necessary under such a system of taxation into his personal and private affairs; and persons of easy conscience readily find ways of evading the law. It puts a premium upon misrepresentation and falsehood and is therefore objectionable upon moral considerations. Another point worth attention is that if a man with upward of four thousand a year pays more taxes in proportion than a man with three thousand, there is a class distinction outside the spirit if not outside the letter of our fundamental law. But whatever weight these points may have, it is certain that an income tax will not be satisfactory to the American people. Under a supreme necessity in war times, the people stood it but it was always the subject of complaint and resentment and it was repealed as soon as the stoppage of war charges made its repeal possible. It does not seem to us probable that the measure will pass, but if it should, it will not remain in force after the next general election shall have given the country the chance to pass upon it.

Some time back we noted the rejection by the Senate of Mr. Hornblower of New York, named by President Cleveland for the associate justiceship of the United States Supreme Court, as significant in its demonstration that the Senate could not be depended upon to carry out the executive policy. The rejection was brought about by a combination of Republicans and a coterie of anti-administration Democrats of which Senator Hill of New York is the leading spirit. There were some legitimate objections to Hornblower, but it is beyond question that Hill's opposition to him was based not upon legitimate considerations but, rather, upon the fact that Hornblower is an outspoken opponent of Tammany Hall, and was active in the good work of defeating the corrupt Judge Maynard last election. Flushed with his victory over Hornblower, Senator Hill now proposes to repeat the dose in the case of Judge Peckham, whom the President has named in the place of Hornblower and who is said to be a fine lawyer and a fine man. Hill's objection to Peckham seems to be that he, like Hornblower, was active in the fight against Maynard, and, thereby, in rebellion against Tammany. This being the situation, it is time for the Republican senators to decline further to help Mr. Hill to punish his own and Tammany's political foes. It is, of course, "good politics" to foment the trouble between Hill and the President, and to gain such help as Hill can give against the Wilson bill, but no consideration of politics can justify the Republican senators in aiding Mr. Hill in the low business of revenge upon those New York Democrats who were manly enough last fall to repudiate an infamous nomination made by their own party. Since politics is a business in which human passions are inevitably involved, it is too much to expect that it will be carried on in exact line with ethical standards, but it is not too much to ask even

politicians—especially politicians representing a party making loud claim to moral principle—to stop short of punishing men for doing right. It is for this reason that the Republicans should not combine with Mr. Hill to reject the nomination of Judge Peckham.

The State Fruit Exchange.

B. F. Walton of Sutter County Elected President—Preparing to Get to Work in Earnest.

The board of directors of the State Fruit Exchange met in this city on Tuesday, remaining in session until Wednesday noon. The members of the board, having taken a month to familiarize themselves with the condition of the co-operative movement, were prepared at this meeting to transact business of importance, and did so.

The board organized by the election of the following officers:

President, B. F. Walton of Yuba City.

Vice-president, Philo Hersey of Santa Clara.

Secretary, John Markley of Geyserville.

Treasurer, the Grangers' Bank of California.

The manager, Mr. Edward F. Adams, who at the first meeting of the new board tendered his resignation, will continue as manager for the present, or until permanent arrangements can be made, no action having been taken on his resignation.

An Executive Committee, consisting of President Walton and Directors Timothy Paige and F. N. Woods, both of whom reside in San Francisco, was created, to have supervision of the business between sessions of the Board.

One or two additions of minor importance were made to the by laws as heretofore published in the RURAL PRESS, and they were finally recommended to the stockholders for adoption, which must be within 30 days from January 23rd. All subscribers to stock have had copies of the by-laws and should at once send their assent thereto to the Secretary, if they approve them, as the assent of two-thirds of the stock is required. They are excellent by-laws, giving the Directors full freedom of action in all ways which can be beneficial, while carefully restraining them from incurring debt, or otherwise involving the corporation.

A pamphlet giving full information in regard to the Exchange, with detailed suggestions for forming auxiliary local associations, is now in press and will be issued as soon as possible.

It was agreed that all the directors should hold themselves in readiness to attend meetings in the interest of the Exchange upon the call of any community sufficiently interested to pay their expenses.

It was resolved that the following lines of work should be immediately entered upon and prosecuted with vigor: (1) Active assistance in forming local associations, and in the obtaining of stock subscriptions. (2) Arranging for the collection and dissemination of information. (3) The establishment of uniform methods of grading and packing. (4) The arrangements for inspecting and certifying as to grade and quality of fruit. (5) The introduction of methods whereby growers can obtain advances on dried fruit, and the perfecting arrangements for supplying funds. (6) The purchase and sale to growers at wholesale rates of the principal supplies required in preparing and marketing fruit.

In addition to the above action of general interest, the necessary routine arrangements for transacting the business of the Exchange were perfected.

As will be seen from the above, a wide range of action has been definitely worked out, and those connected with the Exchange will now be able to talk direct business with growers, and it is to be hoped that growers will be equally prepared to talk straight business to them. Co-operation cannot exist on wind. It takes money.

The Exchange was incorporated Jan. 23, 1894.

Are the Hawaiian Islands Worth the Price?

TO THE EDITOR:—It did me good to read Mr. John T. Doyle's letter on the Hawaiian question, in your issue of the 20th, and the editor's careful summing up of the situation, in that of the 27th ult. For some time it has appeared to me that this gift by the Provisional Government of its stolen property to the United States was likely to prove the highest kind of a white elephant to us. In the first place, as Mr. Doyle points out, in private morals, or, if you please, even in common law, the receiver is as bad as the thief; and it was a very doubtful compliment to tender to this great nation territory held by a filibustering title.

Then of what special value or use are the Islands to us? As to trade, we have about as large a share as we are in any event likely to have. As to free access to Hawaiian ports, or any facilities for commerce the Islands can offer, both are already ours. This we had free from anxiety or responsibility. Why, then, to obtain a nominal sovereignty over the Hawaiian kingdom are we to depart from our traditional policy of non-intervention in foreign politics?

The Queen's government had its use in making monarchy ridiculous; in being a burlesque and travesty of the highfaluting airs and graces of the fuss and feathers of the anachronistic etiquette of European courts. It acted as a foil to the dignified simplicity of American Republicanism. Are we now to reverse all this and make Republicanism ridiculous by putting a host of Kanakas and hybrids of every conceivable shape and shade on the same franchise equality with President Cleveland and ex-President Harrison?

Is it for this we are asked to make a move of such "serious import in its relations to the future of the Republic?" Is it for this we are to require "a prodigious development of our naval establishment?" Why, Mr. Editor, the game don't begin to be worth the candle! The taxes the American people will have to pay for this increased navy will eat up every pound of rice and sugar that the Islands ever did or ever will produce. We are called and have called ourselves "a practical people." Let us look at this question in an honest business light. Let us not suppose we can acquire that elusive article called "international prestige" by any action at once so dishonorable and unprofitable. Yours truly,

EDWARD BERWICK.

Pacific Grove.

State Horticultural Society.

A well-attended meeting of the State Horticultural Society took place on January 26th, President Lelong in the chair.

After the usual routine business had been disposed of, E. F. Adams, manager of the California Fruit Exchange, took the floor and spoke at some length of that organization, its present needs and future possibilities. Mr. Adams appealed to his hearers not only to urge their neighbors to take stock in the enterprise, but to take stock in it themselves. "Many persons," said he, "are always anxious to get 'the other fellows' to do their duty, and are so interested in it that they forget all about doing their own in the premises. What the exchange wants now is a vote of confidence and esteem in the shape of good hard dollars, and it will in the near future certainly prove that it is deserved."

At the conclusion of Mr. Adams' remarks a number of the gentlemen present expressed their intention to help along the work which promises to be so helpful to the fruit-growers of the State, to the best interests of their ability, and applied for printed matter to distribute among their friends and acquaintances.

Recipes for Cooking California Fruits.—Mr. A. L. Bancroft proposed the publication of a pamphlet entitled "How to Cook California Fruit," with the idea of giving to our distant customers better knowledge of how to use our products. He would issue an octavo pamphlet, without a cover, on rather thin, inexpensive paper, but of suitable quality—double columns. The typography to be very neat and the presswork very good, and the folding, trimming, etc., to be the best. Each copy should go flat in a separate envelope and from six to twelve in a larger envelope or package, and one package should be put into each sack of dried fruit which is sent out of the State, if practicable. The California State Horticultural Society should prepare the pamphlet. Calls should be made asking the ladies of the State to send in recipes and have their names and addresses attached to them for publication as being responsible for the value of the receipt.

Some remarks of general interest should be made about California fruit, and also remarks about each kind of fruit, telling of its peculiarities, manner of growth, cultivation, preparing for the consumer, etc., and the scope of the fruit interest in California.

Some small advertisements at high prices might perhaps be taken. Perhaps limit the size to one-quarter of a page, but the charge about ordinary page rates. The first season 1000 should be distributed, and the advertising space—if any advertisements at all were admitted—would be very valuable.

The California Fruit Exchange should stand the most of the expense and attend to the distribution of the document.

Upon motion the project was approved and a committee was appointed to undertake the matter.

Comparative Value of Different Varieties of Almonds.—Mr. Bancroft called attention to the fact that some of our almonds which really yield greater percentage of meat over shell are sold higher than others which have more shell and less meat. He submitted the following written statement on the subject:

Comparative value of one pound each of a few leading varieties of almonds based upon the proportion of kernel to shell.

The Teragona is the leading variety, and the one best known throughout the entire United States. It is therefore here taken as a standard and the other varieties are compared with it.

Class.	Variety.	Weight of kernel, ounces.	Weight of shell, ounces.	Relative value, cents.	Percentage of value more or less than the Teragona.
Soft Shell.....	Teragona.....	6.25	9.35	16	0
" " " " " "	Languedoc.....	7 1/2	8 1/2	17 1/2	16 1/2% more
" " " " " "	" " " " " "	8	7	21	40
Ex. thin shell	Ne Plus Ultra.....	10	6	23 1/2	56
Paper Shell.....	Cal. Paper Shell.....	10	6	23 1/2	56
Ex. thin shell	Nonpareil.....	11-13	5-3	27 1/2	82
" " " " " "	" " " " " "	when 11	5	28 1/2	87 1/2
" " " " " "	" " " " " "	when 12	4	30	100
" " " " " "	" " " " " "	when 13	3	30 2 1/2	102 1/2

Mr. Bancroft thought the society ought to establish grades on the basis of the above comparative values. The proposition was discussed at some length, Messrs. Buck and Rowley holding that buyers always made grades, not sellers; but they admitted that such information might bring the matter to the attention of those who made grades. Upon motion the following committee was appointed to investigate still further the comparative value of almonds; to recommend a marketing classification of almonds and way to make the relative value of our almonds known to the purchasers: A. T. Hatch, Joseph C. Shinn and Webster Treat.

More Refrigerator Cars Next Season.—The committee appointed at the October meeting to secure the building of more refrigerator cars reported that they presented the matter to the two companies whose cars are used in this State in shipping green fruit, and submitted their answers thereto:

SACRAMENTO, CAL., Nov. 27, 1893.
Mr. A. Block, Chairman of Committee, Santa Clara, Cal.—
DEAR SIR: Replying to your favor of the 25th with regard to prospect of increasing our equipment for the coming season, would beg to say that we expect to build probably several hundred new cars, which will place us in position to handle 2500 to 3000 carloads of green fruit during the season.
GEO. A. APPEL,
Agent California Fruit Transportation Co.

SACRAMENTO, CAL., Nov. 27, 1893.
A. Block, Esq., Santa Clara, Cal.—DEAR SIR: Mr. Nate R. Salisbury handed me a letter this A. M. from you, wherein you make inquiries as to the prospect of there being an addition made in the refrigerator car equipment for the next season. In answer thereto, will say that I hope to have a considerable increase in the number of cars for the next season. Shall determine the matter at the earliest day possible and will advise you. My present 300 cars will surely continue in the service.
H. C. GOODSELL,
Goodell California Fruit Line.

Respectfully submitted, A. BLOCK, A. T. HATCH, R. C. KELLS, Committee.

Pruning Deciduous Trees.—I. H. Thomas of Visalia, by invitation, gave a brief account of a method of handling deciduous fruit trees in Tulare county, which is being widely experimented with. Mr. Thomas cuts back at planting to about eight or ten inches from the ground; when the shoots of the first summer's growth reach a length of about 14 inches, he pinches off the terminal buds. The after growth of the same summer he allows to run out as far as it will and the following winter cuts it back rather short. After that the tree is allowed to throw out as long shoots as it likes, and no more pruning is given except to thin out shoots; no cutting back or shortening in are practiced. The result is that the tree goes early into fruit, the wood growth is checked, the long, willowy limbs arch outward, somewhat in umbrella form, and are able to sustain their weight of fruit by touching the tops of their limbs upon the ground.

Mr. Thomas Jacob of Visalia was also called upon, and he stated that some such practice as adopted by Mr. Thomas and others seemed well adapted to the conditions in his part of the State. He does not pinch the first summer, but cuts back in two winters and then lets the tree have its own way. The orchards handled on this system are still young—not old enough to demonstrate the value of the method in the long run, but for early and heavy fruiting the method is effective. The future must demonstrate whether trees thus treated will be long-lived and satisfactory during a term of years. The method is followed with prunes especially, although to some extent with peaches also.

G. W. Hinchley, of Winters, who markets fruit very early in the season, was asked about planting to secure early ripening. He thought much depended, of course, upon the situation, but in the best situation, he thought planting in north and south rows gave the sun a better chance to warm the ground on both sides of the trees and thus force the maturity of the fruit. He considered the Clyman the best plum for early shipping. He had succeeded in drying the Tragedy by drying in the shade: in the sun it spoils.

In speaking of prune culture, the new process of pricking the fruit instead of dipping it was spoken of and reported upon quite favorably by some who had seen and tasted the fruit.

The subjects selected for discussion at the next meeting were: "The Cheapest and Best Remedy to Keep Down the Red Spider," by Alexander Crow, chief quarantine officer. "The Comparative Desirability of the New Varieties of Fruits," and the Marketing of California Fruits." Under the last head Rev. A. T. Perkins was particularly requested to speak and to exhibit the model showing the working of his new and successful plan for the preservation of perishable fruits during shipment. The meeting then adjourned.

How the Orange-Growers' Association Will Work.

T. B. H. Chamblin of Riverside, the chief organizer of the growers' associations in the southern counties, gives the following information concerning the methods to be pursued in handling and marketing the crop: All loss resulting from careless packing, grading, etc., will have to be borne by the local association supplying the fruit. Five cents per box and five per cent on net sales will be held to provide against any loss that may occur through inability of purchaser to pay and other contingencies, payment of salaries, working expenses, etc., and at the end of the business season the surplus will be distributed pro rata among those from whom it was withheld. The salaries of Eastern representatives have not yet been fixed, but this matter will have the early attention of the executive committee. He estimated that the expense of placing the fruit on the market and selling it would be at least 15 cents less than growers were compelled to pay heretofore. All sales must be made through the central association. Local boards were not privileged to negotiate sales. The executive has made such arrangements as virtually gave it control of the San Francisco market, the auction houses having entered into an agreement to handle the association fruit under conditions that will obviate danger of glutting or demoralizing that market. Should the movements of certain grades of fruit prove slow in proportion to others, a price will be fixed that will stimulate increased activity. No frozen fruit will knowingly be shipped by the organization. Should such fruit be sent into market, the local organization sending it will have to bear the full loss. He congratulated orange-growers upon the better feeling existing in the fraternity in different localities, and stated that it was largely due to organization. He urged that a strong effort be made to bring all orange-growers into the organization. The only menace to the organization now lies in the fruit on the outside.

Fruit Products at the Midwinter Fair.

At the Midwinter Fair an organization of all the county commissioners has been formed to be called the Associated Club of the California County Commissioners. One work of the club will be to determine how oranges and other fruits are to be judged for awards. It has already been decided that only the exhibits in the official building will be considered for prizes. Displays in the county buildings are not available for competition, although they can be removed to the Horticultural Building during the exposition.

To encourage a large competitive display of the natural products of California space for individual exhibitors has been reserved in the gallery of the Horticultural and Agricultural Building. The charge of \$1.50 a square foot will be remitted and instead a nominal installation fee will be exacted from each exhibitor. Tables will be provided, so that each grower can keep his own fruits, vegetables and grains separate from those of his neighbor. This arrangement is open to all farmers in the State whether they have exhibits now in any county collection or even if they are not yet represented at the exposition.

What of the Future for Sheep?

Geo. McKerrow writes in *Wool and Hide Shipper* as follows: Were I a prophet, or even the son of a prophet, I might give a definite answer to this question, so often put to me this winter at the Farmers' Institutes in this State. But being only a plain farmer, I can only judge of the future by the records of the past. I have been engaged in sheep husbandry for the past 25 years, and during that time I have seen three different times when sheep were as cheap or cheaper than they now are, and in each case have seen a change for the better take place inside of 12 months, and inside of two years have seen the price double and triple. At these times mentioned I have seen common stock sheep of fair quality sold at \$1 or \$2 per head, and inside of two years sheep of the same class have brought from \$3 to \$5 per head. Often have I seen the farmers who sacrificed their stock at the lowest named figures inside of two years buying no better stock at auction for three or four times the prices received for their stock two years previous, showing that altogether too many of our farmers are too easily carried away by every breeze that blows. At this time I find that good grade mutton lambs are bringing remunerative prices in Chicago, even better profits being realized on them than are being secured by the grain farmer or the cattle producer on their products. Yet many a farmer is turning off his flock of ewes, which, in some cases, represent years of careful breeding. This should not be. I have always striven to cull down my flock, and in these times of depression I breed just as carefully and feed as well as in good times, and never yet have I failed to get good paying returns for my product. I can see good reason for sheep always quickly reviving from a depressed condition. First, when a panic strikes the business every farmer seems to be determined to clean out, and away the flock goes, to be met in Chicago by scores of other flocks, brought there by the same causes; mutton goes down, and on account of its cheapness, rather than its quality, adds many to its consumers. This goes on until there is a shortage, when it begins to go up in price about the time that every farmer who disposed of his flock finds out that weeds are getting the start of him, feed is going to waste, and he cannot farm as well without the golden hoof. He becomes a buyer, thus keeping stock from going on to the mutton market, and thus giving it another push upward, all of which soon brings a very healthy condition for this class of stock. I have carefully noted one fact, that the man of good habits and industry, who has followed sheep husbandry for a term of 20 years or more, has a clean, fertile farm and a more pleasant home than those who have followed grain farming or almost any other line of husbandry. Therefore I will make bold to assert that every flock-owner should hold his best mutton sheep, improve them by using the best of sires, feed for the best results, and when it rains porridge in the near future, as it is sure to, he will have his dish right side up to catch his share. At least so it looks to one who has followed the ups and downs of mutton-sheep husbandry for the past 25 years.

Lime, Sulphur and Salt Wash.

The Sutter county horticulturists continue to commend this wash for winter use upon deciduous trees for curl leaf, mildew, etc. The following formula and directions, if properly carried out, will produce an effective solution:

Unslacked lime, 40 pounds.
Sulphur, 20 pounds.
Stock salt, 15 pounds.
Water to make 100 gallons.

Directions.—Place 10 pounds of lime and 20 of sulphur in a boiler with 20 gallons of water, and boil over a brisk fire for not less than one hour and a half, or until the sulphur is thoroughly dissolved. When this takes place, the mixture will be of an amber color. Next place in a cask 30 pounds of unslacked lime, pouring over it enough hot water to thoroughly slack it, and while it is boiling add the 15 pounds of salt. When this is dissolved, add to the lime and sulphur in the boiler and cook for half an hour longer, when the necessary water to make 100 gallons should be added.

Curl leaf and mildew are becoming quite prevalent in parts of the State in unusually wet seasons. The above wash is recommended by the Horticultural Commissioners of Sutter county, and should be applied while the trees are dormant.

Co-operative Convention at Yuba City.

On Saturday next (10th inst.) there will be a fruit-growers' meeting of unusual importance at Yuba City. It has been called by the Sutter County Horticultural Society for the purpose of taking action in the matter of co-operation with the new State Fruit Exchange. The Butte County Horticultural Society and fruit-growers generally of Sutter, Yuba and Butte counties have been asked to participate. Col. Philo Hersey has promised to be present and to tell how co-operation has worked in Santa Clara county. Mr. B. F. Walton, President of the State Exchange, will also be among the speakers. The ladies of Yuba City Grange will provide a lunch, and no pains will be spared to make the occasion delightful as well as instructive. Fruit-growers from everywhere will be welcome. The hour of meeting is 10 A. M.

A Useful Catalogue.

One of the best catalogues of the season comes from the Rio Bonito Nurseries of Alexander & Hammon, Biggs, Butte Co. It contains a straightforward description of the different varieties of citrus and deciduous trees, nut-bearing trees, olives, vines, berries, and field and garden roots; with a careful chapter on soils, planting, transplanting, pruning, etc. It will be sent free of charge to all who apply for it. This is a good time to say that Alexander & Hammon are on the list of reliable California nurseries.

THE DAIRY.

Shorthorns in the Columbian Dairy Test.

TO THE EDITOR:—It may be a little late to now refer to the dairy tests, and the results thereof, at the late Columbian dairy show, yet there are some facts connected with the same that have not been laid before your readers; and now that the reports of the superintendents of the several departments have been published, I propose to give some plain facts in regard to the comparative merits of the Shorthorns as dairy cattle, as set forth in the report of the superintendent of that breed—the Hon. H. H. Hinds.

As a matter of fact, it is well known that of the three breeds in the tests, the Jerseys took the best prizes—swept everything, in fact.

It is no less a fact that the association of Jersey breeders spent something like three or four times the sum of money and time in getting the requisite number of cows for the test as did either of the representatives of the other two breeds.

The Jersey cow, having never been kept or used for any other purpose than the production of butter, gave a chance for selection from the whole of the cows of that breed in the United States—gave such a choice, in fact, that they had 115 available cows located. They had 50 Jersey cows from which to select 25 for the test at Jackson Park some four months before they were wanted.

The superintendent of this department set a very high standard in selecting the cows for the test. It is as follows:

"In selecting cows to be taken to Chicago for the great dairy test, I set a standard as follows: Cows which by tests heretofore made or by oil tests showed at home under most advantageous circumstances a capacity of 21 lbs. of butter per week. * * * The ability to make 21 lbs. per week had to be accompanied by a constitution capable of standing a high pressure in feeding, etc."

In the *Breeders' Gazette* of January 25th last was printed the pedigrees and milk and butter records—either one or both—as taken by private tests, a few of which are given in Mr. Hinds' report as follows:

"In comfortable barns at Jackson Park, contentedly chewing their cuds, are 50 registered Jersey cows contributed to the dairy test at the World's Columbian Exposition. One hundred and fifteen available cows were located." It gives the pedigrees and alleged records of 51 cows. I give here a few samples: "Signal's Lily Flag—day, 4 lbs. 10½ ozs.; week, 27 lbs. 12½ ozs.; month, 118 lbs. 15 ozs.; year, 1047 lbs. ¾ oz. Eurotisama—year, 945 lbs. 9 ozs. Islip Lenox—year 712 lbs. 8 ozs. Little Goldie—week, 34 lbs. 8½ ozs. Daisy Hinman—week, 24 lbs. 10 ozs. Pridalia—week, 26 lbs. 4 ozs. Rita of Andalusia—week, 24 lbs. 1 oz. Signal Queen—week, 21 lbs. ½ oz. Lady Matilda Pogis—week, 21 lbs. 9 ozs. Alteration—week, 24 lbs. ½ oz. Exile's Bessie—week, 23 lbs. 8 ozs. Belle of Oxford—week, 23 lbs. 6 ozs.; year, 600 lbs.," etc. It further adds: "There are 32 cows with seven-day records ranging from 14 lbs. to 34 lbs. 8½ ozs., the average being 19 lbs. ¾ oz. In the preceding list the ten two-year-olds which participate in the October 30-day test for cows under three years on September 1st are not included, but they have been located by the committee, are under preparation for the test, and will be brought out at the proper time." On April 19th the same paper prints four additional pedigrees, as follows: "Brydie's Darling—week, 18 lbs. 8 ozs.; milk, one day, 53 lbs. Dora Bickly—year, 9400 lbs. milk. Ida Marigold—week, 25 lbs. 2½ ozs.; 14 days, 50 lbs. Sayda M.—one day, 3 lbs." I have told my story. I have only to add that I have had a lingering suspicion that the reason why the other breeds who were a party to this compact did not score up for the word was that their managers got choked with the Jersey apple that was carried between the covers of the *Breeders' Gazette* of Jan. 25th last.

If such records as the above ever had any foundation in fact, they are not borne out by the results of the Columbian dairy tests, in which only six of the above-named 16 cows are allowed to take part in the 90-day butter test, and not one of these was the best cow nor yet the second best.

Ida Marigold is the third best cow, with 199¾ lbs. of credited butter for the 90 days, the best cow being Brown Bessie (now dead), with a credit of 216½ lbs. of butter in the same time. The latter, I believe, is the only cow of any breed in the test that made 3 lbs. of butter in one day.

Only four of the six cows have higher butter records than the best Shorthorn, and only five out of the six stand higher than the second, third, fourth and fifth best Shorthorn, while the sixth comes immediately between the fifth and the sixth best Shorthorn cows, the record of which, as well as that of three other Shorthorns, stands higher than that of other three Jersey cows.

Now, one thinks that cows, with such fabulous records for the production of butter as the above-named 16 cows had before coming to the fair, should have been right on top of the list, standing far above the reach of any general-purpose cow, such as the Shorthorn is supposed to be, in the yield of dairy products.

In regard to 30 Shorthorns chosen by Mr. Hinds from which to select 25 cows for the cheese test, also as regards the number of Guernsey cows at the barn for the same purpose, I take the following from his report:

"I had an impression that if I got 30 cows at Jackson Park during April, all of them to produce before May 1st, all considered good cows by their owners, and, so far as my information went, representative Shorthorns, I might select 25 good cows from the lot, throwing out five of the poorest, and save the large expense of getting more additional cows. The undertaking was attended with perplexing results. One of the best cows was killed by the railroads and four others failed to produce. I had just 25 cows in the barn giving milk and had to start in test No. 1, the cheese test, with a stripper giving less than 20 lbs. of milk per day. Now for the results of that test. By the

rules as agreed to and published, and under which every cow tied in the barns May 1st had been entered, the awards were to go to the cow or breed making the product for the least per pound after by-products were credited. But after that date the rules were so changed as to base the awards upon greatest net profit. Under the operation of the rules as printed, our cow Betsey 7th would have won grand sweepstakes. She produced the cheese for less than nothing, as her by-products netted five cents more than the entire cost of her feed. Under the new rules she was second in our herd, Nora being first, and she was tenth in the entire list of 75 cows, Nora being fifth among the great dairy queens we had read so much about on January 25th. Genevieve was thirteenth in rank, the first Guernsey dropping into fourteenth place after three Shorthorns had taken rank, as before stated. From all the logic of the advocate of the special dairy cow, no Shorthorn should have taken rank before the Jerseys and Guernseys were all placed. Why? Because the Guernseys had over 30 cows in their barn at date of starting the test, and they had ample time and cows enough from which to select 25 worthy representatives. So much for the Guernseys. But what shall be said for the Jerseys who had over 50 cows in the pink of condition? They used all the time previous to starting, even to the last day, in testing the celebrated dairy cows we have been reading about, and selected the 25 making the best record to enter this test, without reference to previous record or condition. The fable that was sent out about Signal's Lily Flag and Eurotisama in connection with these dairy tests had no foundation in fact. That they were not so good as the cows selected was the sole reason they were not used. I am prepared to call up important evidence in relation to that fact. I may as well state now once and for all that the Jersey herds in the various Columbian dairy tests were the best specimens of the breed that could be mustered on earth, and the Guernsey herds carried as good specimens as the breed can muster. I state this now, and thus publicly, that you may understand we were pitting such Shorthorns as we had, let them be the best specimens of the breed or otherwise, against scores of the best special dairy cows now in existence; and I may add that several of the best ones are not now in existence, as they are already dead."

In the cheese test there were only 13 cows out of the whole 75 that made over 4 pounds of cheese a day for the 15 days, viz., 10 Jerseys, 2 Shorthorns and 1 Guernsey.

Mr. Hinds also says: "The advocates of the special dairy cow have constantly stated in the public prints that the Jersey was 'the deepest milker, whereas the facts are that in all three of the tests for aged cows, as well as the heifer test, the Shorthorns have set the pace on flow of milk. In each test a Shorthorn cow or cows have led in amount of milk yield."

In the 90-day butter test there were never more than 24 cows milking in the Shorthorn barn. One of the most promising cows, which had been milked for years at the Pennsylvania Reform School, calved on the morning of the 25th. She was in perfect health before calving, but died before noon of the same day. That is why the test had to be carried through with 24 cows.

Other features of the test I will comment upon in a subsequent letter. ROBERT ASHBURNER.
Baden, San Mateo Co., Cal.

TRACK AND FARM.

Oats or Wheat for Horse-Feeding?

Question 1.—Is wheat at 40 cents per bushel to be preferred to oats at 30 cents per bushel for horse-feeding?

Though there is considerable difference in composition between varieties of oats and varieties of wheat, it will, however, suffice for all practical purposes to take the average results obtained from a large number of analyses. These are as follows:

	Wheat.	Oats.
Water	10.16	11.50
Albuminoids	12.15	11.93
Fat	2.16	4.24
Carbo-hydrates (starch)	71.72	59.22
Fiber	1.88	10.14
Ash	1.93	2.97
	100.00	100.00

In the case of the oats, the analysis gives the composition of the kernel plus the hull, since the latter is always consumed by the animal with the former; for the wheat, the figures represent the composition of the kernel only.

The features to be noticed in connection with the analytical data are: In albuminoids, wheat is somewhat the richer of the two; in fat, oats contains about twice as much as wheat; in fiber, oats, owing to the presence of the hull, possesses about six times the amount present in the wheat kernel; in soluble carbo-hydrates (starch, etc.), wheat is about 12 per cent richer; in mineral matter, oats are richer by about one per cent.

There appears to be very little on record with regard to the digestibility of wheat by horses, nor, indeed, can I find published any practical experience on feeding this grain to horses. This is undoubtedly due to the fact that generally wheat is too expensive a grain for feeding purposes, and therefore seldom comes into competition with oats as horse feed.

For a basis of comparison, therefore, it must be answered that these grains are equally digestible by the horse, though for certain physical reasons, as we shall see later, this is probably not quite correct.

Placing the value of albuminoids and fat at two and one-half times that of the starch, we obtain the following:

	Nutritive No.
Wheat	107.49
Oats (with hull)	99.64

Then, if oats weigh 34 pounds per bushel and wheat 60 pounds per bushel, we have, calculating from the above

nutritive numbers, the value of wheat as 57 cents per bushel, assuming that of oats to be 30 cents per bushel.

It is not, however, probable that these figures represent the true and exact value of wheat and oats per bushel for horse feeding. It is universally acknowledged that for working horses, oats, as the grain portion of the food, stand first among the cereals. This may be due to two causes: First, their easy and uniform digestion, principally owing to the loose and mealy character of the ground grain. The presence of the hull favors this mechanical condition. Moreover, the gluten of wheat is of a sticky character compared with that of oats, so that in the stomach of the horse the tendency would be to form a cohesive mass which would not allow the digestive fluids to easily permeate it. Secondly, oats contain, in small quantities, certain stimulating principles not found in wheat. These have a marked influence on the working powers of a horse.

With wheat at the price here quoted, however, I think a trial with partial wheat feeding is advisable. A mixture of equal parts, by weight, of wheat and oats ground together, and mixed with chopped, coarse fodder, such as hay, might be tried. It is always recommended in horse feeding that concentrated food should be first ground and mixed with a certain amount of chopped, coarse fodder. This insures a horse more easy and complete digestion of the concentrated food.

Question 2. Is boiled or chopped wheat the better?

I am of the opinion that the ground food would be much easier and more completely digested than the boiled, especially when mixed, as before stated, with coarse fodder. Under normal conditions it does not appear that boiling, though it may increase the palatability, increases the efficiency of the concentrated feed stuffs when fed to horses.

Question 3.—Would half wheat and half oats, with a little bran added, make a suitable winter feed for weaned foals, or what would you consider better?

From the reasons already stated, and also the fact that the digestion of newly-weaned foals should not be overtaxed, ground oats should be preferable to ground wheat.

The digestibility of bran appears to be about equal to that of the grains. There can, therefore, be no objection to its use, more especially as it is very rich in nitrogenous matter (albuminoids), and by its presence would tend to lighten up other ingredients of the mixture. Hay, of course, should be used to supplement these concentrated foods.

With respect to the latter part of the question, it might be said that milk is strongly recommended as part of a ration for foals. It presents nutritious food in a soluble and easily digestible form. If skim milk is used it may be enriched with a little linseed meal.—Frank T. Shutt, in the *Farmers' Advocate*.

The Trotting Cross on the Hackney.

One of the most ardent American supporters of the Hackney states that he will give some of his favorites a chance to show that they possess speed as well as high action and generally good carriage characteristics, whereon the organ of the breed replies "the sooner some of the Hackneys are put upon their mettle in the manner described the better it will be for them and their fanciers." We are pleased to note the organ's ultimatum, as it shows that its views are practically identical with those of the *Horseman*. We have contended that as a fashionable commodity the Hackney's sphere of usefulness was well defined, but that to endeavor him to the American public a more rapid way of going should be engrafted upon his otherwise excellent individuality. Many years ago the noted Maine stallion, Shepard F. Knapp, was taken to England and set his impress deep upon the Hackney of his day. In the same line we would suggest the improvement of the breed should now be carried on. An importation of Hackney mares has recently been made, the intention of their importer being to cross them with a Morgan stallion and combine, if possible, the excellence of the two breeds. We would offer the suggestion that while many Morgan stallions may possess the qualities which it is desirable, from our point of view, to assimilate in the Hackney, there is in Maine a stallion whose magnificent lifting, stretching action no Hackney breeder ever dreamt of emulating, and it is not without the bounds of possibility that his services could be secured for the good of so great a cause. That stallion is the Northern King. No fair-minded man who has seen Nelson in action will doubt for a moment that he is capable of improving the Hackney breed, and if it be granted that Shepard F. Knapp was of value to the breed in the early days, does it not stand to reason that so immeasurably greater a horse as Nelson will do much more for the American breeders of to-day? The tendency in the Hackney show rings is just now in favor of more size. This, added to the speed and finish which such a sire as Nelson can furnish, would force the Hackney upon public opinion as a useful as well as the most showy horse in existence.—*The Horseman*.

Upon the foregoing statements the *Breeders' Gazette* comments as follows:

We scarcely appreciate the necessity for the introduction of trotting blood into the Hackney in order to produce a "useful" horse. The "hack" or hackney means a useful horse. The Hackney of to-day has shapeliness, courage, endurance and a gait fast enough for ordinary road work. Some of them have speed; they can extend themselves in a manner worthy of a trotting-bred horse; but we do not understand that this is at all necessary or desirable in a Hackney. Certainly the Hackney is not needed in this country for such purposes. When it comes to fast road riding, either to shafts or pole, we have a horse not equaled in the world, and we see no reason why the Hackney should attempt to encroach on this field. Indeed, we do not believe that its breeders have any such intention.

The Hackney is essentially the city harness or carriage horse. He combines shape, style and trappy action such as are demanded for vehicles in common use in city streets,

parks and boulevards. If the farmer-breeder fails occasionally to produce one of sufficient excellence for this market, he yet has a "hack"—a horse which for ordinary driving or work on the farm will prove very valuable. The trotting-horse men deceive themselves if they imagine the Hackney has no speed and "cannot get home in a rain." They have conceived this idea from seeing and reading about the high and showy uplifting of knee and conclude that such action is incompatible with speed which demands an "extended" motion. They forget that some horses go high and fast. Race-track speed, of course, is not to be found in combination with trappy action, but some high-stepping Hackneys can show a very respectable road gait when called on to do so. We recently sat behind a three-year-old Hackney mare of good size, shape and substance (a daughter of Hertfordshire Swell) which Manager Telfer of Tranquility Farms had hooked with an old pacing mare with a record below 2:30, and held on to our hat while the Hackney trotted the pacer off her feet—and this to a spring wagon with three able-bodied men aboard.

From a somewhat careful study of the Hackneys brought to this country we conclude that there is no occasion for an attempt to develop them into a speed horse or a speedy road horse. For ordinary driving they possess speed enough; for the gentleman's fast roadster with the light American road wagon we already have the best horse the world affords. Hackney men ambitious to improve the breed will find opportunity if they address themselves to getting a better class of carriage heads and necks, a little more height at the withers and a snap of hock commensurate with the play of knee and shoulders in which the breed is unapproached.

Electioneer and Thoroughbred Mares.

The *Breeders' Gazette* has the following review of the achievements of a California horse: The returns for 1893 are all in, and no strain of blood has made a better showing than that of Electioneer. Great was the hero of Palo Alto, and great are his descendants. It is to Electioneer that practically all the credit in the production of trotting speed received by the thoroughbred is due. No other stallion has had enough success when mated with thoroughbred mares to make it worth while talking about. Now, let us see what Electioneer has accomplished. He has had a better chance on running mares than any other stallion. He is the greatest producer of 2:30 and 2:20 speed, dead or alive. He has the enormous and impressive number of 33 trotters in the 2:20 list. That is surely enough for a fair comparison. How does the record stand?

Just two of these thirty-three 2:20 or better trotters are from thoroughbred mares. But to put the matter a little more forcibly, look at it in another light. See from what sort of mares Electioneer did sire his 2:20 performers. Here is the list, with the sire of the dam given in each case:

Name.	Record.	Sire of Dam.	Record.
Ariou.....	2:07 3/4	Nutwood.....	2:18 3/4
Sunol.....	2:09 1/2	Gen. Benton.....	2:34 1/2
Palo Alto.....	2:08 3/4	Planet.....	2:34 1/2
Truman.....	2:12	Gen. Benton.....	2:34 1/2
Belleflower.....	2:12 3/4	The Moor.....	2:37
Norval.....	2:14 3/4	Alex. Norman.....	2:37
Advertiser.....	2:15 1/2	Geo. Wilkes.....	2:22
Manzanita.....	2:16	St. Clair.....	2:34 1/2
Anteo.....	2:16 1/2	A. W. Richmond.....	2:34 1/2
Ladywell.....	2:16 1/2	St. Clair.....	2:34 1/2
Starlight.....	2:16 1/2	Gen. Benton.....	2:34 1/2
Amigo.....	2:16 1/2	Wildside.....	2:34 1/2
Del Mar.....	2:16 1/2	Toronto Sontag.....	2:34 1/2
Bernal.....	2:17	Gen. Benton.....	2:34 1/2
Adair.....	2:17 1/2	Culver's Black Hawk.....	2:34 1/2
Lot Slocum.....	2:17 1/2	Mohawk Chief.....	2:34 1/2
Campbell's Electioneer.....	2:17 1/2	Clark Chief.....	2:34 1/2
Electricity.....	2:17 1/2	Pilot Jr.....	2:34 1/2
Rustique.....	2:17 1/2	Pilot Jr.....	2:34 1/2
Mont Rose.....	2:18	Piedmont.....	2:17 1/2
Ah There.....	2:18 1/2	Wildside.....	2:34 1/2
Bonita.....	2:18 1/2	St. Clair.....	2:34 1/2
Coral.....	2:18 1/2	A. W. Richmond.....	2:34 1/2
Suisun.....	2:18 1/2	G. M. Patchen Jr.....	2:27
Bell Boy.....	2:19 1/2	The Moor.....	2:37
Bow Bella.....	2:19 1/2	The Moor.....	2:37
Monaco.....	2:19 1/2	The Moor.....	2:37
Antevolo.....	2:19 1/2	A. W. Richmond.....	2:37
Hinda Rose.....	2:19 1/2	The Moor.....	2:37
Expedition.....	2:19 1/2	Harold.....	2:37
Albert W.....	2:20	John Nelson.....	2:30
Ansel.....	2:20	Lexington.....	2:30
May King.....	2:20	Alex. Norman.....	2:30

There are a good many things of interest about this table that do not appear at first glance. In the first place, no less than ten of Electioneer's 2:20 trotters are from mares with records, mostly better than 2:30, they being Belleflower, Manzanita, Starlight, Adair, Bonita, Suisun, Bell Boy, May King, Bow Bells and Hinda Rose. This shows pretty plainly whether or not developed mares make good producers. Then again, 13 of these 2:20 trotters are from mares by stallions with records. Three others are by A. W. Richmond, that so good a judge as Mr. J. C. Simpson says was a fast trotter. Pilot Jr., a very speedy horse, is responsible for the dams of two others, and John Nelson, sire of the dam of Albert W., one of Electioneer's best trotters, and one of his best sons in the stud, was a trotter, and the dam of Albert W. was a sister to Aurora, 2:27. It all shows that, no matter what Electioneer accomplished on thoroughbred mares, he did far better when mated with trotting-bred ones, and that a remarkable proportion of his 2:20 trotters are from developed dams.

A ROSEBURG (Oregon) man purchased \$200 worth of apples, shipped them to San Francisco, sold them, and then had to pay \$41, the balance due for freight and commission. This shows the advantage that a parson holds over a dealer in apples. It will be remembered that the parson who took up a collection, in the old story, got his hat back.—Stockton Mail.

A MAN 64 years of age testified on the witness stand in one of the local courts a few days ago that he had yet to take his first glass of whisky. He also started to say that he did not know the smell of it, but some of the plastering fell from the ceiling.—Santa Rosa Democrat.

AGRICULTURAL ENGINEER.

An Address in Favor of Good Roads.

The address to the people of Sacramento county by the committee which has in charge the bonding proposition for the construction of good roads, is significant in all California counties, and for this reason we present the following portions:

The Executive Committee of the County Road Convention solicits the electors of the county to sign petitions to the supervisors, to submit to the people the question whether they favor a bond issue for 40 years of call bonds for \$500,000, at not over five per cent, for the construction this year of certain trunk lines of permanent highways in macadam.

The estimated aggregate length of the roads is about 156 miles, to be in tracks of 16 feet, and built under the supervision of competent road engineers and by contract.

It is local option in perfection; it is bringing government near to the people; it is the right way to determine such questions before beginning active work.

All the assessable property in the county is liable under such a scheme. Sacramento electors within town and city limits propose to share quite half the burden, thus enabling the whole people to join in the work, since all the people will reap the benefits.

Road-building is of two kinds—temporary and permanent. The earth and the gravel roads are of the first, macadam of the second class.

A Macadam Road Explained.—A macadam road is made by first preparing the earth with but a slight crown, or rounding, with as little disturbance of the soil as may be; then it is rolled by improved machinery thoroughly. Next is laid on about seven inches of coarse broken trap-rock, of which broken cobble is a high order and is plentiful. The interstices are then filled with smaller broken road metal, and the whole again rolled hard and smooth. Then is put on six inches, more or less, of fine broken stone, and that is dressed with stone-dust or pulverized rock, and the whole rolled hard and smooth, creating a water-shedding roof, commonly called a "surface."

In brief terms, that is a good macadam road, and with little care will not alone last hundreds of years, always smooth, clean and offering least resistance to wheel or hoof, but it increases speed of movement, lessens wear and tear, and adds threefold to all hauling capacity.

All testimony everywhere is that such roads are the cheapest. In the interest of economy they ought to be built on a systematic and comprehensive plan, and not by a hand-to-mouth and long-delayed doing by piecemeal, for the latter process destroys system, postpones benefits many years, and gives no assurance of continuance of the work from one administration to another.

While these 156 miles of trunk roads cannot reach to every man's door, they will make the main lines, around which a branch system will grow up. To every man they will offer just so much mileage of good road as he now has to cover on bad road on reaching main line and going thence to the common center—the county seat.

Vast Sums for Patchwork.—The cost of systematic construction is most just when distributed over a long period and put in part upon those to come after us, who are to be the greatest beneficiaries.

The interest paid comes back many fold in the benefit gained. Raising some \$40,000 a year for road purposes, Sacramento county, in 40 years, if she goes on under the present system, will raise by direct tax the enormous sum of \$1,600,000, and will have to show for this great outlay of money only such roads as she now has.

Taxes Will Really Be Lessened.—Under the bonding plan, which is not new, but has been proved by trial elsewhere, the entire cost, distributed over the same period, will be \$1,062,500, principal and interest, and meanwhile we will have all the uses and benefits of the macadam system.

We append a table showing this in detail, but take note that therein no account is made of the certain increase of values by reason of the work proposed; also, the calculation is made on the basis of \$34,000,000 of assessment roll, city and county, whereas we venture the statement that within five years the assessment roll will increase to \$40,000,000, and within ten years to \$50,000,000 by reason of this needed improvement; hence the tax will go down.

The present road tax is 25 cents on county property only, and all agree will never be less under the old system, that which we have pursued for the past 40 years.

But under the new it will not, after the completion of the new trunk lines, be so great, because the enormous cost of maintenance of present roads will be reduced (to the extent of 156 miles, or so much as we can build with the fund) to less than one-third the present cost of maintenance. This is seen when we tell you that there are 400 miles of road in the county; the new macadam will absorb within 44 miles of half of all these roads. So we estimate that the present road tax will not be increased, certainly not after the roads are completed, and that presently it will pay the interest, the principal and the cost of keeping all the other roads as now cared for. Probably it will decline very early, since the assessable values must increase under the new system alone and the cost of maintenance decline accordingly. If the new system is adopted, no more tax money will go into the trunk lines under the old system, and these lines now absorb seventenths of all the money spent on roads.

We cannot now enlarge to you upon the benefits of the proposed scheme. Aside from the confessed advantages of it to all people of the county, whether on the trunk lines or somewhat removed, it will put into circulation in the county a large sum greatly needed, and in its expenditure our own people and those with families will be preferred. The work will be done with proper machinery, which the county can own for further use, under competent engineer-

ing supervision and with all the care and circumspection possible to employ.

The proposed good-road plan not alone benefits the people living in the country, but must be of great benefit to the people living in the city. The country must first be prosperous before the cities can thrive. Increase in population and in prosperity in the country means increased value to city real estate, increased business for the shopkeeper and merchant, increased and more steady labor for the wage-earner. Hence, if the owner of city property wants his lots and his houses to be worth more money, if the city shopkeepers and merchants want more customers, if the city wage-earners want steady employment and more of it, it is to their interest to help along this movement, which, as shown in other counties, must add to the wealth and prosperity of the entire county, and must place Sacramento county in the front rank among the progressive counties of California.

THE FIELD.

Advice on Hop Planting.

As the good price of hops this year has interested many in the crop, we reproduce below an interview which an intending planter in Washington had with Mr. C. M. Davis, for many years superintendent for Ezra Meeker, the well-known hop-grower of Puyallup, as published in the *Ranch*, a bright paper just established at Yakima by E. H. Libby, formerly of the *Rural New Yorker*. The interview represents the approved practice in the northern Pacific coast hop region, and will therefore interest all who are in the hop business in California, as well as intending planters:

I desire to plant ten acres to hops this coming spring. What is the first thing to be done?

Well, said he, if the land is ready for the plow the first thing to do as soon as spring opens is to plow it deeply—running seven or eight inches if the land will stand it, or, which is better in my opinion, plow five or six inches and follow with a subsoiler, loosening the soil several inches lower, but not throwing it to the top. The surface soil is best fitted for the crop.

The plowing done, what is the next step?

Simply get the soil in fine tilth and then set the poles.

What would be your manner of laying off the ground and putting in the poles?

Procure a flexible steel wire—say No. 12 hay wire—as long as can be straightened readily; some say 500 feet can be used. As I would have my hills seven feet apart each way, I daub a bit of bright paint upon the wire every seven feet its entire length. Start at the southeast corner of the field and have an assistant stretch the wire to the southwest. Have small pegs driven at every paint dot on the wire, always placing the pegs inside the wire. These pegs should be about ten inches long and one-quarter to one-half inch square. Set deep so that they can be moved readily. Now throw the wire along the west side from the corner you have reached, and set the pegs as before; then throw the wire along the northeast boundary, pegging every seven feet, always placing the pegs inside the wire. Now go back to the western boundary and stretch the wire north and south seven feet in from the first row of pegs, setting pegs again as before. Move in another seven feet and peg, and so on until the eastern limit of the field has been reached. You now have your field in rows exactly seven feet apart each way. If the field is too long for one stretch of the wire, duplicate the measurements.

You can use either the crown roots or runners. For myself, I prefer the runners for the reason that they will not need grubbing and pruning the first season. With crown roots that must be done. I go for saving labor. Cut the runners to two rings of eyes—they will be about four inches long. With a common hoe remove the earth about three inches from each peg, and always on the same side of the pegs of each row, for the roots. Set the roots on end, inclining a little toward the pegs; cover them lightly.

When would you plant these roots?

As soon as the ground is made ready for them. March or April, where I have cultivated the crop.

When would you begin setting the poles?

Just as soon as these roots are planted. Set a pole to each hill and remove the pegs, and place the poles exactly where the pegs stood. It is preferable to have the roots on the side of the pole next to the prevailing winds. Procure at a hardware store a dibble made for the purpose. I like the square ones best. Make a hole with this dibble and insert the pole firmly, but do not tramp the earth about it; for the hop roots must have free play.

What about short poles?

I have had no experience with them, but I am inclined to think they will be the thing for the Yakima country. I would have them eight feet above the surface of the ground. I think, if inserted 18 inches in the ground, that they will stand firmly. Of course the short poles are the cheaper, and they will save labor, but I do not know how they will affect the yield, having had no experience. By the way, when speaking of the roots I should have said plant three or four male vine roots to the acre, placing them on the side of the prevailing winds.

How soon should the training of the vines to the poles be begun?

As soon as the young shoots are 12 to 24 inches long. Select the two most promising and tie to the pole.

What material do you recommend for strings?

Cut hop sacking, gunny sacks or kiln carpet in squares of about 16 inches, and unravel the strings. Tie loosely so as not to bind the vines. Do not break the tops off of the vines you train. Handle with great care. Children can do this work admirably. In fact, prefer them. Have them twist the vines about the poles "with the sun." Two to three tyings will be needed. The vines must be kept to the poles. Leave the other sprouts that have germinated

until you see that the chosen two are getting on all right, then pinch them off close to the ground.

When should cultivation begin?

As soon as weeds or grass appear, and keep at it as long as vines will permit; use a double shovel plow, throwing the dirt from the roots. Run the plow deeply but not near enough to cut the growing roots. The second time throw dirt toward the roots, and keep doing this. Lay by with a two-horse plow.

Clearing Cactus Land.

Clearing up land which is well set with cactus or prickly pear (*Opuntia vulgaris*) is a difficult and expensive operation. The Australians seem to have in vogue a system which facilitates the rotting of the plant, and some of our readers may like to experiment with it. We find the account in the *Agricultural Gazette* of New South Wales, a governmental publication, and we quote as follows:

A roller and a crusher are constructed for smashing down the plants. The roller, which is first used, and which is drawn by about 12 or 14 bullocks, is simply a large round log, estimated to weigh about three tons, and is about eight feet wide. A strong frame is fixed on it, to which a pole is fastened at one end, having a stay to connect it with the other end of the frame. By this contrivance the draught is from one end of the roller, and the bullocks drawing it thus walk at the side of the standing bushes, while the roller following breaks them down.

When the prickly pears are pressed down by the roller, which requires one operation, the team of bullocks are enabled to walk over the land, or rather on the lowered bushes. The next proceeding is the drawing of the crusher or scraper by about 22 bullocks over the mass. This implement is also a huge log, but it does not revolve, and it has one side flattened, into which are driven 36 inch-square iron spikes, projecting four inches. The spikes are for the purpose of scraping the prickly pears. A strong chain is fastened round it, to which the team of bullocks is hitched. After this treatment the plants operated on present a very crushed and slimy appearance, with the result that where they are lying *en masse* they seem to rot almost entirely. The larger plants appear to be the most easily destroyed, either from their bulbs being more thoroughly scraped or bruised than the smaller ones, or by their being more smothered with their greater upper growth. In any case, the smaller bulbs are less affected by the treatment. A peculiar quality of the prickly pears causes them to strike root from any portion of their leaves, if cut or broken off and allowed to fall on the ground—in fact, any such portion of them will grow almost anywhere; but if the plants are heaped together in large quantities they rot and lose their germinating power. Where time is a desideratum the rolling and crushing does not by any means terminate the operation of clearing the prickly pears, as the large amount of debris lying on the surface requires to be dissipated before the land is again available. The fallen stuff may be allowed to decay, which takes considerable time, or it may be gathered together and burned, and wherever bulbs are found to be still green, which is often the case with the small ones, they are grubbed up, and their roots are run out. The latter method is the more expeditious, though it is the more expensive, and is estimated to cost about £2 per acre. As this is the case, it is questionable whether it would not be more economical to plow the land, when the stuff is sufficiently rotted to allow of such being done. This would no doubt be the best plan where practicable, as the land could then be devoted to agriculture, and the prickly pears could easily be kept under.

Several fields grazing stock were pointed out to us as having been comparatively recently covered with dense prickly pears, but they now appear to be quite clear of the pests. It is said that the seeds of the pears keep up a continuous growth of seedlings, but as these fields were apparently clear of them, the inference to be drawn is that where the land is grazed the young plants are eaten off by the stock. It will, of course, be understood that the method of rolling and crushing prickly pears could only be carried out on thinly timbered and moderately even land, the fallen timber requiring to be collected and burnt off before these operations are begun. I regret that I am unable, through having insufficient data, to give definitely the cost of Mr. Bakewell's system of clearing, but it may be approximately reckoned at per acre as follows:

	£	s.	d.
To collecting and burning off fallen timber, stumps, etc.	0	6	0
" two teams of bullocks, each with a driver, to roll and crush one acre a day, at the rate of £1 each	2	0	0
" gathering together the crushed prickly pears, and grubbing all green bulbs, running out roots, and burning off	2	0	0
" drivers' wages, two men, at 6s. a day each	0	12	0
" grazing 36 bullocks one day, at 9d. per week each	0	4	6
Total cost per acre of clearing prickly pears	£5	2	6

It is obvious that the work of clearing can be performed by the above method at a less cost than by the usual custom of clearing in vogue.

California Thermal Belts.

During the holiday week I went up the mountain side immediately behind the town of Ukiah. The weather was perfectly clear, although there had been a rain storm a few days before; the thermometer stood at about 25 degrees, Fahrenheit; the mud was frozen hard and frost crystals showed everywhere in the loose soil. At about 200 feet above the level of the town I reached a belt where, instead of frost, there was dew and an air like that of spring. This belt was about a quarter of a mile wide, and perhaps the difference in altitude of its two borders was 300 feet. Above this I came again to frozen ground and frost crystals. At both edges of this belt the line was so sharply drawn that two rods rarely intervened between the frozen and the frostless ground. The soil at this point of the hill side, though of good quality, is not cultivated, but half a mile to the southward a grove of 25 orange trees, which

are now loaded with good fruit, is flourishing near the lower edge of the warm belt. On Christmas day a correspondent wrote from Sky Ranch, which is north of this place and 1600 feet above the sea level, that his strawberries and raspberries were in bloom and showing ripe fruit; that the leaves were still green on his deciduous trees; that limes, lemons and oranges were thriving.

These thermal belts I shall not try to explain, and Eastern people are often puzzled over the statement that oranges ripen sooner 100 miles north of San Francisco than in southern California. The northern citrus belt, as it is called, is only a repetition, on a large scale, of this phenomenon which I have described—namely, a belt lying within certain altitudes on the mountain slopes. It is only within recent times that these warm zones have been studied closely, but better acquaintance with them has demonstrated the fact that they exist throughout the northern part of this State, and that in many places where the citrus and other tender fruits will not live in the valley climates, there are points near at hand in the same latitude where they are safer from frost than they are several degrees farther south. As yet these facts are put to comparatively little practical use, but as the country becomes more thickly settled it is not improbable that these elevated warm lands will be much sought for. It will be very important to know how much these belts vary in altitude from year to year, if, indeed, they practically vary at all, and whether the cutting down of the woods and other changes in the earth's surfaces which are made by man will have any effect upon them.—Carl Purdy in Garden and Forest.

Level Culture of Potatoes.

Very few probably make the mistake of high hilling of potatoes in this State, where such practice is almost fatal to the crop unless it be very early in the season, and most growth is attained during the rainy part of the year. It will be interesting to note that the best Eastern growers have also nearly abandoned the high-hill system which was almost universal a few years ago. A. I. Root of Medina, Ohio, has published a little work entitled "A B C of Potato Culture," by T. B. Terry, who is perhaps the best known potato specialist in the United States. To give the reader an idea of the approved Eastern practice, a part of one chapter is herewith given:

With this question we must consider also whether we will cultivate nearly level or hill up; for, if we plant shallow, it will be necessary to plant hill up more or less to prevent the tubers from growing out of the ground. The majority of farmers probably still raise potatoes by planting in a shallow mark, and then hilling up with a plow of some kind when they are about two-thirds grown. On undrained clay soil, where there is danger of stagnant water injuring the crop in a wet season, this practice had better be continued on the ground of choosing the lesser of two evils; but in good potato soils, moderately deep, planting and very slight hilling is undoubtedly the better practice. Even on tile-drained clay soil, deep planting and nearly level culture would not be the best plan in excessively wet seasons, although averaging better perhaps than shallow planting and hilling, all things considered.

There are reasons, of course, for this hilling up which is so universally practiced. Farmers did not have smoothing harrows, horse-hoes and good cultivators years ago. I am not an old man, but I can remember when such things were unknown. The plow came first and was made a general-purpose tool. It would throw earth over the weeds and save hand-hoeing. It was, very naturally, used for this purpose. Hilling up, in connection with shallow planting, not only prevented tubers from growing out of the ground as much, and kept them out of water on undrained land, but more of the stems of the vines were covered in the earth; and from these covered portions were sent out more roots and bearing stems. The practice was a necessity with shallow planting. It increased the crop in one way, and protected it, while injuring it somewhat in another.

Nearly 40 years ago I used to hill potatoes in father's garden. Father used to insist on my making the hills large and dishing, so as to "catch the rain." When I began farming I remembered the lesson, and noticed also that other people hilled their potatoes, and so I did likewise. If I had been asked why I did so, I should certainly have preached the catch-the-rain theory, with perfect assurance that it was sound doctrine. But with all due respect to our fathers and other people, I cannot help thinking now that this plan was not in accordance with common sense. Advocates of this way seem to think the roots are all in the center of the hill, right under the tops.

But what are the facts? If you will wash out a hill in mellow soil, you will find, before the tops are half grown, that the little rootlets have crossed and recrossed all the space between the rows, and, of course, they want their water as well as food just as much there as under the hills. If the surface of the ground is kept level, or nearly so, a shower soaks in all over alike, and each root gets its share. If the seed was put in moderately deep, and the surface is kept nearly level and constantly stirred, the crop is in the best shape, not only for catching rain, but to endure hot, dry weather—one of its greatest enemies.

Suppose one hills up his potatoes with a shovel-plow, what does he do? He piles the mellow earth, which should make a mulch all over the surface, up about the hills. This is well, perhaps, if he could get as much more to put in between the rows again; but instead he leaves this space (where a part of the roots are) bare, hard and exposed to the hot sun. If he should cultivate it again, he would injure the roots, which are now at the surface (not a few also were destroyed by the plowing), and the soil in the hills will certainly dry out more than if it were down nearly level, and protected by a mulch of fine earth.

Some think that the crop must be hilled up, or they will grow out of the ground and be injured by the sun. After

raising many thousands of bushels with but very trifling hilling, I do not find as large a proportion greened as when I hilled them up. We generally use a horse-hoe once during the season to throw a little earth under the plants when they are about half grown so as to check the weeds which are just starting in the hills; after that the shade from the tops will keep them down. The use of the cultivator, as many times as it ought to be used during the season, will work a little earth toward the plants, so that altogether, perhaps, the hills are two or three inches higher than between the rows when we are through cultivating.

FRUIT MARKETING.

Orange Traffic at the East.

Now that we are in the midst of the orange harvest, and thought turns naturally to the past, present and future of the orange-growers industry, the following interesting essay by Horace W. Way for the holiday edition of the *New York Fruit Trade Journal* will be a fit theme for consideration and discussion. It is in brief a most suggestive showing of how one branch of our horticulture has been wonderfully developed, and indirectly comes the thought: How will fashionable governmental ideas affect this most important factor of the nation's prosperity? We quote as follows:

Thirty years ago the supplies of oranges for the United States came almost exclusively from the Mediterranean, and "Sweet Messina Oranges" filled the popular demand. At that time the entire business was controlled by a few heavy importing houses. The business was done entirely on orders from this side, and indeed these orders were all given in the fall of each season, at which time the sailing vessels for the cargoes of oranges were also chartered, in fact, in September the campaign was arranged for over six months ahead. This method of conducting the business had existed for many years before that time, but about 1865 the actual growers of the oranges in Sicily, who had previously sold all their fruit to the firms who received the orders from the American houses, began to consign the fruit here, and gradually the old importers abandoned their former methods and received the fruit on consignment. Later still, new houses entered the field to secure their share of this profitable business, which I happen to know paid one firm over \$30,000 clean commission on their Sicily business alone during one season. The next move on this checker-board, some fifteen years later, was the establishment here of the sons and relatives of various prominent shippers of Palermo, and, with the exception of three or four American houses who still hold their own for one reason or another, the entire business from Sicily is now handled by the parties above alluded to.

The receipts of Mediterranean oranges have fallen off materially during the past ten years; in fact, none now come from Spain, and very naturally so, owing to the fact that Florida came to the front about that time, and a few years ago California oranges made their bow to the American public, on this side of the Rocky mountains. At first the importers of Mediterranean oranges ridiculed the idea that the American markets could ever be taken away from them, but it is certain that hardly any of these gentlemen will now entertain the views they then did, simply because it is a self-evident fact that with the constantly increasing production of oranges in the great States of Florida and California, reaching this present season, it is expected, between 6,000,000 and 7,000,000 boxes, not counting at all the yield in Louisiana and Arizona—small now, but growing nevertheless—we can do without any oranges from Europe. True, some will come, and they may do fairly well, there being still a certain demand for them in the Atlantic coast States; however, the handwriting is on the wall and he who runs may read—unless he is a blind man in a business sense.

True, over one million boxes came last season owing to the heavy yield in Sicily, but the results were so poor that no such quantity need be looked for another season.

The Present—Florida and California Oranges.—Twenty years ago a few oranges commenced to come here from Florida and were received mostly by houses not directly in the fruit trade. Some even came to butter, cheese, etc., merchants; in fact, Messrs. Walter Carr & Co. received them about 1873, and the managing partner, Mr. William Sneekner, has assured the writer that he obtained \$6 per box for almost all sent his house for several years, and even then could not supply the demand for this extra fine orange. Ten years ago the dealers in fruit commenced to receive direct from Florida, and soon there were probably 150 firms and single merchants receiving this fruit; in fact, it is said that a nicely-worded circular and a brass stencil were all that was needed to obtain ample consignments of oranges from Florida. Of course there were some unprincipled receivers who looked after No. 1, just to see that the Florida shipper did not receive any more than he ought to, and in a year or two a great outcry was heard from the South about "swindling commission merchants" in the Northern cities. It is undoubtedly true that the growers were swindled right and left, so that it is no wonder they looked about for a remedy, and soon after the Florida Fruit Exchange (now the greatest fruit organization in the world) entered the field, and to-day stands at the head. The number of receivers in this city dwindled rapidly, and actually, to-day, those of any prominence here can be counted on the fingers of one's two hands.

There will always be a certain number continue as of old, owing to their handling successfully certain groves, having relatives or very dear friends in Florida, or for one reason and another. The swindlers have been driven out, and the prominent receivers here now stand second to none in honesty and ability. The production increased yearly and soon made itself felt by the importers of foreign oranges, as mentioned previously. Almost every season, however, something has occurred in Florida to prevent a full yield of

perfect fruit—a long-continued drouth through summer; a plague of red spiders causing the leaves to fall from the tree; heavy rains spoiling the keeping quality of the oranges, and last, but not least, visits from Jack Frost forcing the temperature down to about 20 or 25 degrees and naturally ruining much of the fruit on the trees, taking its life, so to speak, and causing it to arrive at its destination puffy, light weight and devoid of juice. Notwithstanding all these troubles the crop continues to increase, and authorities in Florida assure me that when all the trees already planted are in full bearing (and most of them are now four years old, so that it cannot be long before all will be in full bearing), the crop cannot be less than 10,000,000 boxes per annum. True, the same troubles which have occurred in the past may continue in the future, still, we shall probably have a crop of 7,000,000 to 8,000,000 boxes within a few years. Nine hundred thousand boxes arrived in New York last season—more than one-fourth of the entire yield. California now steps to the front, and just about the time, or a little before, Florida ends. These oranges come into the Western markets, because very few have as yet found their way east of the Alleghany. Not 5000 boxes of California oranges, in all, were ever sold in New York. The crop in southern California increases rapidly, and this season it is expected that at least 2,500,000 boxes, possibly more, will be sent out of the Pacific coast State. If the fruit has to run as many risks in the way of drouths, red spiders, rains and frosts as that of Florida, I do not know it; but I think not.

The California crop is expected to increase in size, possibly faster than that of Florida, immense groves having been put out during the past five years, and the yield later on will be simply incredible. One of the heaviest growers of California oranges wrote me lately:

"I do not believe you can comprehend the volume of the California business in the near future. I know it is almost beyond the comprehension of those right here on the ground, and I believe within five years we will have 25,000 carloads (over 7,000,000 boxes) of oranges."

The fruit up to last season had found ready purchasers f. o. b. California, in the merchants of the Western cities, but on heavier supplies and a holding back of these orders, it is said that a considerable part of last season's crop actually was sent out on consignment. To my mind more must go, although the association of growers which has just formed—the Southern California Fruit Exchange—may succeed in carrying out their desire to sell all f. o. b. shipping station; still, the experience of Sicily twenty years ago, and Florida eight to ten years ago, should certainly show those gentlemen that they cannot sell their crop f. o. b. when it reaches a certain size, any more than the other two parts of the world could theirs, and for similar reasons. I certainly wish them every success, but I wait to see what this season will bring forth, and if they do succeed on the lines which I understand they have determined on, *i. e.*, to sell f. o. b. cars in California, then I will cheerfully acknowledge that I was wrong, and at least one year ahead of time.

THE FUTURE?

To my mind it is a question of the survival of the fittest. It is not which orange is indeed the finest, but which will sell the best, that all fruit men must consider. Even if the Sicily oranges were as good or sold as well here as those grown in this country, it must be remembered that with a duty of 30 cents per box, a freight of 32 cents (as it is to be this coming season), commission and auction charges of, say, 10 cents, and a cost of 40 cents for the box, paper, nails, packing and shipping, this equals \$1.12 per box, without the cost of the oranges being taken into consideration. At less than 50 cents per box in Sicily for the fruit alone, I am confident that growers and shippers cannot possibly send it, so we have a total cost, on a moderate calculation, of \$1.62 per box for the Mediterranean orange, against which the oranges grown in America must compete.

The charges on a box of Florida oranges are about as follows: 35 cents for box, paper, nails, packing and cartage to shipping station; 15 cents average local freight in Florida to Jacksonville; 35 cents freight to New York (5 cents less by one line), and, say, 10 cents commission, auction charges, etc., ergo, 95 cents for all without the fruit.

The charges on a box of California oranges are heavy, simply owing to the high freight to New York or Chicago of 87½ cents per box. Add to this 35 cents for the box, etc., and 10 cents commission, etc., gives \$1.32½ per box without the fruit. This freight is certain to be reduced, however, because the fruit cannot possibly stand it, and efforts are now being made to secure a reduction to 50 cents per box. It will be some years, in all probability, before any very heavy quantities of these oranges come as far East as this city, although I fully anticipate heavier receipts each succeeding year.

On the above calculation, allowing duty, freight, etc., as given, it shows the actual expenses on a box of oranges, from the tree to the wholesale merchant here, to be:

Mediterranean.....\$1.12 per box.
Florida......95 per box.
California.....1.32½ per box.

To this must be added the value of the fruit itself. Florida has the great advantage of low freight and no duty, while her fruit sells above the others. It must be remembered, however, that I am figuring the cost in New York for all these oranges, because the freight to the Western cities from Florida is almost double what it is to this city.

At present the Florida orange stands at the head, and with equal quality and condition it will bring more money than any orange grown. Will it continue to do so? Will it improve, or will it degenerate? Will California come to the front, or will some other point produce finer fruit in 10 or 15 years from now? These are all matters for thought, and with same I leave the subject.

THE London Vegetarian Society has a committee of women to assist in promoting a knowledge of the artistic cookery of vegetables.

THE IRRIGATIONIST.

Irrigation by Windmills.

A correspondent asks if irrigation by windmill power is practicable. We can reply in a general way that it is practicable and is practiced to a considerable extent in some parts of California. Some settlements which have become famous, as for instance near National City, San Diego county, relied for many years almost wholly on wells and windmills, and some, which have not since come under comprehensive irrigation systems, still rely upon the wind for raising water. Of course irrigation ditches from ample sources of supply are the chief reliance of California irrigators; next perhaps are the great steam pumping plants, but everywhere the windmill is discharging its duty nobly in bringing value from arid land.

It will no doubt interest our correspondent and many others to read the results of a systematic inquiry into the use of windmills for irrigation in some parts of the great interior arid region of the country. Such an inquiry was recently conducted by B. A. McAllester, Land Commissioner of the Union Pacific Railway, and from his report to the *Irrigation Age* we draw the following suggestive statements:

Mr. McAllester states that he secured in the neighborhood of 200 names of parties located in western Nebraska, southeastern Wyoming, northeastern and east-central Colorado, and western Kansas. To each one of those parties he sent a letter asking the locality of their lands, number of acres irrigated, power used, whether wind or steam, cost of plant and cost per year of operation; depth and diameter of well, depth of water, whether or not the well could be pumped dry; diameter of stream coming from the pump, capacity of pump in gallons per hour, average length of time per year of running the pump, and area and depth of reservoir. A large number of these letters were returned with full and complete answers to the questions asked, and in many instances accompanied by enthusiastic letters advocating this method of irrigation. Mr. McAllester continues as follows:

While awaiting replies to these letters to the individual farmers, I submitted to one of the prominent wind-engine pump companies a series of questions as to the capacity, cost, etc., of windmills and pumps. From the pump company I learned that one-horse power will raise a 5-inch column of water 100 feet, a 6-inch column 70 feet, and an 8-inch column 40 feet; additional horse power will elevate the water in direct proportion. A 10-foot mill will develop one-half of one horse power; a 12-foot mill three-fourths horse power; a 14-foot mill two horse power, and each additional two feet in diameter of mill develops practically an additional horse power up to a 30-foot mill which develops eight horse power. The cost of the mills range from \$40 for the smallest size up to \$400 for the largest.

In response to an inquiry as to the estimated number of days a windmill will run during the year, the company replies as follows: "It depends on locality. Here in Illinois total output one-third or eight hours per day. Kansas and Nebraska will average double this amount." I think the estimated average for Kansas and Nebraska, as compared with Illinois, will be accepted without question.

I further ascertained from the pump company that a 5-inch pump geared to run 48 8-inch strokes per second will discharge 1860 gallons of water per hour; a 6-inch pump geared in the same way will discharge 2760 gallons per hour.

The Duty of Water.—From the printed report of the Colorado State Agricultural College at Fort Collins, Colo., I learned that the duty of water, as determined by actual measurement is one cubic foot per second running continuously for 60 to 65 acres of ground. This during the month of June when the greatest amount of water is needed for irrigation. During the entire irrigation season one cubic foot per second, if reservoired, is sufficient for 175 to 300 acres. The same report shows that by actual measurement the amount of water required for various crops ranges from 1.67 feet to 2.53 feet in depth. That is, if the entire amount of water necessary for the perfect irrigation of the land was applied to the land at one time, it would be necessary to cover the ground to the depth named, according to the crop to be irrigated. The report shows also that this measured depth includes the measured rainfall during the same season. For the purpose of estimates given in this paper I will assume that the average depth required for crops is two feet.

What a Windmill Will Do.—From the statements made by the pump company as to the capacity of a pump, I learn that a 5-inch pump will discharge 1860 gallons of water per hour. This is 31 gallons per minute or five-tenths gallons per second, and is equal to .06½ cubic feet per second. On the Colorado basis as before given, a stream running .06½ cubic feet per second would irrigate about six acres of land; but the pump is only estimated to run about one-third of the time, consequently one-third of the water would be secured and about two acres could be irrigated direct from the pump.

I have a large number of reports from farmers who apparently put in their windmills originally for the sole purpose of securing water for stock, but have since been successfully irrigating orchards, garden patches, etc., from the surplus water without making any attempt to reservoir it. These reports show that such surplus of water is sufficient to irrigate from one to three acres of land.

Reservoir Possibilities.—Now suppose a farmer expends a few dollars in constructing a reservoir 100 feet square by four feet deep, what would be the result? Such a reservoir will contain 40,000 cubic feet, or about 300,000 gallons of water, a 5-inch pump discharging 1860 gallons of water per hour, will in one-third of a day, or eight hours, discharge 14,880 gallons. In 20 days of eight hours each (this is assuming that the windmill runs one-third of the time) 297,600 gallons of water will be secured, practically filling our

300,000 gallon reservoir. During the six months from April to September inclusive, there are nine periods of 20 days each, therefore the reservoir can be emptied and filled nine times during the six months, resulting in an aggregate of 2,700,000 gallons of water for irrigation purposes, equal to 360,000 cubic feet.

Irrigation and Rainfall.—The report of the Kansas State Board of Agriculture, for last year, shows that at Wallace, Kan., during the six months from April to September, the rainfall aggregated over 15 inches. We have before found that an average of two feet in depth, including the rainfall, is required for practical irrigation; or in other words, two cubic feet of water per square foot of land. An acre of land contains 43,560 square feet, therefore, to irrigate one acre of land requires 87,120 cubic feet of water; of this 15-24 or ⅔ may be estimated as being the rainfall, leaving ⅓ to be supplied from the reservoir. Therefore to irrigate one acre of land, during the season, requires 32,670 cubic feet of water; but our pump and reservoir will supply during the season, 360,000 cubic feet, or water enough to irrigate about 11 acres.

Things Actually Done.—Now, we have seen what in theory ought to be accomplished with a pump and reservoir of the capacity named, let us see what our farmer's reports show as actually being accomplished. John Simon, of Garden City, Kan., reports a windmill pumping a 5-inch stream of water into a reservoir 100 feet square by four feet deep, raising the water 12 to 15 feet and irrigating 10 to 15 acres; the entire cost of his plant was \$140, with practically no outlay for operating expenses. J. F. Monson, of Julesburg, Colo., reports that he is irrigating eight to ten acres with two windmills raising a 3-inch stream of water 20 feet into a reservoir 80 feet in diameter and four and one-half feet deep. The cost of his plant was \$225. J. L. Diesem, of Garden City, Kan., is irrigating 15 acres from a well 13 feet deep, by means of a pump throwing 6000 gallons per hour into a reservoir 140 feet by 153 feet and four and one-half feet deep. His plant cost \$350. Examples of these results might be multiplied indefinitely; but enough have been given to show that theory and practice bear one another out, and that, at a comparatively moderate cost, it is eminently practicable to irrigate 10 to 15 acres of land by means of a windmill pump.

Depth of Wells.—Another important question to be considered in this connection is the depth from which water can be successfully pumped by windmills for irrigation. Theoretically a 5-inch column of water can be raised 100 feet for each horse power developed by the windmill. The pump company states that the practical limit of raising water is about 200 or 250 feet. Among the reports which I have received from the farmers I have a number of instances where the water is being pumped from considerable depths. Among them J. C. Houser, of Grainfield, Kan., is pumping from a well 56 feet deep. S. K. Wine, of Menlo, Kan., is pumping from a well 130 feet deep. S. T. Percell, of Grainfield, Kan., is pumping from a well 140 feet deep. Four wells at Weskan, Kan., are respectively 135 feet, 153 feet, 160 feet and 140 feet in depth. This shows that it is practicable to raise the water from a considerable depth below the surface of the ground.

Independence on Few Acres.—It is my opinion that the future irrigation of the plains country is to be largely carried on by means of windmill pumps. Each farmer can, independent of his neighbors, or of any irrigation company, and at a cost not exceeding \$250, irrigate from 10 to 15 acres of his quarter section, and 10 to 15 acres properly irrigated and carefully cultivated is as much as any man ought to undertake to cultivate under irrigation. On this irrigated ground he can raise those crops which will bring in the best financial return, and can thereby insure himself and his family sufficient income to more than support them independent of the fluctuations of the natural rainfall.

Cost to See Midwinter Fair.

The following is printed as a complete list of the concessions at the Midwinter Fair to which extra admission is charged:

	Cents.
General admission.....	50
Hawaiian Cyclorama.....	50
Boone's Arena.....	25
Firth Wheel.....	25
Santa Barbara Sea Lions.....	25
Hawaiian Village.....	25
Dante's Inferno.....	25
Colorado Gold Mine.....	25
Chinese Building.....	25
Chinese Theater.....	25
Moorish Mirror Maze.....	25
Automatic Race Course.....	25
Green's Sculpture Exhibit.....	25
Egyptian Hall.....	25
Oriental Village (gate).....	10
Cairo Street (gate).....	10
Oriental Theater.....	25
Oriental Concert.....	25
Dancing Girls.....	25
Camel Trip.....	25
Donkey Trip.....	10
Haunted Swing.....	25
Heidelberg Castle.....	25
Heidelberg Concert Hall.....	25
Esquimaux Village.....	25
White Cloud Indians.....	25
Arizona Curiosities.....	25
Ostrich Farm.....	25
Forty-nine Mining Camp.....	25
Forty-nine Theater.....	25
Forty-nine Dance House.....	25
Foot's Museum.....	25
Electric Theater.....	25
Japanese Village.....	25
Romanian Concert Hall.....	25
Captive Balloon Grounds.....	10
Balloon Trip.....	50
Scenic Railroad.....	10
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Merry-Go-Round.....	5
Phonograph.....	5
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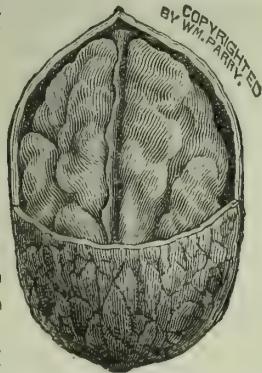
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THE HOME CIRCLE.

The Countersign Was "Mary."

'Twas near the break of day, but still
The moon was shining brightly;
The west wind as it passed the flowers
Set each one swaying lightly.
The sentry slow paced to and fro
A faithful night-watch keeping,
While in the tents behind him, stretched,
His comrades all were sleeping.

Slow to and fro the sentry paced,
His musket on his shoulder;
But not a thought of death or war
Was with the brave young soldier.
Ah, no! his heart was far away,
Where, on a western prairie,
A rose-twined cottage stood. That night
The countersign was "Mary."

And there his own true love he saw,
Her blue eyes kindly beaming;
Above them, on her sun-kissed brow,
Her curls like sunlight gleaming,
And heard her singing, as she churned
The butter in the dairy,
The song he loved the best. That night
The countersign was "Mary."

"Oh, for one kiss from her!" he sighed,
When up the lone road glancing,
He spied a form, a little form,
With faltering steps advancing;
And as it neared him silently
He gazed at it in wonder,
Then dropped his musket to his hand
And challenged: "Who goes yonder?"

Still on it came. "Not one step more,
Be you man, or child, or fairy,
Unless you give the countersign.
Halt! Who goes there?" "'Tis Mary,"
A sweet voice cried, and in his arms
The girl he'd left behind him
Half fainting fell. O'er many miles
She'd bravely toiled to find him.

"I heard that you were wounded, dear,"
She sobbed; "my heart was breaking;
I could not stay a moment, but,
All other ties forsaking,
I traveled, by my grief made strong,
Kind heaven watching o'er me,
Until—unhurt and well?" "Yes, love,"
"At last you stood before me."

"They told me that I could not pass
The lines to seek my lover
Before day fairly came; but I
Pressed on ere night was over,
And as I told my name, I found
The way free as our prairie."
"Because, thank God! to-night," he said,
"The countersign is 'Mary.'"

—Margaret Eytinge.

The Will Makes the Way.

It was a noble Roman,
In Rome's imperial day,
Who heard a coward Croaker,
Before the castle, say:
"They're safe in such a fortress—
There is no way to shake it!"
"On! on!" exclaimed the hero,
"I'll find a way, or make it!"

Is Fame your aspiration?
Her path is steep and high!
In vain he seeks her temple,
Content to gaze and sigh!
The shining throne is waiting,
But he alone can take it
Who says with Roman firmness,
"I'll find a way, or make it!"

Is learning your ambition?
There is no royal road;
Alike, the peer and peasant
Must climb to her abode,
Who feels the thirst of knowledge
In Helicon may shake it,
If he has still the Roman will
To find a way, or make it.

Are riches worth the getting?
They must be bravely sought—
With wishing and with fretting
The boon cannot be bought.
To all the prize is open,
But he can only take it
Who says with Roman courage,
"I'll find a way, or make it."

—John Godfrey Saxe.

Deacon Redpath's Religion.

IT was Sabbath morning. A peaceful mood pervaded all nature as if showing respect to the holy day. A peaceful devotional spirit also filled the soul of Deacon Redpath as he sat, habited in his "Sunday" garments, on the shaded piazza, engaged in reading the good book previous to starting to church.

Inside the house could be heard the sound of swift-moving feet. It was the deacon's wife, hurriedly putting the last touches to her simple toilet. At last Mrs. Redpath appeared in the doorway with bonnet primly adjusted, and she stood for an instant drawing on a pair of silk mitts over her brown hands.

The leaves of the vines that shaded the piazza barely quivered in the quiet, August heat. The wind, it would seem, had retired from Sabbath work; but the sun, with less

reverence, seemed to be doing double duty, judging from the warmth of its rays. Raising her eyes and happening to glance in the direction of the barn, Mrs. Redpath suddenly exclaimed: "Why, Jerry, there is Dolly and her colt left in that hot yard. Why wasn't she put in the pasture?"

The deacon slowly raised his eyes from the bible. "Sam forgot to, I suppose, before he went off," he said.

His eyes fell back to the holy reading.

"Well, you are not going to leave her there while you go to church, are you?" asked Mrs. Redpath. "There is no shade there and the sun is so hot."

"I can't move her now," said the deacon, without even raising his eyes; "it would make me late at church."

"Well, then, I would be late at church sooner than leave Dolly to suffer," persisted his wife.

The deacon looked up at his wife and spoke, not with spirit or temper, but with the air and voice of a long-suffering martyr. "Cynthia," he said, "it is so strange to me that you have no regard for my seasons of devotion. You know I always want an hour of quiet devotion before going to church, to prepare my mind for the enjoyment of the services. But you'll disturb my sacred reflections with any trifling matter. You seem to have no reverence for the spirit's visitations."

"But there are other duties more binding than the mere form of devotion," replied Mrs. Redpath. "'A merciful man is merciful to his beast.' Now I believe that when I give comfortable care to the dumb creatures under my charge I am serving God just as truly as when I read my bible or pray to Him. And if I neglect them and abuse them, I am violating my duty to Him. I cannot enjoy the services to-day knowing that Dolly and her colt are sweltering in that hot yard, when they might be in the shady, grassy pasture."

"It is very plain to me, Cynthia, that the true spirit of religion has never touched your soul," replied the deacon. "When you place such trifling matters superior to the soul's devotions, it clearly shows that you know nothing of true religion. I shall pray for you, Cynthia, that your heart may be made right. But we must be going to church or we will be late."

The deacon descended the steps with bible in hand and took the path to the gate leading churchward. Mrs. Redpath also descended the steps, but instead of following her husband she picked up a pail standing near, and going to the pump got a pail of fresh water; then, gathering her skirts in one hand to prevent their contact with the pail, she proceeded with the water to the barnyard, where the faithful old mare stood in the blistering sun. "There, Dolly," she said, "I can't put you in the pasture, but I brought you this drink to freshen you."

The animal took the drink with the same enjoyment and sense of refreshment that we human beings feel when we quench our thirst with a cooling draught on a hot day. With hurrying steps Mrs. Redpath then followed her husband.

The sermon the deacon listened to that morning was a divergence from the minister's usual discourse. The subject was practical christianity, and in plain speech and earnest tones the good parson hit right and left on the non-application of Christian principle to the common every-day duties of life.

"I tell you, friends," he said, earnestly, "the test of true religion is not in frequent bible readings, in long hours given to prayerful devotions, or in a church-going zeal that would make your vacant pew a sign of death in your family, but in how you apply your Christian principles to the every-day actions of your life. It matters not whether you are a merchant, a mechanic or a farmer, if your Christianity is such that you cannot mix it up with your business operations; then you are deceiving yourselves into thinking you possess that which you do not. Show me a professing Christian who neglects the dumb brutes in his care, who sends up long prayers for his neighbor's salvation, but who at the same time is unjust to that neighbor in business and neighborly dealings, and I will show you a man whose religion isn't worth a pound of sawdust."

The deacon flinched as though he had literally received a blow in the face. His neglect of animals was a matter so well known that it had become proverbial in the neighborhood. They were underfed and poorly protected in winter, and equally as neglected in other ways in summer. It was a subject on which he and his wife had held many an argument; and when she claimed that the care of dumb creatures involved a principle of right and wrong, he would simply regard it as a woman's sentimentality, and continue to care for his animals with the least work and expense possible. He re-

garded them simply as a means of money-making, and that it was any part of his moral or Christian duty to consider their comfort was a truth of which he had never been convinced.

Services over, the deacon and his wife proceeded on their way homeward. But not a word was spoken on the way. This walk was usually employed in discussing the sermon and services, but to-day the deacon seemed to have no desire to talk; and Mrs. Redpath was too wise a woman to mar the effect of the sermon by expressing any triumphant approval of the minister's truthful but cutting words. Arriving at home, to their surprise, one of their neighbors stood in the dooryard awaiting them. His land adjoined the farm of Mr. Redpath. He was a man of rough appearance and uncouth manner, and he met the deacon with an angry look on his face, and spoke in loud, angry tones.

"See here, Mr. Redpath," he said, "your cattle have been in my corn-field again. They've eat and trod down half the field, and for once in your life you'll pay for your slackness. I've fastened up your cows and you can't get them until you pay the damages. You promised weeks ago to fasten up your old fence, but you haven't done it, and now you'll take the consequences."

"Don't get angry, Mr. Green," replied the deacon in a placid, pacifying tone of voice. "Remember it is the Sabbath day, and it should not be desecrated by the use of angry words."

"Don't fling your religion at me," retorted Mr. Green scornfully, and angrier still. "I've no faith in your religion. A man who won't do simple justice by his neighbor needn't talk to me about religion. I've lived here by you for years and I've been aggravated to death by the condition of your fences. Your cattle have broken through year after year and destroyed my crops. You'll send up long prayers for your neighbors, and at the same time you'll provoke them to commit sin by getting angry, by your injustice to them in business matters. I've borne your slack, careless ways for years for the sake of neighborly peace, but I'll not bear them any longer. Now, when you pay the damage to my crop you can have your cows, but not before."

So saying, the irate neighbor strode out of the yard.

Mr. Redpath and his wife stood dumfounded. The deacon was in a chaos of doubt and distrust. Was his religion, after all, but a mere form? Had he, with all his prayers and devotion, been a stumbling-block in his neighbor's pathway?

Mrs. Redpath was the first to speak. "Jerry," she said, "you've been hit pretty hard to-day; but it sometimes takes a painful operation to effect a cure. There's no doubt but Mr. Green has fared badly at your hands. Our cattle have broken through your old fences and injured his crops again and again, and I don't wonder that he has at last turned on you. I tell you, Jerry, you've kept your life and your religion too far apart. You've made two distinct things of them. You've held your religion as too high and holy a thing to be mingled with the common duties of life, whereas a true Christian can't separate them. Now, I believe a true religion will show itself in a line fence, in the care of dumb creatures, in one's duties to his home and family. A true religion is always a practical religion."

So saying, Mrs. Redpath walked into the house; but the deacon, humbled and with eyes opened, turned his footsteps toward the barnyard where old Dolly stood still in the hot sun. Taking her by the mane he led her to the pasture gate and let her and the colt in, where they went prancing gaily off in appreciation of the change. The next morning the deacon went to the home of Mr. Green and made an amicable adjustment with him and took possession of his cows. His next move was the purchase of new fence material, and before another Sabbath rolled around, a good line fence, one of the surest promoters of peace among country neighbors, stood between his pasture and his neighbor's field.

The deacon's religion had just begun.—Nellie Burns in Ohio Farmer.

Patti as a Child.

She was a child of very passionate, and, I think, of very vindictive temper, for I know that we were all afraid of provoking her, but there is a great deal to be said in extenuation, writes Katherine B. Foot, in an interesting article on "My Tabooed Playmate, Adelina Patti," in the February *Ladies Home Journal*. She was compelled to study in one way or another constantly. I do not remember that she ever went to school, but I know that she was taught at home, and she must have been well taught,

for even in her childhood she spoke English and Italian, and, I think, French perfectly. After her first appearance she often traveled with Max Strakosch, her brother-in-law, sometimes alone, and sometimes with one of her sisters, and the poor child was often very tired. It was probably because she was so tired that she was extremely capricious and obstinate about singing in public, and she soon learned to know that to threaten that she wouldn't sing just before it was time for her to appear would bring her almost anything that she chose to demand.

One day I was sitting on our front stoop with my big wax doll in my arms. I was only allowed to have her to play with when I had been very good indeed, and she was the biggest, most beautiful doll in the neighborhood, or that I had ever seen, even in shop windows. As I sat there Adelina came toward me with her doll in her arms. She stopped and said: "Show me your dolly?" I held her up and expatiated upon her beauties. I confess now that I felt a keen and wicked satisfaction that her doll had only a plaster head, and I know, from sad experience, that it was the kind that got grimy and had to be washed off with sweet oil occasionally, and very often had a cracked head, and that she was altogether of an inferior class from my dolly. "She's pretty, isn't she?" said Adelina. "She's beautiful," I said, hugging my treasure, for she was my very own child to me. "How much did she cost?" said Adelina. "I don't know," I said, "a lady sent her to me from London. See, her eyes open and shut," and I gave a vigorous yank to the long wire which was concealed under her petticoats. "Show me how her eyes go?" Adelina said. And after opening and shutting those very inexpressive black eyes several times, she handed her back to me and said: "I shall have one like her to-night." My own eyes opened wide at this, and I said: "How will you get her?" "Oh, if Max don't give her to me quick, I'll scream."

Hints to Housekeepers.

A small bottle of camphor or a little alum and water will aid in drying up pimples that have been tampered with.

To prevent the hair from falling out, saturate the scalp twice a week with the following: One ounce of borax, one-half ounce of gum camphor, one quart rain water. Boil all together and bottle.

No matter how large the spot of oil, any carpet or woollen stuff can be cleaned by applying buckwheat plentifully, brushing it into a dustpan after a short time, and putting on fresh until the oil has disappeared.

When it is required to use carbolic acid as a disinfectant, it should be mixed with boiling water. This promptly overcomes the usual antagonism between the acid and the water, and converts them into a permanent solution, which will keep for weeks.

To improve the complexion one should keep the pores of the skin open. Wash the face and ears with very hot water and then put in sufficient cold water to make it tepid for the body. The face should be washed in hot water at least three times daily.

To prevent mouldy cheese, the housekeeper should leave the cover a little open when the cheese is in the pantry. A revolving cheese dish is a capital arrangement for keeping cheese fresh. It has a cover that does not require to be lifted off when the cheese is on the table.

Cold-boiled potatoes sliced and placed in milk gravy and boiled till warm are very good with any kind of pork, especially ham and bacon. They are more delicate if the gravy is thickened with cornstarch and enriched with butter. This is a way of saving potatoes, as the gravy forms much of the dish.

There is a great deal of uncertainty as to whether it is or is not the thing to fold the napkin after a formal meal. If one is staying in the house and knows that napkin rings are in use, it seems a reflection upon that custom to fling the napkin down in an untidy heap. An elegantly appointed table deserves better treatment, even at the end of the meal, than those dishevelled piles of drapery, too. Therefore, it always seems fittest to simply half fold the napkin, and not attract attention to it either by one obtrusive habit or the other.

"Deah me," said chapple, as he donned his sixth costume for the day, "I've been working like a horse!" "Ya-as," returned Doody, who is brighter than he looks, "like a clothes-horse."—Puck.

George—You would marry the biggest fool in the world, if he asked you, wouldn't you?

Ethel—O George, this is so sudden!—Vogue.

Fashion Hints.

Frill ruchings are the distinctive feature of neck dressing just now. Black net edged with white or black lace is the most pronounced style. These ruchings are made by taking net, ribbon, raveled silk or almost any material and laying in triple or quadruple box-pleats in the center; these fall together and make the desired fullness. Silk mull also makes pretty ruches. Several pleated or gathered ruffles are added, reaching over the shoulder; they are ornamental adjuncts to a costume.

Ruches of finely crimped and pleated silk mull are edged with marabout tips and are very airy and becoming.

Spangled net is used for this purpose and intended for evening wear.

Full coq feather ruches of white with butterfly bows of black velvet are stylish with black costumes.

All descriptions of ostrich ruchings and boas are fashionable, white and black, however, taking the lead; the latest tints of Nile, rose and heliotrope are used for opera wear.

Draped fichus, berthas and turn-down Pierrot collars of pleated lace or net are used for evening wear.

Ribbon is easily made into pleated ruchings, and is pretty with a feather edge or one of narrow lace.

A fichu collar of black velvet with ribbon ruche is composed of six parts, which form a yoke eight inches wide in front and about six inches wide at the back. It ends at the neck in a Medicis collar. A ribbon ruche is seen in front and back. On the shoulders the yoke is arranged in folds, between which are bead tassels.

With the beginning of the year appear novelties of Russian effects and modern adoptions of the first Empire; the latter being undoubtedly suggested by a recent revival of the Napoleonic studies which makes its influence felt in literature, on the stage and even in art. Thus elegant opera wraps are frequently made with Empire yokes and voluminous Renaissance sleeves. The draperies already announced are being developed into many original effects, indoor gowns being influenced by those of the peplum description. The dress skirt is becoming wider at the bottom and the sleeve also more voluminous. Bodices at the present moment are taxing all the inventive genius of the artist dressmaker by being susceptible of every conceivable novelty in trimming and material. There has never, also, existed such a rage as the present one for fur, and ermine above all. Some original designs of collarettes in real Louis XIII style—drooping at the shoulders and very flat—are becoming popular among the new modes, say the McDowell Fashion Journals. These various movements indicated in the toilettes of the mothers are closely copied by the fashions in girls' dresses, and even in the costumes of very little ones themselves.

The Spotted Veil.—"There are plenty of fads and follies nowadays," remarked an eminent physician in a recent discourse on the care of the health; "and no lack of people to take them up and run after them. Many of them are amusing and harmless, but some are so deadly in their effects that those who realize the mischief they do can scarcely keep silent. Especially is this the case when a mere caprice may result in the ruin of the eyes, or if not that, then permanent injury to the sight."

"The present fancy for spotted veils is making the oculists rich. Scores of women who never had the least trouble with their eyes are finding it necessary to take regular treatment, and are obliged to give up certain sorts of work and curtail their hours for reading and study. And the most remarkable part of all the trouble is that, after they are warned, they keep right on just as steadily as though no hint of the injurious effect of the practice had ever been given them."

"I am growing rather impatient with mature women—those who should know better. Indeed, they do know better. But women have in some way gotten the idea that the large-dotted veil is becoming, and being fashionable, it has gotten a foothold that nothing seems able to interfere with. But young women and girls, who are unaware of the trouble they are making for themselves, should be warned and counseled and, if possible, taught to care for their eyesight, and preserve it, as in most cases it can be preserved, to old age. It is only after one has suffered the inconvenience of defective vision that there comes a realizing sense of the value of good sight. Especially should the harmfulness of reading with the eyes covered with a spotted veil be impressed upon women who care to keep their eyesight unimpaired. Hundreds of women and girls habitually take paper or book and read on trains or street-cars, with these eye-destroying black spots continually dancing between their eyes and the page. Very often the reader is

forced to stop, rub her eyes and rest a moment or shake her head, as though to clear away some obstruction. This is an infallible indication of strained muscles, and should never be passed by unheeded. There are ills enough in the world that are unavoidable, and sensible people will scarcely be willing deliberately to continue a practice that means only pains and anxiety and possibly a helpless and dependent old age."—Ledger.

Gems.

Good manners and good morals are sworn friends and fast allies.

Society, if good, is a better refiner of the spirits than ordinary books.—Osborn.

Every kindness done to others is a step nearer the life of Christ.—Dean Stanley.

To keep your secret is wisdom; but to expect others to keep it is folly.—O. W. Holmes.

Experience takes dreadfully high school wages, but he teaches like no other.—Carlyle.

I have had a great deal of trouble in my life, but most of it never came to pass.—Sir Danie Wilson.

To be really cosmopolitan, a man must be at home even in his own country.—T. W. Higginson.

Love is never lost. If not reciprocated, it will flow back and soften and purify the heart.—Irving.

I mean to make myself a man, and if I succeed in that I shall succeed in everything else.—Garfield.

Thank God for sympathy; it has a wonderful power of turning keys in rusty locks.—N. Y. Observer.

Men must judge of their religion by examining its foundation; if that fail, the superstructure is perishable and worthless.—Flavel.

You traverse the world in pursuit of happiness, which is within the reach of every man; a contented mind confers it all.—Horace.

We cannot make bargains for blisses,
Nor catch them, like fishes, in nets;
And sometimes the thing our life misses,
Helps more than the thing that it gets.

I love to lose myself in other men's minds. When I am not walking I am reading. I cannot sit and think; books think for me.—Charles Lamb.

An artist that works in marble or color has them all to himself and his tribe, but the man who molds his thoughts in verse has to employ the materials vulgarized by everybody's use, and glorify them by his handling.—O. W. Holmes.

The race of mankind would perish did they cease to aid each other. We cannot exist without mutual help. All, therefore, who need aid have a right to ask it from their fellow men, and no one who has the power of granting it can refuse without guilt.—Walter Scott.

The least and most imperceptible impressions received in our infancy have consequences very important and of long duration. It is with these first impressions as with a river, whose waters we can easily turn at its source; with the same facility we may turn the minds of children to what direction we please.—Locke.

Whatever noble fire is in our hearts will burn also in our work; whatever purity is ours will chasten and exalt it; for as we are so our work is, and whatever we sow in our lives that beyond doubt we shall reap for good and ill in the strengthening or defacing of whatever gifts have fallen to our lot.—Sir Frederick Leighton, P. R. A.

Among the Latin Christian countries there were seven different dates for beginning the new year. March 1st, January 1st, December 25th, March 25th, used in two ways—first, by beginning the year nine months sooner than at present; second, by beginning it three months later—at Easter, and on the feast of the Ascension. The usage of the same country has varied at different times. In France, under the Merovingians, the year began on March 1st. The Carolingians began their year on December 25th, and the Capetians at Easter. The Romans, till Cæsar's time, began the year on March 1st, and an illustration of the reluctance to change names is seen in the fact that although the names September, October, November and December originally denoted the number of the months, they are now grossly inapplicable. The Egyptians, Chaldeans, Persians, Syrians, Phœnicians and Carthaginians began their year in the autumn, as did the Jews their civil year.

In 1751 Thomas Gray published, at the modest price of sixpence per copy, "An

Elegy Wrote in a Country Churchyard." One of these original sixpenny pamphlets, uncut, was recently sold for 74 pounds. A first edition of "The Vicar of Wakefield" fetched 54 pounds; and Grimm's German Stories, 33 pounds 10 shillings. A copy of Tennyson's poems, issued as the joint production of the Laureate and Hallam, which it seems probable belonged to the latter, realized 16 pounds 10 shillings; Cloverdale's Bible, 31 pounds, and another more imperfect copy 20 pounds 10 shillings; Report of the Challenger Expedition, 48 pounds; first edition of Wordsworth's Descriptive Sketches in Verse, 26 pounds; two proof sheets of "St. Ronan's Well," with corrections and additions by the author, 21 pounds; and the original autograph of Burns' "Queen Mary's Lament," 35 pounds 10 shillings.

YOUNG FOLKS' COLUMN.

Nutting in a Garret.

It was a rainy morning, and Becca and Justin could not play out of doors, as they had done every day of the happy week they spent at grandpa's.

Grandma proposed that they should go into the garret, to look for some half-worn clothes for poor John Henry.

The children jumped for joy, and for a merry hour they rummaged chests and boxes, and tried on queer hats and bonnets, till they were tired.

But in almost every box, among the clothes, they found nuts—hickory nuts, acorns and a few hazel nuts. "Who did put it there for us?" said little Justin, when grandma told him to put them in his pocket.

"The squirrels," said grandma. "They come in at the window and hide them here. But they lose them all, for when it comes cold the window is shut, and they cannot come in after them. Poor little squirrels!"

Just then a strong gust of wind came howling down the great chimney, another blow opened the swinging window, and whisked a wolf-skin that hung in the corner over Justin's face.

Becca screamed, "O grandma, there's a hundred Indians howling in the chimney!" Justin ran as fast as his legs could carry him, calling out, "The wolf bit me!"

How grandma laughed! Then she told them what made the noise in the chimney, and about the "wolf," till Justin shouted, bravely, "You can kit, and you can kit, but you can't bite a bit."

Then the funniest thing happened! Right in at the window leaped a pretty squirrel, ran along the great beam to the overcoat grandma was going to give John Henry, and down into its deep pocket.

A moment after, he came up with a hickory nut in his paws, whisked his pretty tail, and sat down on the beam to eat it. The children watched him, keeping very still, until he ate his second nut, and leaped from the window to the great oak tree.

"Well, I never went nutting with squirrels in a garret before!" said grandma.

"Never did me, said Justin. — Aunt Sophie, in Our Little Ones.

Harold was only five years old, and could not understand how his mother knew of all his misdemeanors. When questioned, she usually replied: "A little bird told me the tale." One day he was left alone in the nursery, and to the dismay of the family he captured a pet canary and removed every one of its tail feathers. When called to account, he said, "But I didn't want birdie to tell tales on me!"—Youth's Companion.

Bobby—Papa, who was Peter the Great? Papa—That's a nice question for a little Sunday school boy to ask. Why don't you study your Bible?"—Judge.

"Say, mister," said a little Fresh Air child, as she watched the cattle enjoying their cud, "do you have to buy gum for all them cows to chew?"

DOMESTIC ECONOMY.

PIE CRUST.—If very juicy pies or tarts are to be made, break a couple of eggs into the plate containing the rolled out paste, whirl them around so that the entire inside portion of the crust is wet. When baked, this will form a semi-impervious coating, which will not soak through for some time. More ordinary pie crust can be made with half lard and half butter.

RICE MUFFINS.—Add to two teacupfuls of cold boiled rice, half a pint of milk and three eggs; sift together one pint of flour one and a half teaspoonfuls of Royal baking powder, one-tablespoonful of sugar and one teaspoonful of salt, and mix with the rice, beating all into a smooth batter. Grease muffin-pans and fill each mold two-thirds. Bake in hot oven.

BLANC MANGE.—One quart of milk, one-half cup of sugar, eight even tablespoonfuls of corn starch, one-quarter teaspoonful of salt. Put the milk on to boil in a farina boiler. moisten the corn starch with a little cold milk, then add it to the boiling milk, and stir until it thickens; add the sugar and salt, take from the fire, pour into custard cups and set away to harden. Serve with cream sauce. This will serve five or six persons.

PASTRY.—It is a fine art to make pastry. Just why this is so would be difficult to say, for some persons who are otherwise wretched cooks make the most admirable paste of all sorts. They seem, as one might say, to take naturally to it. There are others, veteran cooks, whose pastry is almost as indigestible as paving-stones. Give them all the formulae, recipes and directions imaginable, and the result is the same, until they get utterly discouraged and give it up. The secret of good pastry, if it can be said that there is a secret, consists in dexterous handling and working in a cool place, for it is a very difficult matter to make really first-class pie crust in a very hot room.

FLORIDA MUFFINS.—One pint of white corn meal, half a teacupful of fine breakfast hominy, one pint of milk, half a teacupful of boiling water, three tablespoonfuls each of butter and sugar, one teaspoonful of salt, three eggs and three teaspoonfuls of Baking Powder. These ingredients will suffice for two dozen muffins. Put the hominy in a stew pan, and set in another pan containing hot water. Cook for half an hour, and at the end of that time add the salt, sugar and butter. Heat the milk to the boiling point and pour it over the cornmeal. Beat well and then beat into it the hominy mixture. Set away in a cool place. This is to be done in the evening if the muffins are intended for breakfast. In the morning sift the baking powder into the mixture and add the eggs, yolks and whites beaten separately. Bake in hot gem pans and a hot oven.

PUFF PASTE.—The finest of puff paste is made with butter ad lib. Take one pound of butter, about two or three teaspoonfuls of ice water, or what is much better, very finely scraped ice, and just sufficient flour to make it possible to handle it. Make a paste by pressing the butter into a flat piece, sprinkling flour over it, pressing it out again, then fold it over and continue pressing it until sufficiently mixed. A teaspoonful of baking powder should be added to a cup of flour, and this should be used first. After that only as much flour as is absolutely necessary. Some cooks wash the butter to remove a portion of the salt, but this is not necessary, unless the butter is very salt. Use a rolling pin which has been kept for an hour or so in the ice box, but not allowed to get wet. As soon as paste is sufficiently rolled, cut it in required shape, fit it over the plate or dish, and put into the oven immediately.

An advertised series of entertainments included "A Chalk Talk by a Reformed Milkman."—Clinton Courant.

Over 1000 series of Greek coins, issued by independent cities, are known to exist.

Highest of all in Leavening Power.—Latest U. S. Gov't Report.

Royal Baking Powder
ABSOLUTELY PURE

PATRONS OF HUSBANDRY.

Random Thoughts.

By A. P. ROACHE, W. M. S. G. of California.

The muscles restricted, by all toil afflicted,
The mind is evicted, and life but a bore.

"Difference of opinion is no crime," yet there never was a battle fought, never a war waged, never a martyr doomed, never a victory gained, nor a right sustained, that was not the result of difference of opinion. How many more centuries of civilization will be required to drive aggressive animalism from the constitution of man? for let it not be forgotten, there are many people to-day who would, on account of difference of opinion, as quickly burn one at the stake as were the "Witches of Salem," but for a wholesome fear of the law.

What is the difference between the man who says, I will sell you that for so much, I will allow you so much for the other; and he who says, how much can I have for that, how much will you give me for this? Oh, no great amount, only the difference between affluence and penury. But then, who cares for filthy lucre!

Tulare and San Jose Granges have selected their county deputies. Will not all other granges send in the names of those desired to act in a similar capacity in their vicinity?

If Bro. Daniel Flint don't cease telling in public what the grange has done for him and be honest enough to occasionally tell what he has done for it, I shall expose the whole matter in print. Beware, brother.

It is sincerely hoped that the Hon. Past Master will fall in with the good example of Past Master Steele, who favored us with "sure enough seed thoughts," and graced the pages of the RURAL with thoughts gleaned from life and experience bought at the cost of a lifetime of labor.

The Hon. Secretary of Agriculture must have held a conversation something like this: May it please your honor, and you, gentlemen of the jury: You see our U. S. Treasury is really in a precarious condition, and retrenchment must begin somewhere in order to fill its collapsed wallet. Of course we can't tax bonds, franchises or incomes, because those who hold such things are our own best people. Besides, they are so united and so able to resent anything that would have a tendency to attack their interests that it really can't be done. So we must look in some other direction. Oh, yes, I have an idea, a bright one, too; just the thing. There are those pack-mules, the farmers. We might just saddle some more weight on them and cut down their rations at the same time.

Yes, but will they permit it? Certainly, for aside from a little squirming and bucking they will have to stand it, as they are poor devils, unorganized and can't help themselves. Besides, agriculture ought to stand its fair share of the burdens these hard times, and even a little more, its back is so broad and it is accustomed to such things. It has long had a "heavy pull" at the public crib and has been so protected and pampered and helped and petted that, like all pets, it has been spoiled. Its members have become so presumptuous as to question even our acts and utterances. Why, they even demand certain things. They actually want "to know," you know. All the same we will just lop off that little old fifteen thousand a year in every State that has fattened the Agricultural Experiment Stations for the sole benefit of agriculture, and that everybody else has had to help pay for. It will save quite a respectable sum every year, and a dollar saved is a dollar earned, you know.

What do you think of that, farmers? We are to be charged not only with the extravagance of the past, but compelled to make good the deficit of the present. If there is any danger that the Committee on Agriculture will be as derelict in their duty toward the Experiment Stations as is the Secretary, the ponderous weight of a petition signed by every citizen of the United States should be brought to bear on that committee and they instructed to prevent so great a wrong against agriculture as would be the neglect and final dissolution of the Experiment Stations, for be it remembered that whatever injures agriculture injures every individual in the nation. Do you doubt this statement? Then observe a convincing fact that proves to all their dependence on agriculture. Imagine the absolute annihilation of every agricultural product down to its minutest ramification and tell me, pray, on what would all animals, including birds and men, subsist? On money? Hardly. On

commerce? There would be need of none. On manufacture? Of what? Elucidate this problem, you who feel so slight an interest in agriculture; note how almost worthless would be all else without it, and then know that to injure this basilar agent of all our greatness is a wrong the nation cannot afford.

Lecturer's Notes.

By S. GOODENOUGH, Lect. S. G. of Cal.

"Free coinage of gold and silver, and the duty of Government to provide an ample legal-tender medium of exchange."

The above is the general topic for subordinate grange discussion in February. I recognize the fact that it is a "ticklish" subject, and that the discussion of it will be likely to step on some very tender corns of prejudice, or butt against some very stubborn, dogmatic opinions. And as this topic is suggested for discussion in the grange, and not in the RURAL PRESS, I will endeavor to confine myself to the simple statement of a few facts and the offering of some suggestions that may aid in forming safe and sound opinions. If my individual convictions are wanted I shall be ready to give them within grange gates.

Why do we need a medium of exchange? Simply because we are long past the stage of barter. That was well enough in the simple transactions of primitive times, when an Indian, for instance, desired to exchange a certain number of skins for a horse or some other coveted article. But now the volume of trade has become so immense, rising high into the billions of dollars annually, that the direct exchange of article for article is utterly impossible. Hence one desires to convert his goods or his products into some recognized representative of value with which he can procure other desired goods or products, it may be from across continents or oceans, and pay the transportation charges. Hence a medium of exchange, called money, has been devised.

It is not needful here to trace the considerations which led to the selection of gold and silver as the basis of exchange. It will be enough merely to mention that it grew to be deemed desirable that the material used for money should be durable, have intrinsic value, and be limited in quantity. Gold and silver about equally fulfill these conditions. Hence their intrinsic value came to be regarded as greater than any other metals, especially as, in addition to their use as money, they are pre-eminently fitted for use in the arts and sciences where only the purest metals can be employed. If one has a gold or silver coin, he has something of value, though the government that minted it has become defunct. The geography of the world might be radically changed without materially affecting the value of the gold and silver in circulation as money. U. S. bonds might become worthless, but not its dollars and its eagles. Hence a reason why a coin currency is preferable to a paper currency.

The experience of centuries has determined that these two metals will never be obtained in quantities sufficient to make too much money. In fact, not enough of both has ever been produced fully to meet the requirements of a medium of exchange, and it has been found necessary to add paper money, or bills of exchange, to the supply, in order to meet the demand of the ever-increasing volume of trade.

The ratio between gold and silver has been fixed in this country at 16 to 1. Why? Because it has been ascertained that the production of silver is about 16 times as great as that of gold. In other words, there are in existence to-day, approximately, 16 times as many tons of silver coin and bullion as of gold coin and bullion. Hence one ounce of gold has come to be held equal in value to 16 ounces of silver. The ratio adopted in other countries does not vary greatly from that adopted here. The maintenance of the parity of the two metals at this ratio has never been difficult, under equal treatment, because of their relative quantity.

How much gold and silver is there now in the world? According to the U. S. Mint Report, the world's production for the 400 years since the discovery of America (from A. D. 1493 to 1893) was:

Gold.....	\$8,204,303,000
Silver.....	9,726,072,500
Total.....	\$17,930,375,500

Between one-half and two-thirds of this amount has been used in the arts and sciences. A great deal has been lost. Not more than 40 per cent of it is now in existence.

In the last hundred years the production in the United States has been:

Gold.....	\$1,969,692,976
Silver.....	1,158,831,869
Total.....	\$3,128,524,845

The total amount of gold and silver in use as money in the world at the present time is, according to the Director of U. S. Mint, as follows:

Gold.....	\$3,727,018,869
Silver.....	3,820,571,346
Total.....	\$7,547,590,215

This is approximately \$.09 per capita for the population of the world—\$.51 per capita of gold, and \$.58 per capita of silver. The distribution, however, is not equal; it is highest in France, where it amounts to about \$42 per capita. In the United States it amounts to \$18 per capita; Great Britain, \$17; Germany, \$13, and Russia, \$2.50. Some countries have even less. It is evident, therefore, as more than half of the gold and silver in existence is coined and only amounts to a little over \$5 per capita, that if

FREE COINAGE

Of both metals was adopted, it would not result in too much money; it would necessarily be less than \$10 per capita. Even if it was as unequally distributed as now, it would not result in a glut of money in any nation.

But could the parity of the two metals be maintained at the ratio of 16 to 1 under free coinage? I will let a few facts answer the question. Silver should be worth about \$1.29 per ounce, in order to be at a parity with gold as bullion. For 20 years previous to 1873, at which time silver was demonetized, it did not fall below \$1.29 per ounce, and the same would be true if we were to trace its history back to a much earlier date. This strongly intimates that free coinage, with full legal tender status, serves to maintain the parity of silver with gold. This view is strengthened by the further fact that, for 20 years after 1873, silver declined steadily from \$1.29 per ounce until, in September last, it had dropped to 75 cents per ounce. This was a drop of more than 41 per cent in 20 years, under demonetization and restricted coinage. The lesson of these two facts is unmistakable.

Has the decline in the price of silver during the past 20 years affected the price of other products? In answer I will again simply give facts. The price of wheat in 1872, the year before the demonetization of silver, was \$1.47 per bushel. It steadily and regularly declined, along with the decline of silver, until in the same market, in September last, the price was only 68 cents per bushel. Likewise cotton, which in 1872 was worth \$19.30 per hundred, declined to \$7 per hundred in September last. Let these two staples be considered too narrow as the basis for a general conclusion, it will be sufficient to add that a careful computation, based upon 45 principal commodities, shows a decline in the period from 1874 to 1892, of from 102 to 68. This shows, at least, a remarkable sympathy between the bullion prices of silver and the prices of all the principal products of industry, and suggests the desirability of maintaining the price of silver, if possible. The previous illustration strongly intimates that the free coinage of silver upon a full legal tender basis would have fully maintained the bullion price of silver, as it had done for the entire period of our national history up to 1873.

At this point I fancy I hear some saying:

"I do not quite understand. My silver money appears to be just as good as my gold money; if I go to town to make purchases, I can buy just as much in the way of family supplies with twenty silver dollars as I can with a double eagle." Yes, you can. The difference I have indicated does not appear in small cash transactions.

But I will state a case, one that is not uncommon, that will make it plain. Suppose that in 1873 you mortgaged your farm to secure a loan of \$5000, payable in gold coin. If you gave such a note it was almost certainly written payable in gold coin. Suppose, further, that you have been able to do no more than meet the interest annually, getting the note and mortgage renewed from time to time as it became necessary. You still owe the original \$5000, but now you must pay it. You are a wheat-grower, we will say. In 1872, with wheat at \$1.47 per bushel, you could have paid the \$5000 loan with 3400 bushels of wheat. But now, with wheat at 68 cents per bushel, it will take 7353 bushels to pay the same loan. This makes it very clear that something calamitous has happened to you when it takes 2½ times as much of your staple product to pay a given indebtedness as it did 20 years ago. Now, if free coinage would have maintained silver at a parity with gold, at the ratio of 16 to 1, and if the maintenance of the price of silver would have maintained the prices of the products of industry in general, the continuance of free coinage would have been a boon to the farmer. It is for you, fellow patrons, to discuss in your granges and judge as to the probability of the effect indicated in the foregoing, and determine, at the same time, whether it will be for your advantage emphatically to demand the free and unlimited coinage of gold and silver upon equal conditions.

If you ask why the repeal, in 1873, of free-coinage laws relating to silver, which had been operative since the institution of our Constitutional Government, coupled with similar action by other nations, operated to produce a decline of over 40 per cent in the value of that metal in 20 years, the answer is very simple: It reduced the demand for silver by nearly one-half. It is a well-known law that when the demand for any article falls off the price declines accordingly.

I do not forget that there are other factors to this problem, but I risk nothing in affirming that they are all subordinate—that the one under discussion is paramount.

(Concluded in next week's Rural.)

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Sworn to before me and subscribed in my presence, this 6th day of December, A. D., 1893.

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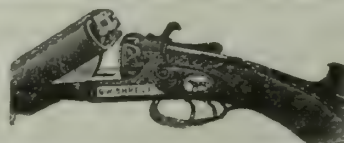
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AGRICULTURAL NOTES.

CALIFORNIA.

Butte.

Oroville Register: While farmers and land-owners are casting their eyes and stretching their ears in every direction in search of something more profitable than grain and hay, they ought to examine the merits of this Mexican grass with a name something like the great iron founder's. Canaigre is a plant with a beet-like root and a rhubarb-like leaf. The root contains the same acid that oak bark does, and is therefore very valuable for tanning leather. For this purpose canaigre roots are worth \$10 a ton, or twice as much as sugar beets. You can dry the roots and ship them East or to Europe. The cultivation of this plant will pay from \$30 to \$50 an acre, and it will grow in a climate so dry that Sahara would be rainy alongside of it. It is found wild in Arizona, New Mexico, Lower California and in parts of Mexico. Its use will save oak and hemlock forests and will enrich the sagacious man who plants it. Try canaigre! It will pay better than potatoes, corn or clover, will bring in more money than a note on good interest, and make your land more valuable than when sown to alfalfa or planted to beans. Do not fear there will be too much of it to sell or that the price will go lower than the bottom of a well.

Contra Costa.

Contra Costa Gazette: Some three years ago the late Senator Stanford, after a careful investigation of different localities with a view of ascertaining the best point for the storage of wine, where it would mature under the most favorable conditions, selected Port Costa as in his opinion fully answering all requirements. A winery was accordingly constructed there, and in April, 1893, about 200,000 gallons of the vintage of his La Vina vineyard, comprising dry wines and fortified wines and brandies, were stored there. The Senator did not live long enough to fully realize the fruition of his experiment, but the result is reported to be entirely satisfactory.

Kern.

Delano Courier: Mr. Foss, who has charge of the Semi-Tropic Orchard and Vineyard Company's 320-acre tract 20 miles southwest of Delano, is preparing to set out about 10,000 trees this season. Owing to the fact that planting was continued till a very late date, many of the trees failed to make a satisfactory growth, and such will be replaced with new ones.

The Kern *Californian* tells how a farmer up that way catches jackrabbits: "In the wire fence he has cut a tempting hole, and hanging down in front of it on the inside is a swinging gate of iron wire screen with a half-inch mesh. The rabbit, attracted by this oasis of greenery in the desert, travels along the outside of the fence until he comes to the hole. He looks through the meshes of the screen, pushes the light swinging door inward and enters into an enclosure covered at the sides and top with ordinary wire netting. The door swings back into place and bunny is trapped. Another swinging door lets the rabbit into a similar enclosure, where he is easily captured. If such traps were used on every ranch in the valley, there would be a steady drain upon the rabbit population. It costs but little to make, and once up, the trap is always ready for the venturesome rabbit without any further attendant expenses being attached."

Kings.

N. W. Motheral, Horticultural Commissioner for Kings county, declares the Osage orange to be the natural home of the scale bug, and is ordering all hedges thoroughly sprayed or cut down.

Mendocino.

Ukiah Dispatch: Superintendent Swortfinger, of the Fruit Ranch, left at our office this week a "cut" from a two-year-old French prune tree, one season's growth, which measures nine feet and six inches. The tree which shows this remarkable growth is only one of many planted on red land on the east side of Little Lake valley.

Los Angeles.

A Pomona correspondent writes as follows to the Santa Ana *Blade*: Pomona orange-growers are a good deal troubled because it is rumored that some members of the local association are selling their fruit to outside commission men. There is no doubt that the commission men are making desperate efforts to get at weak-kneed members of the associations by offering tempting prices just now. In that way they hope to break up or demoralize the co-operative movement, but their plan is so transparent that none of the growers should give them any assistance. Their only safety is to stand together.

The olive nurserymen of Pomona are busy getting trees ready for shipment. Over 70 men were employed in and about the olive nurseries here last week. A small lot of young olive trees were sent to Cape Town, South Africa, by Howland Bros. last week.

Pomona Progress: "The average contract price for good, careful work in an orange or lemon orchard," said a man who has worked in orchards in southern California for years, "is \$15 an acre for a year. Of course there are some who will contract the work for a dollar or two less per acre than that, but you know there are all kinds of ways to look after and care for any orchard property. I am talking about the best ways. Some young orange and lemon orchards are in such heavy soil, and have such peculiar appliances for irrigation that a man will not get even boy's wages by contracting their care for a year at \$15. Several owners of orchards here pay \$18 per acre yearly, and one or two pay \$20 an acre. A contractor

of work in a citrus orchard has not only the care of the irrigation, the cultivation of the soil and the keeping of weeds free from the place, but, if he is conscientious and worthy of his hire, he should take upon himself all responsibility of injury by gophers and rabbits, and depredations by persons. He looks after the place as carefully as if he owned it himself."

Orange.

At a meeting of the Tustin Fruit-Growers' Association the following bids for picking, packing and placing the fruit in the cars were received: C. B. Jeffries of Los Angeles, 16 cents per packed box; Y. S. Armstrong of Los Angeles, 32 1/2 cents; Willard Bros. of Tustin, 17 1/2 cents per box of 68 pounds, as weighed into the packing house, or 19 cents per packed box loaded on the cars; Collins & Co. of Santa Ana, 19 cents per packed box loaded on the cars. The bid of C. B. Jeffries, of Los Angeles, was accepted by the Board of Directors, with the stipulation that Mr. Jeffries should, as far as possible, employ his help from Tustin.

The Santa Ana *Blade* reports that Mr. J. F. Rehm has invented a machine for pitting apricots, peaches, etc., that is considered to be better than anything heretofore made in the same line. The fruit is fed into a hopper and tube which carries it by gravitation on to the edge of a pair of revolving circular knives, which cut the meat to the stone. Passing through the revolving knives the fruit is forced against the separator or pitter, which is a V-shaped knife which disengages the stone from the meat. The latter drops down on one side and the former on the other. By an ingenious and simple arrangement of springs the knives are so adjusted that a stone of more than average size is passed through without causing stoppage or difficulty.

Anaheim Gazette: It costs about 32 or 33 cents per box to pick, handle and box oranges. Paramore & Smith, who are now engaged in handling the crop of the Santiago Association, get 33 cents—the box material, nails and paper being furnished by the association and charged to the contractors. The Tustin growers supply the material, as do the Santiago growers, but do not charge it to the contractor, who is paid only for the work. The Tustin contractor gets 16 cents per box. One great advantage of the co-operative plan is the uniformity of the condition in which the fruit goes to market, and the thorough system of grading, and another is the guarantee that no frozen or damaged fruit will be offered by the associations.

Santa Ana Blade: David Yorba has sold 350 wethers to McFadden & Brown for \$3.25 a piece. The same sheep last year at this time were worth \$3.50. Now they are a year older and have the season's wool on them besides. It is, in fact, impossible to sell wool this year, and the sheep men consider themselves lucky to be able to sell their stock at almost any price.

The manager of the Santiago Orange-Growers' Association, at the last meeting of the board, made an estimate of amount of oranges in the groves in the association, and the different varieties, and gave them as follows:

	Boxes.
Mediterranean Sweets.....	12,640
Navels.....	3,694
Seedlings.....	10,585
St. Michaels.....	626
Malta Bloods.....	20
Late Valencias.....	300

Total.....27,865

Or over 93 carloads, being fully 90 per cent of the oranges in the district about Santa Ana.

Placer.

At its regular meeting, last Saturday, the Placer County Fruit-Growers' Association determined to organize a County Fruit Exchange. To carry out this determination, the president appointed the following committees to act: From Auburn and Colfax and the north—Capt. McCann, F. de Gomez and Geo. Hill; Newcastle—J. F. Madden and T. W. Madeley; Penryn—P. W. Butler, Fred C. Miles and Major G. H. Turner; Loomis—J. N. Barton and J. Coppin; Roseville—Mr. Bedell Senior; Lincoln—James Croly, Fred C. Crosby and A. B. Crook. A final meeting will be held February 10th.

Riverside.

The Riverside Fruit Exchange is shipping 15 carloads of oranges daily.

Santa Barbara.

Santa Maria Graphic: Messrs. Thos. Boyd and J. F. Goodwin have completed the enumeration of the fruit trees of the valley, and it may be stated, in round numbers, that there are 350,000 trees in the valley. Of this number, fully 20,000 are walnuts. When all these trees come into full bearing the yield of the valley will be enormous, and the number of new trees is increasing each year.

Santa Maria Times: The separator is bound to come into general use among dairymen who are isolated from creameries. All who use it say that it pays well, and that calves fed from separator skimmed milk do better than in the old way, and that a small separator will pay for itself every year in butter-fat saved. There are some three or four already in use here and more will be ordered soon.

Lompoc Record: Ex-Secretary of State Thos. Beck has made arrangements to plant out 5000 apricot trees on the Blackburn tract, on the Santa Rita rancho, and sufficient hops, to test the soil and climate for this last production. If the hops prove a success, from 50 to 100 acres will be planted as speedily as possible. This area will require the services of 400 hands in the picking season.

Santa Maria Times: Two months ago it

looked like there would be a surplus of hay to carry over this season, but from present appearances it will all be used. Feed is very late, and coming slowly. Our people have learned that it does not pay to starve their stock, and they are feeding more than before. The railroad has taken some and will take more. Hay is getting to be more and more of an item every year and it will henceforth be one of our profitable crops.

Santa Cruz.

The fruit growers of Soquel have taken steps to organize a local fruit exchange to co-operate with the State Exchange recently organized.

Watsonville Pajaronian: The beet seed for planting of 1894 is at the factory, having arrived last week. There will be a big rush for it before long. Over 12,000 acres have been contracted, and to plant that amount of land a vast amount of seed will be required. That acreage, if in one tract of land would be four miles wide by five miles long—20 square miles of beets.

Watsonville Pajaronian: San Jose is the terminal point for shipments from this valley, and the freight to that point—about \$30 per car—has to be prepaid. Shippers claim that the local freight to San Jose—a haul of 50 miles—is as great as paid on the through rate for the haul from San Jose across the Sierras to Truckee. The trouble of re-billing from San Jose and the added expense of local freight to that point has seriously affected the sale of fruit and spuds to Eastern buyers. A number of good sales have been lost thereby. The increased growth of Eastern fruit shipments is to the gain of the railroad company; and if they would give each fruit-shipping point terminal rates for East-bound fruit their carrying traffic would be wonderfully increased, and the fruit packers of California would reach more markets and fruit culture would receive a wonderful stimulus in California. The injustice done Watsonville in this matter can and should be remedied. We suggest that a committee of fruitmen lay the matter before the railroad officials.

Pajaronian: One hundred and seventy carloads of apples have been shipped direct from this valley to Eastern points since the opening of the season, and a large number of carloads of Pajaro apples were repacked in San Francisco and sent East. The shipping season is not yet over, and several carloads have been forwarded this week.

Sonoma.

Farmer: Will Leggett says that hop men have no reason to complain about the heavy rains that have covered their yards with wash dirt and renewed their productivity. In his estimation the ideal soil for the hop is a deep sediment that is enriched every few years by the fresh deposits resulting from overflow.

Sutter.

Yuba City Independent: Our further observation is that the fields average just as well, all things being equal, when harvested as when headed and thrashed. Nevertheless, there are three serious objections to the combined harvesters—their great cost, the short time they will run without costly repairs, and the fact that they foul the land and scatter the seeds of obnoxious plants. The first two of these objections may be partially overcome in time. The present selling price is out of proportion to other machinery of similar kind and will probably be reduced. A header that will cut 30 acres a day can be bought for \$250, and a separator that will thrash 1000 sacks a day can be bought for \$600. In the same proportion a harvester ought to be sold for less than \$1000. The second objection can be overcome by more careful construction. But the last objection will remain as long as tares grow among the wheat. We believe that in general a cleaner job of cutting can be done with a harvester than a header, but if the grain be light and thin on the ground, it is more expensive than heading and thrashing. If the grain be heavy, it can be put in the sacks cheaper with the harvester.

C. N. Tharsing intends to plant 10,000 young fruit trees for M. A. Marcuse on his ranch near Tudor, Sutter county, this spring.

Tulare.

C. J. Berry in letter to Visalia *Delta*: I am often surprised at the fact that all the asparagus used in Visalia comes from the Sacramento district. It is one of the finest dishes that we get from our garden. It takes two years to produce the first crop, but after that it will furnish a crop every year. It does not die out, and if you ever want to destroy it, you will always wish you had put your bed of asparagus in the spot that you intended it to stay. Procure plants one or two years old. Set them in a furrow about two feet apart. Spread the roots out nicely. Don't let them lie in the sun before planting. Cover the plants about four inches deep. It is advisable to make the bed as rich as

possible. The ground cannot be too rich for asparagus. Keep the weeds out the first year and let the young plants grow. The second year some can be cut. The third year and every year thereafter it can be cut through the entire season.

About 440 acres of new ground will be planted to fruit trees this season in the section of country tributary to Visalia. At least three-fourths of the land will be devoted to prune trees.

Major C. J. Berry will plant 20 acres of foothill land, east of this city, to olives this season.

Yolo.

A Winters correspondent declares that 500,000 trees will be planted in the Capay canyon this season.

A Guinda correspondent says that the orchard planting this season will far surpass that of any previous year.

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He who forgets his own friends merely to follow those of a higher degree is a snob.—Thackeray.

The devil knew not what he did when he made man politic; he crossed himself by it.—Shakespeare.

Do not accustom yourself to consider debt only as an inconvenience; you will find it a calamity.—Johnson.

No true and permanent fame can be founded except in labors for the happiness and good of mankind.—Charles Sumner.

If your eye is on the Eternal your intellect will grow, and your opinions and actions have a beauty which no learning or combined advantages of other men can rival.—Emerson.

In troubled water you can scarce see your face, or see it very little till the water be quiet and stand still; so in troubled times you can see little truth; when times are quiet and settled, then truth appears.—Selden.

I have sometimes thought if the sun were an intelligence he would be horribly incensed at the world he is appointed to enlighten; such a tale of ages, exhibiting a tiresome repetition of stupidity, follies and crime.—John Foster.

If he who has little wit needs a master to inform his stupidity, he who has much frequently needs ten to keep in check his worldly wisdom, which might otherwise, like a high-mettled charger, toss him to the ground.—Scriven.

How little our knowledge of mankind is derived from intentional accurate observation! Most of it has, unsought, found its way into the mind from the continual presentation of the objects to our unthinking view. It is a knowledge of sensation rather than of reflection.—John Foster.

This man, we may say, became morally great by being in his own age what in some other ages many might have been, a genuine man. His grand excellency was this, that he was genuine. As his primary faculty, the foundations of all others, was intellect, depth and force of vision, so his primary virtue was justice, was the courage to be just.—Carlyle on Goethe.

Do good, and leave behind you a monument of virtue that the storms of time can never destroy. Write your name in kindness, love and mercy on the hearts of thousands you come in contact with, year by year, you will never be forgotten—your name, your deeds, will be as legible on the hearts you leave behind as the stars on the brow of evening. Good deeds will shine as the stars of heaven.—Chalmers.

Our life is shaped, our character and destiny determined, partly by things which we can control and partly by things which we cannot. It is of the former class that we hear most from our moral and religious teachers. Teachers of morals and religion must appeal to men as free, must plead with them to do certain things and to abstain from certain other things, both confessedly within their power.—President Warren's Baccalaureate before Boston University.

Amount of Paint Required for a Given Surface.

It is impossible to give a rule that will apply in all cases, as the amount varies with the kind and thickness of the paint, the kind of wood or other material to which it is applied, the age of the surface, etc., says the *Clay Journal*. The following is an approximate rule: Divide the number of square feet of surface by 200. The result will be the number of gallons of liquid paint required to give two coats; or divide by 18 and the result will be the number of pounds of pure ground white lead required to give three coats.

Electricity as a Rain-Maker.

M. M. A. Badouin has stated before the French Academy of Sciences that as far back as 1876 he obtained rain by drawing electricity from the clouds by means of a kite. To prove that this was possible, M. Badouin conducted an experiment on October 5th last, at about 5:15 P. M. He obtained contact with the clouds situated at an estimated distance of 1300 yards. At that moment, it is stated, a local cloud was noticed and several drops of rain fell. As soon as the contact ceased, which was effected by hauling down the kite, the normal state of affairs was resumed at 5:30 P. M.

—The surveyors under F. G. Brooks have completed the line from a point on Owens river, Inyo county, to the Alabama hills, a distance of about 21 miles.

A Minneapolis Miracle.

THE REMARKABLE CURE OF J. B. WHITE OF THIS CITY.

A Cripple for Two Years, Pronounced Incurable by Physicians and Given up by His Friends to Die—How He Obtained Relief and Became a Well Man—His Daughter's Marvelous Improvement.

(From the Minneapolis Journal.)

"Precious is the panacea that cures when hope is gone and medical advice pronounces the death sentence—'incurable.' How terrible it is to think of leaving this sweet life before the allotted years of man's time here on earth are spent." Thus spoke J. B. White of 1201, 3d St., N. E., last night to a *Journal* reporter. Mr. White has been much talked about of late, and the following conversation explains why:

"I am a native of Shediac, New Brunswick, and of French descent. I have been in Minneapolis for many years. I am now 60 years old. I fell from a building two years ago and broke my thigh, besides injuring myself internally. The doctors could do nothing for me but let the bones grow together as best they could. When I was able to walk on crutches I came near dying from the complication of troubles that had set in after the fall. For one year and a half I walked on crutches, striving in vain to find some relief from the misery I felt night and day. The worst part of my afflictions was that I could not eat anything. If I could have taken nourishment and kept it down I could have stood the pain better. I had four doctors and kept taking all sorts of medicines. I had to stop all of them or I would have been a dead man. I have enough bottles left to start a drug store. I would be troubled so with headaches, and my hips would pain me so that I often thought I should go crazy. I was so emaciated that there was nothing to me but skin and bone. Last summer I felt as if I was nearly dead. My kidneys then began to bother me. I got so I could not sleep only at intervals. Finally I gave up in despair. One day I was sitting out on the porch. It was a beautiful, sunny day. The singing of birds and the odor of flowers set me to thinking of my childhood days. From that my thoughts reverted to the little French weekly paper, *Le Moniteur Acadien*, that we got, and I thought I would like to read it and see how things were at my old home. I told my wife to give me the last number. She brought me the one that came that morning. The first thing I saw was a long article about the miraculous cure of a cripple. I read on and on, becoming more interested than ever. The patient described in the article said that Dr. Williams' Pink Pills for Pale People cured him and they would cure others. The story aroused my interest and I induced my druggist to send for them. I did not expect relief right away, but soon they made the headache pass away. After taking them some days I could eat. People laughed at me when I began to take the pills, telling me I was taking so much candy. But the day I threw away the crutches they thought different. I am now well and hearty as a young man of 25."

At this juncture his married daughter, Mrs. N. White, came into the store. "There," said he, "is another case. She has tried them, too." The reporter thought it would be a good idea to speak of her case also, since it was a woman's. Mrs. White married a man of the same name as her father, so this accounts for the same name.

"The doctors," she said, "told me I had uterine trouble. I was in a miserable condition. Nothing that I took could alleviate the pains I would feel in my limbs and abdomen. I often had fluttering of the heart and frequent weak spells. I would eat, but it would do me no good. I could not sleep. I was in misery and despair. My father took Dr. Williams' Pink Pills, and his improvement was so rapid that I thought I would take them too. At first I felt worse, and then I began to mend so rapidly that I was astonished. I have taken seven boxes and am now nearly well. I can do my own work and can sleep and eat well. In the mornings I feel refreshed after a night's rest."

August Grotesend, who keeps the Germania Drug Store at 1011 Main St., N. E., corroborated what Mr. White had said above in regard to his condition, saying: "I have sold a great many since these cures. Some of the lumbermen going in the woods have taken half-dozen box lots of these pills with them. They certainly have done a wonderful lot of good and should have the entire credit of the cures."

On inquiry, the *Journal* reporter found that these pills are now on sale at the various wholesale drug houses of Minneapolis and St. Paul and are meeting with a good sale, but not as fast as they will sell as soon as their merit is fully known. He also found that they were manufactured by Dr. Williams' Medicine Company, Schenectady, N. Y., and Brockville, Ont., and the pills are sold in boxes (never in bulk by the hundred) at 50 cents a box, or six boxes for \$2.50.

Dr. Williams' Pink Pills are a perfect blood builder and nerve restorer, curing such diseases as rheumatism, neuralgia, partial paralysis, locomotor ataxia, St. Vitus' dance, nervous head-

ache, nervous prostration and the tired feeling therefrom, the after effects of la grippe, influenza and severe colds, diseases depending on humors in the blood, such as scrofula, chronic erysipelas, etc. Pink Pills give a healthy glow to pale and sallow complexions and are a specific for the troubles peculiar to the female system; in men they effect a radical cure in all cases arising from mental worry, overwork or excesses of any nature.

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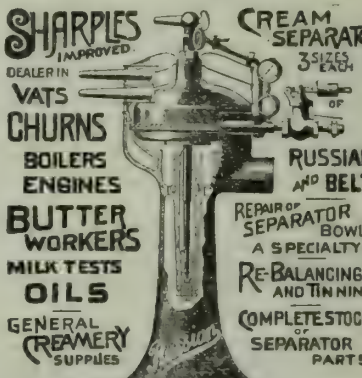
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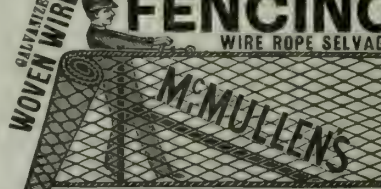


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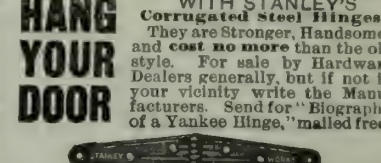
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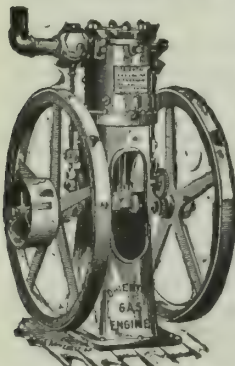
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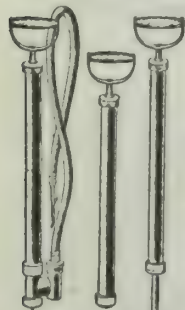
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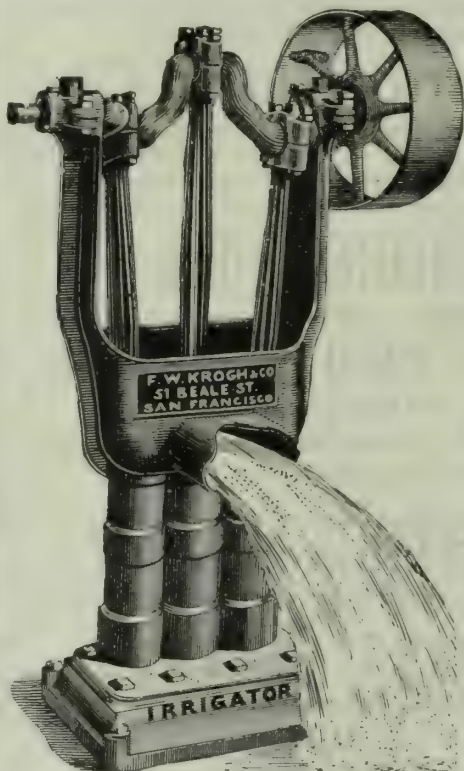
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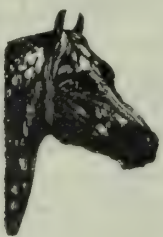
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- 2d—Because it is the Cheapest. One bottle mixed with double its quantity of oil is then as strong as most liniments.
- 3d—Because you don't have to wait for it. You can buy it anywhere.
- 4th—Because it ALWAYS GIVES SATISFACTION.

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ESTABLISHED 1860.
AMERICAN AND FOREIGN PATENT SOLICITORS
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SAN FRANCISCO, CAL.

Guano Fertilizer!

PLAIN AND NITROGENOUS
SUPERPHOSPHATES.

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Complete and Special Fertilizers

FOR ALL KINDS OF

Fruit, Grain, Sugar Beets, Vegetables, Etc.

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HAYWARD'S SHEEP DIPS

Hayward's famous Paste and Liquid Dips received the Highest Award at the World's Columbian Exposition, also the Prize Medal at the California State Fair. Dips from all over the world were exhibited at Chicago and practical sheep men pronounced Hayward's the best and most effective medicine for the cure of scab and general benefit to wool.

CHRISTY & WISE,

General and Sole Agents for the Pacific Coast,
Office—Fifth and Townsend Streets,
San Francisco.

Porteous Improved Scraper

Patented April 3, 1883. Patented April 17, 1888.



Manufactured by G. LISSENDEN.

The attention of the public is called to this Scraper and the many varieties of work of which it is capable, such as Railroad Work, Irrigation Ditches, Levee Building, Leveling Land, Road Making, etc.

This implement will take up and carry its load to any desired distance. It will distribute the dirt evenly or deposit its load in bulk as desired. It will do the work of Scraper, Grader, and Carrier. Thousands of these Scrapers are in use in all parts of the country.

This Scraper is all steel—the only one manufactured in the State.

Price, all Steel, four-horse, \$400; Steel two-horse, \$210. Address all orders to G. LISSENDEN, Stockton, California.

CANCER CURED

WITH SOOTHING BALMY OILS.

WE SUCCESSFULLY TREAT

Cancer, Tumor, Catarrh, Piles, Fistula,
Eczema and all Skin and Womb Diseases.

CANCER of the nose, eye, lip, ear, neck, breast, stomach or womb; in fact, all diseased internal and external organs or tissues, successfully treated, without the knife or burning caustic plasters, but with soothing, balmy magnetic oils. Beware of imitations as there are those who hope to profit by advertising an oil cure for these diseases. We are the originators of this system, all others are frauds.

Correspondence solicited. Consultation free. Testimonials furnished. Address

DR. EUGENE BUELL,

Cancer Institute,

ROOM 57, SUPREME COURT BUILDING,

Cor. McAllister and Larkin Sts., San Francisco, Cal.

CANCER.

THE KOEHLER CANCER CURE CO.,

1428 Market St., San Francisco.

CANCER, Tumors or Malignant Growths removed without knife or caustic. A GUARANTEED CURE a specialty. Call or send for circular. Over 800 cancers preserved in alcohol in our office. Consultation free.

PHILIP KOEHLER, Manager.

S. F. MARKET REPORT

Market Review.

SAN FRANCISCO, Jan. 31, 1894.

The grain market goes from bad to worse. There is a little business doing, but it is only a little and there is no wish to do more either by buyer or seller. The situation in Europe offers no encouragement to shippers, so they buy only for immediate requirements. The immediate outlook is without promise, and we can see no hope of prices better than the wretched quotations now ruling. We quote: No. 1 shipping wheat, 97½@98½¢, with \$1 per ctl. for choice. Milling grades are quotable at \$1.02½ to \$1.05 per ctl.

Barley.

Some inquiry prevails for the better class of feed for shipping purposes, and for such stock buyers have to pay full figures. Medium grades show less strength, as offerings are larger. Brewing descriptions are in fair demand at steady rates. We quote: Feed, 70c to 73½¢ per ctl for fair to good quality, 75c to 77½¢ for choice bright; brewing, 82½¢ to 90c per ctl.

Dried Fruits.

Apricots and apples are steady in price, but there is weak tone to quotations for about everything else in this line. We quote as follows: Apples, 5 @ 5½¢ per lb for quartered, 5 @ 5½¢ for sliced, and 8 @ 9¢ for evaporated; Pears, 4 @ 8¢ per lb for bleached halves, and 4 @ 5¢ for quarters; bleached Peaches, 6 @ 7½¢; sun-dried peaches, 4 @ 5¢; Apricots, Moorpark, 11½@13¢; do Royals, 10 @ 11¢ for bleached & 6 @ 7½¢ for sun-dried; Prunes, 4½ @ 4½¢ per lb for the four sizes, and 2½ @ 4¢ for ungraded; Plums, 5 @ 5½¢ for pitted and 1½ to 2c for unpitted; Figs, 3 to 4c for pressed and 1½ to 2c for unpressed; White Nectarines, 6 to 7c; Red Nectarines, 5 to 6c per lb.

RAISINS—Quotations largely nominal, the market being in more or less demoralized condition. We quote: London Layers, \$1 to \$1.20; loose Muscates, in boxes, 65 @ 85¢; clusters, \$1.50 to \$1.75; loose Muscates, in sacks, 2½ to 2¾¢ per pound for 3 crown; 2 to 2½¢ for 2 crown; Dried Grapes, 1 to 1½¢ per pound.

General Produce Market.

OATS—Purchases on account of stablemen and millers keep the market in fairly active motion. Prices show no marked change, though the tendency in values is in favor of sellers, especially for product that is really choice. We quote as follows: Milling, \$1.15 @ 1.22½; Surprise, \$1.22½ @ 1.32½; fancy feed, \$1.20 @ 1.22½; good to choice, \$1.12½ @ 1.17½; poor to fair, 92½¢ @ \$1.07½; Black, 85¢ @ \$1.22½; Gray, \$1.05 @ 1.15 per ctl.

CORN—Buyers continue to have the market in their favor. The demand is not equal to the supply and business drags in consequence. Quotable at 80 @ 82½¢ per ctl. for large Yellow, 87½ @ 90c for small Yellow, and 90 @ 92½¢ for White.

CRACKED CORN—Quotable at \$20.50 @ 21.50 per ton.

CORNMEAL—Millers quote feed at \$20 to \$21 per ton; fine kinds for the table, in large and small packages, 2½ @ 3½¢ per pound.

OILCAKE MEAL—Quotable at \$37.50 per ton from the mill.

SEEDS—We quote: Mustard, brown, \$2.75 @ 3; Yellow, \$3.25 @ 3.50; Canary, imported, \$4 @ 4.25; do, California, —; Hemp, 3½¢ per lb; Rape, 1½ @ 2½¢; Timothy, 6½¢ per lb; Alfalfa, 8 @ 9c per lb; Flax, \$2.25 @ 2.50 per ctl.

CHOPPED FEED—Quotable at \$17.50 @ 18.50 per ton.

MIDDINGS—Quotable at \$18 @ 20 per ton.

MILLSTUFFS—We quote: Rye Flour, 3½¢; Rye Meal, 3c; Graham Flour, 3c; Oatmeal, 4½¢; Oat Groats, 5c; Cracked Wheat, 3½¢; Buckwheat Flour, 5 @ 5½¢; Pearl Barley, 4 @ 4½¢ per lb; Normal Nutrient, \$3 per case of 1 dozen cans; Breakfast Delight, \$3.25 per case of 2 dozen packages.

BRAN—Quotable at \$16 @ 17 per ton.

HAY—The demand is not brisk while prices have declining tendency. Wire-bound hay sells at \$1 per ton less than rope-bound hay. Following are wholesale city prices for rope-bound hay: Wheat, \$9½ @ 13½; Wheat and Oat, \$9½ @ 12½; Wild Oat, \$9½ @ 11½; Alfalfa, \$8 @ 10; Barley, \$9 @ 10½; Compressed, \$10 @ 12; Stock, \$8 @ 10 per ton.

STRAW—Firm in price with good demand. Quotable at 55 @ 65¢ per bale.

HOPS—Market inactive, with prospects not favorable for any immediate change for the better. Quotable at 15 @ 18¢ per lb.

RYE—Asking prices have been lowered. Quotable at 92½ @ 95¢ per ctl.

BUCKWHEAT—Quotable at \$1.20 @ \$1.30 per ctl.

GROUND BARLEY—Quotable at \$16.50 @ 17.50 per ton.

POTATOES—Supplies keep up well. Trade, however, is slow and buyers have the advantage. We quote: New Potatoes, 2 @ 2½¢ per lb; Sweets, 75¢ @ \$1 per ctl; Garnet Chiles, 45 @ 55¢; Early Rose, 40 @ 45¢; River Burbanks, 35 @ 40¢; River Red, 30 @ 40¢; Salinas Burbanks, 75 @ 87½¢ per ctl.

ONIONS—Quotable at \$1 @ 1.40 per ctl.

DRIED PEAS—We quote: Green, \$1.50 @ 1.75; Blackeye, \$1.60 @ 1.70; Niles, \$1.50 @ 1.65 per ctl.

BEANS—We quote: Bayos, \$1.90 @ \$2; Butter, \$1.75 @ 1.90 for small and \$2 @ 2.25 for large; Pink, \$1.60 @ 1.75; Red, \$1.75 @ 2.05; Lima, \$1.90 @ 2.10; Pea, \$2.25 @ 2.40; Small White, \$2 @ 2.20; Large White, \$2 @ 2.20 per ctl.

VEGETABLES—Receipts are still of moderate proportions, but prices are beginning to shape a little more favorably for consumers. We quote as follows: Asparagus, 8 @ 20¢ per lb.; Mushrooms, 8 @ 10¢ per lb. for common and 12½ @ 30¢ per lb. for good to choice; Rhubarb, 5 @ 8¢ per lb.; Green Peas, 4 @ 7c; String Beans, 15 @ 25c; Marrowfat Squash, \$10 per ton; Green Peppers, 20 @ 25¢ per lb.; Tomatoes, 75¢ @ \$1.25 per box; Turnips, 75¢ per ctl; Beets, 75¢ @ \$1 per sack; Parsnips, \$1.25 per ctl; Carrots, 40 @ 50c; Cabbage, 50 @ 55c; Garlic, 1½ @ 3c per lb; Cauliflower, 60 @ 70¢ per dozen; Dry Peppers, 5 @ 7c per lb; Dry Okra, 15c per lb.

FRESH FRUIT—Choice apples show firmness in

price under fair demand, but common qualities are weak, being in large offering. We quote prices as follows: Apples, \$1 @ 1.25 per box for good to choice, and 35 @ 75¢ for common to fair; Choice mountain Apples, \$1.25 @ 1.50 per box; Persimmons, 50 @ 75¢ per box; Cranberries, Eastern, \$7 @ 8 per bbl.

CITRUS FRUIT—An improved demand is expected in the near future. We quote as follows: Fair to choice Navel Oranges, \$1.25 @ 2.00 per box; Seedlings, 75¢ @ 1.25; Mandarin Oranges, 65 @ 90¢ per box; Mexican Limes, \$6 @ 7 per box; Lemons, Sicily, \$4 @ 5; California Lemons, \$1 @ 2 for common and \$2.25 @ 3 for good to choice; Bananas, \$1.50 @ 2.50 per bunch; Hawaiian Pineapples, \$2.50 @ 3; Mexican Pineapples, \$3 @ 4 per dozen.

NUTS—The demand is quite slow all round. We quote as follows: Chestnuts, 6 @ 8c per lb; Walnuts, 6 @ 7c for hard shell, 8½ @ 9c for soft shell and 8½ @ 9c for paper shell; Chile Walnuts 8 @ 9c; California Almonds, 10 @ 11c for soft shell, 6 @ 7c for hard shell and 11½ @ 12½¢ for paper shell; Peanuts, 3 @ 4c; Hickory Nuts, 5 @ 6c; Filberts, 10 @ 10½¢; Pecan, 8 @ 9c for rough and 11c for polished; Brazil Nuts, 10 @ 11½¢; Cocoanuts, \$4 @ 5 per 100.

HONEY—No improvement. Slim trade still the rule. We quote: Comb, 10½ @ 11½¢ per lb for bright, and 8 @ 10 for dark to light amber; light amber, extracted, 4½ @ 5c; dark, 4½ @ 4¾¢; water white, extracted, 5 @ 5½¢ per lb.

BEESWAX—Quotable at 22 @ 23c per lb.

BUTTER—The market is not heavily stocked with fine grades, and prices for such product show good steadiness. The production in Sonoma, Marin, San Luis Obispo and Monterey counties is reported to be on the increase, but with soft grass much Butter from these sections is not up to the usual high standard of excellence. With a week or two of fine weather, however, there will more than likely be liberal quantities of gilt-edge Butter. We quote as follows: Fancy Creamery, 26 @ 27½¢; fancy dairy, 23 @ 25c; good to choice, 20 @ 22c; common grades, 17 @ 19c per lb; store lots, 11 @ 15c; pickled roll, 17 @ 19c; firkin, 15 @ 18c.

CHEESE—Stocks are not particularly large, and prices have steady tone in consequence. Within a short while, however, arrivals are likely to be quite free. We quote as follows: Choice to fancy new, 12 @ 13c; fair to good, 9 @ 11c; Eastern, ordinary to fine, 11 @ 14c per lb.

EGGS—Receipts are becoming more liberal, and there is some little accumulation of stocks, causing a decline in asking figures. We quote: California ranch, 24 @ 25c; store lots, 21 @ 22½¢; Eastern Eggs, cold storage, 10 @ 16c per dozen.

POULTRY—The market continues in unsatisfactory shape for sellers, as the situation is more or less handicapped by continual Eastern arrivals. We quote: Live Turkeys—Gobblers, 11 @ 12c per lb; Hens, 11 @ 12c; dressed Turkeys, 12½ @ 16c; Roosters, \$3.50 @ 4 for old and \$3.50 @ 5 for young; Fryers, \$4 @ 4.50; Broilers, \$3 @ 4; Hens, \$4 @ 5.50; Ducks, \$4.50 @ 5.50; Geese, \$1.50 @ 1.75 per pair; Pigeons, \$1 @ 1.25 per doz. for old and \$1.25 @ 1.50 for young.

PROVISIONS—The tone of the market is of firm character. We quote as follows: Eastern

hams, 12½ @ 13c per lb; California hams, 12c; Bacon, Eastern, extra light, 15 @ 16c; medium, 11 @ 11½¢; do, light, 12c; do, light, clear, 13 @ 13½¢; light, medium, boneless, 12½¢; Pork, prime mess, \$14 @ 15; do, mess, \$18 @ 19; do, clear, \$21; do, family, \$24 per bbl; Pigs Feet, \$12.50 per bbl; Beef, mess, bbls, \$7.50 @ 8; do extra mess, bbls, \$8.50 @ 9; do, family, \$9.50 @ 10; extra do, \$11 @ 11.50 per bbl; do, smoked, 10 @ 10½¢; Eastern lard, tierces, 8 @ 8½¢; do prime steam, 10½¢; Eastern pure, 10-lb pails, 11½¢; 5-lb pails 11½¢; 3-lb, 11½¢; California, 10-lb tins, 10½¢; do, 5-lb, 11c; do, kegs, 11½ @ 12c; do, 20-lb buckets, 11c; compound, 8c for tierces and 8½¢ for hf bbls.

WOOL—Quotations are somewhat nominal, as the market is dull and the situation not favorable for business. The San Francisco Price Current says: "That there will be any special revival of trade so long as the tariff problem remains in its present unsettled condition is altogether unlikely. What will happen if foreign Wool is placed on the free list cannot be definitely foretold, but that the domestic Wool and woolen industries must suffer from such action may be accepted as a foregone conclusion." We quote spring:

California, year's fleece, 7 @ 8c; do 6 to 8 months, 7 @ 9c; do Foothill, 10 @ 11c; do Northern, 12 @ 13c; do extra Humboldt and Mendocino, 11 @ 13c; Nevada, choice and light, 12 @ 14c; do heavy, 8 @ 10c; Oregon, Eastern, choice, 10 @ 11c; do Eastern, poor, 7 @ 9c; do Valley, 12 @ 14c. We quote fall: Free Mountain, 6 @ 8c; Northern defective, 5 @ 6c; Southern and San Joaquin, 3 @ 5c.

HIDES AND SKINS—Quotable as follows:

	Sound.	Culls.
Heavy Steers, 57 lbs up, ½ lb. 5	@-c	4 @-c
Medium Steers, 48 to 56 lbs. 4	@-c	3½ @-c
Light, 42 to 47 lbs.	3	2½ @ 3-c
Cows, over 50 lbs.	3	2½ @-c
Light Cows, 30 to 50 lbs.	3	2½ @-c
Stags,	2½	2 @-c
Kips, 17 to 30 lbs.	4	3 @-c
Veal Skins, 10 to 17 lbs.	5	4 @-c
Calf Skins, 5 to 10 lbs.	7	6 @-c
Dry Hides, usual selection, 7c;		
Calf Skins, do, 7c;		
Cull Hides, Kip and Calf, 4c;		
Pelts, Shearling, 10 @ 20c each;		
do, short, 25 @ 35c each;		
do, medium, 40 @ 50c each;		
do, long wool, 50 @ 75c each;		
Deer Skins, summer, 25c;		
do, good medium, 15c;		
do, winter, 5c per lb;		
Goat Skins, 25 @ 40c apiece for prime to perfect,		
10 @ 20c for damaged, and 5 @ 10c each for Kids.		

TALLOW—We quote: Refined, 5½¢; rendered, 4½ @ 4¾¢; country Tallow, 4 @ 4¾¢; Grease, 3 @ 3½¢ per lb.

San Francisco Meat Market.

Supplies are of good proportions and all demands are promptly satisfied. Following are the rates for whole carcasses from slaughterers to dealers:

BEEF—First quality, 5½ @ 6c; second quality, 4½ @ 5c; third quality, 3½ @ 4c per lb.

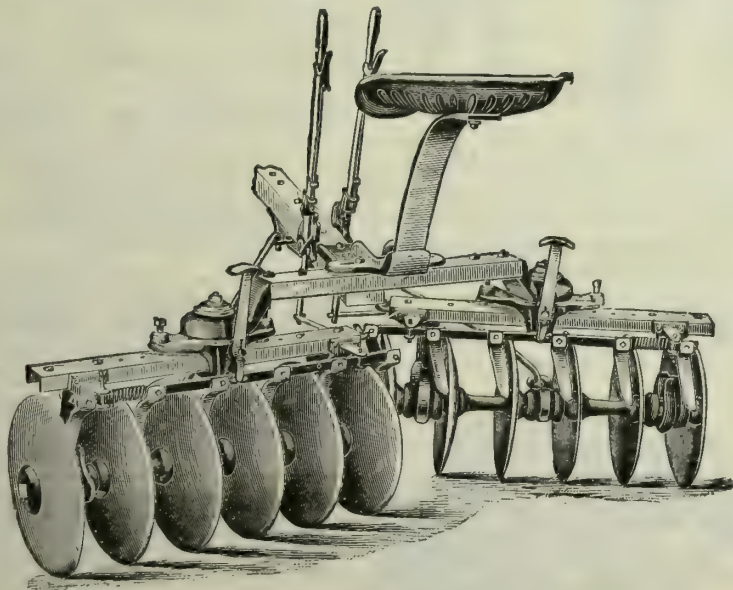
CALVES—Quotable at 4 @ 5c for large, and 6 @ 7c per lb for small.

MUTTON—Quotable at 6 @ 7c per lb.

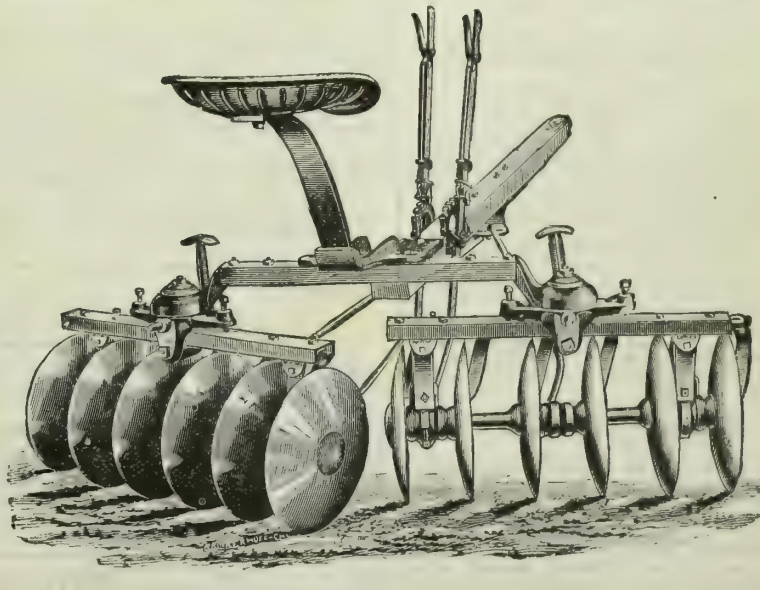
LAMB—Quotable at 7 @ 8c per lb.

PORK—Live Hogs, on foot, grain fed, heavy and medium, 4½¢; small Hogs, 5c; stock Hogs, 4½ @ 4¾¢; dressed Hogs, 7 @ 7½¢ per lb.

LION REVERSIBLE STEEL FRAME DISC HARROW



IN-THROW.



OUT-THROW.

It gives us pleasure to place before the farmers a long felt want in the way of a Reversible Disc Harrow that will meet all requirements and one that is particularly adapted for Orchards and Vineyards.

Can be used with two or three horses as desired, having the only perfect three-horse hitch in use. NO SIDE DRAFT. This is unquestionably the most complete and perfect Reversible Disc Harrow manufactured. IN THREE MINUTES it can be changed from an out-throw to an in-throw without detaching the horses or detaching the gangs. No bolts or nuts removed in changing. No chains to gather trash. CAN BE MADE RIGID OR FLEXIBLE AT WILL. Each and every part is made adjustable, enabling the operator to handle it with ease.

SCRAPERS ARE INDEPENDENTLY ADJUSTED to the discs on each gang and can be operated simultaneously by the foot with a single lever, the scrapers returning to their place by the aid of a self-operating spring. This enables the driver to keep the discs clean in wet soil. Each gang is provided with a lever, enabling the driver to change one or both as desired.

As each gang is provided with a rocker and set screw, it places the operator in position to accomplish better results than can be found on any other Harrow in the market. A slight change will make each disc do its proportion of the work, and when moving from one point to another bear its proportion of weight; a very important feature and found only in the Lion Reversible.

The boxes are made of the very best material with grooved center, giving more end surface than on any other harrow, and constructed in such a way as to render them perfectly dust proof.

THIS HARROW HAS A HIGH SPRING SEAT, which places the operator out of the dust, and is so adjusted that no part of his weight rests on the horses' necks.

The material used in the construction of this harrow is the very best. The general finish is far superior to anything in the market. In the construction we have aimed to secure all the points of merit needful in a first-class implement, and we believe in offering you this harrow that we can furnish you an implement far superior to any other in the market for strength, durability and simplicity. A trial will convince you that we have not made any statements that we cannot honestly carry out.

4 feet cut with 20-inch discs
6 " " " 20 " "
8 " " " 20 " "

List price, \$50 00
" " 62 50
" " 80 00

WHIFFLETREES AND NECK YOKE FURNISHED WITH EACH HARROW.

SAN FRANCISCO
AND
SAORAMENTO.

BAKER & HAMILTON,

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AND
SAORAMENTO.

SOLE AGENTS FOR CALIFORNIA, ARIZONA AND NEVADA.

The Loudest Noise Ever Heard On Earth.

No thunder from the skies was ever accompanied with a roar of such vehemence as that which issued from the throat of the great volcano in Krakatoa, an islet lying in the Straits of Sunda, between Sumatra and Java, at 10 o'clock on Monday morning, August 27, 1893. As that dreadful Sunday night wore on the noise increased in intensity and frequency. The explosions succeeded each other so rapidly that a continuous roar seemed to issue from the island. The critical moment was now approaching and the outbreak was preparing for a majestic culmination.

The people of Batavia did not sleep that night. Their windows quivered with the thunders from Krakatoa, which resounded like the discharge of artillery in their streets. Finally at 10 o'clock on Monday morning a stupendous convulsion took place, which far transcended any of the shocks which had preceded it. This supreme effort it was which raised the mightiest noise ever heard on the globe. Batavia is 95 miles distant from Krakatoa. At Carimon, Java, 355 miles away, reports were heard on that Sunday morning which led to the belief that there must be some vessel in the distance which was discharging its guns as signals of distress. The authorities sent out boats to make a search; they presently returned, as nothing could be found in want of succor.

The reports were sounds which came all the way from Krakatoa. At Macassar, in Celebes, loud explosions attracted the notice of everybody. Two steamers were hastily sent out to find out what was the matter. The sounds had traveled from the Straits of Sunda, a distance of 969 miles. But mere hundreds of miles will not suffice to illustrate the extraordinary distance to which the greatest noise that was ever heard was able to penetrate. The figures have to be expressed in thousands. This seems almost incredible, but it is certainly true. In the Victoria plains, in West Australia, the shepherds were startled by noises like heavy cannonading. It was some time afterward before they learned that their tranquility had been disturbed by the grand events at Krakatoa.—From the Youth's Companion.

List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey & Co., Pioneer Patent Solicitors for Pacific Coast.

Week ending January 16, 1894.

- 512,363.—FIBER SEPARATOR—M. A. Cienham, S. F.
512,369.—FRUIT BOX—W. T. Cottler, Los Angeles, Cal.
512,349.—DYING APPARATUS—E. Deste, San Fernando, Cal.
512,323.—SECONDARY BATTERY—A. Hough, S. F.
512,381.—CHIMNEY CAP—M. Ludwig, Albany, Or.
512,731.—SHIPPING CRATE—L. E. Marshall, Martinez, Cal.
512,340.—TOOTH MOLD—J. R. Phelps, Marysville, Cal.
512,341.—TOOTH CROWN—J. R. Phelps, Marysville, Cal.
512,398.—BOOM FOR DREDGES—W. B. Pless, Stockton, Cal.
512,301.—FOLDING BED—C. O. Richardson, Summerville, Or.
512,393.—FIRE WATER HEATER—R. M. Schotzko, Tacoma, Wash.
512,394.—VOTING MACHINE—J. H. Scottford, Portland, Or.
512,311.—TOOL HOLDER—H. Shogren, Portland, Or.
512,318.—GOLD SEPARATOR—M. Stewart, San Bernardino, Cal.

NOTE.—Copies of U. S. and Foreign patents furnished by Dewey & Co. in the shortest time possible (by mail or telegraphic order). American and Foreign patents obtained and general patent business for Pacific Coast inventors transacted with perfect security, at reasonable rates, and in the shortest possible time.

Reversible Boot Heels.

An English firm has recently been granted letters patent for an invention whereby heels of boots and shoes can be easily detached and reversed. The invention consists of steel, or any similar material, shaped as a lift, with flange and groove, by the first of which it is fixed in any part of the height of the heel, at the option of the maker, while the upper portion of the heel is so constructed as to slide into position so that it is indistinguishable from an ordinary heel; but to insure absolute security a fine screw is inserted from the inside. The advantages claimed for it are that when the top piece becomes slightly worn down the wearer can reverse it to the other boot, and after these have been well worn they can be replaced by a new set at a very small cost.

—During the past season the Watsonville beet-sugar factory handled 65,396½ tons of beets, from which 7768½ tons of sugar were made. There is yet a large supply of syrup on hand, which may be processed next year. This is the largest tonnage of beets handled and the greatest production of any beet factory on the continent. The season of 1894 promises to far surpass that of 1893. Already the contracted acreage has reached 12,000 acres, and the enlargement of the beet factory was a necessity.

Breeders' Directory.

Six lines or less in this directory at 50c per line per month.

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F. H. BURKE, 626 Market St., S. F. All Prize Holsteins; Grade Milch Cows. Fine Pigs.

REGISTERED SHIRE STALLIONS, from two to six years old; weight from 1500 to 2000 pounds. J. I. Parsons, Santa Rosa, Cal.

JERSEYS AND HOLSTEINS, from the best Butter and Milk Stock; also Thoroughbred Hogs and Poultry. Wm. Niles & Co., Los Angeles, Cal., Breeders and Exporters. Established in 1876.

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PERCHERON HORSES.—Pure-bred Horses and Mares, all ages, and Guaranteed Breeders, for sale at my ranch near Lakeport, Lake County, Cal. New Catalogue now ready. Wm. B. Collier.

PETER SAKS & SON, Lick House, San Francisco, Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs.

JERSEYS—The best A. J. C. C. Registered Prize Herd is owned by Henry Pierce, S. F. Animals for sale.

L. V. WILLITS, Watsonville, Cal., Black Percherons. Registered Stallions for sale.

POULTRY.

J. W. FORGEUS, Santa Cruz, Cal., has established one of the best equipped poultry ranches on this Coast. He has 300 Rankin Strain Pekin Ducks, also Brown Leghorns and Barred Plymouth Rocks. Write for prices of what you want. Reference: People's Bank. Inspection and correspondence solicited.

WM. NILES & CO., Los Angeles, Cal., Breeders of nearly all varieties of Poultry, Dairy Cattle and Hogs.

CALIFORNIA POULTRY FARM, Stockton, Cal. Send for Illustrated & Descriptive Catalogue, free.

B. G. HEAD, Napa. Importer and Breeder of Land and Water Fowls. Send for New Catalogue.

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SWINE.

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H. J. PHILPOTT, Niles, Cal., Importer and breeder of Teacup and other choice strains of Registered Poland-China Hogs.

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BERKSHIRES & POLAND-CHINA HOGS, Best Stock; also Dairy Strains of Jerseys and Holsteins. Wm. Niles & Co. Los Angeles, Cal. Established 1876.

P. H. MURPHY, Perkins, Sac. Co., Cal.—Breeder of Short-Horn Cattle, Poland-China and Berkshire Hogs.

TYLER BEACH, San Jose, Cal. Breeder of Thoroughbred Berkshire and Essex Hogs.

CHAS. A. STOWE, Stockton, Regist'd Berkshires.



HOLBERT & CONGER
Los Angeles, Cal.

Direct Importers of—
Large Draft and Fine
Coach Stallions,

German Coach, Percherons, English Shires, Belgians, Cleveland Bays and Yorkshire Coach, all Registered. First Prize at Cal. Fair. SIXTY-ONE PRIZES, FIVE SWEET-STAKES and two herd prizes at World's Fair, 1893. Correspondence solicited. Address 208 Belmont Ave. We make special inducements and terms to a company of breeders.

Short-Horn BULLS

Calves, Yearlings and 2-year-olds
FOR SALE.

ROBERT ASHBURNER,

Baden Station, San Mateo County, Oa
The cars of the S. F. and San Mateo Electric Road pass the place.



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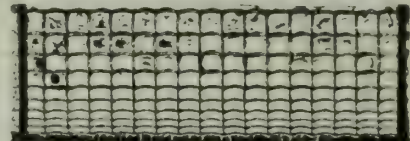
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A Note About Water.

Where does all the water in the sea come from, is a question that many a small boy has asked his father, and which many a father has found himself utterly unable to answer. Some idea of where it comes from may be gathered from a glance at the following table of the hourly quantity of water discharged into the sea annually by some of the best-known rivers of the world. It was compiled by an expert and may be accepted as accurate:

River—	Million Cubic Feet per Hour.
Amazon.....	3700
La Plata.....	3100
Mississippi.....	2070
Volga.....	1120
Danube.....	960
Ganges.....	700
Nile.....	560
Rhine.....	280
Elbe.....	160
Seine.....	80
Thames.....	40

This, of course, throws the question back a step. The question becomes, where does the water in the rivers come from? When that is answered by the statement that it comes from the hills we have gone about as far as we can go. Water is an element, and what its original source may be no man knows.—From Harper's Young People.

The Best Preservative Paint for Iron-Work.

Mr. W. Thomson recently read a paper before the Manchester Association of Engineers on "The Influence of Some Chemical Agents in Producing Injury to Iron and Steel," in which reference was made to the effects of different paints and varnishes used for the preservation of structural iron and steel from rust. From experiments made by himself, Mr. Thomson has arrived at the conclusion that red lead paint is the best preservative. This result has struck him as remarkable, because red lead is a highly oxidizing substance; but the reason was found to be that red lead had the effect of producing a skin of the unoxidizable and protective black or magnetic oxide on the iron itself under the paint. The author has also found that other oxidizing agents, such as manganese dioxide, form a paint which preserves iron from rusting; and this discovery he regards as of great industrial importance. Mr. Thomson explained that, having been required some time ago to make a considerable number of experiments to ascer-

tain the most suitable paint for protecting a large iron structure from the action of sea-water spray and rain, he arrived at the conclusion that red lead paint was the best he could find for the purpose. Mr. John West, a vice-president of the society, who presided on the occasion of the reading of the paper, supported the statements and views of Mr. Thomson that red lead is the best preservative paint for ironwork. The chief novelty brought out in the paper was the reason why red lead is so efficient in protecting iron.

History of the Calla Lily.

This was first introduced to Europe from Southern Africa in 1687, and has become a great favorite with cultivators all over the world, says *Meehans' Monthly*. It does not like a very warm temperature nor a very cold one. It will live out in American waters, provided it is deep enough to be below the reach of absolute ice. It fills the ditches and narrow creeks in Cape of Good Hope, much the same as our spatterdock would here. It was removed, by Kunth, from the genus *Calla* and called *Richardia Africana*, but it is not easy to get rid of a name which once gets into general use, hence it still goes by the name of *Calla*. The spotted one, common in cultivation during the last few years as the *Richardia albo-maculata*, was also introduced from Southern Africa in 1859. This is well known by its spotted leaves. Another one was brought from the same country in 1857, under the name of *Richardia hastata*—the spathe being of a yellowish color, but very small, and is not yet much known. On account of the common calla blooming most freely in the spring of the year, it has come into general use for Easter decorations; and not unfrequently receives, with a number of other plants, the common name of Easter lily.

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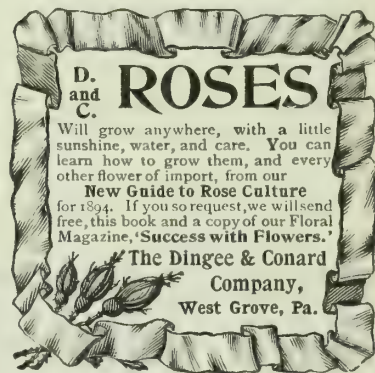
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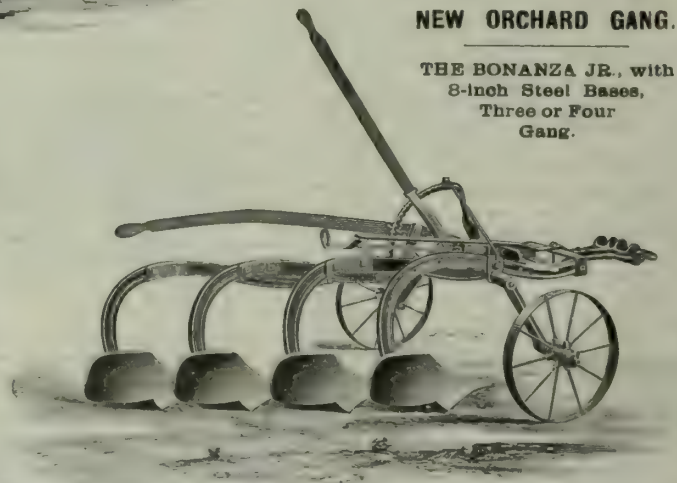
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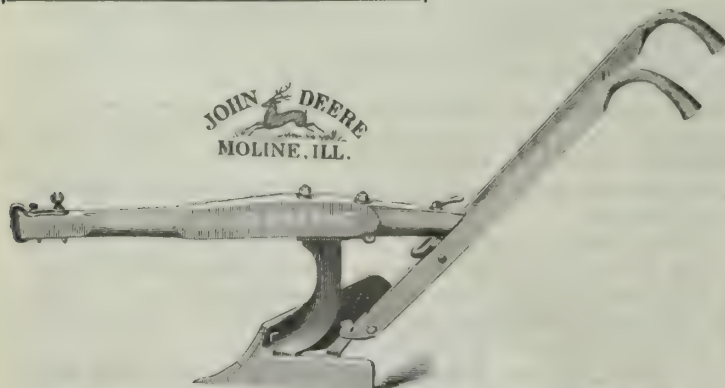
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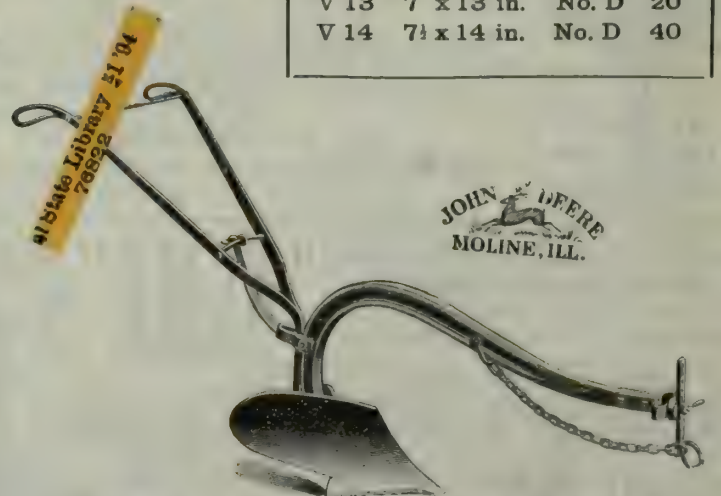
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Vol. XLVII. No. 6.

SAN FRANCISCO, SATURDAY, FEBRUARY 10, 1894.

TWENTY-FOURTH YEAR.
Office, 220 Market Street.



CALIFORNIA MIDWINTER EXPOSITION—PARTIAL VIEW OF BUILDINGS AND GRAND COURT DURING THE PARADE ON OPENING DAY.

At the Midwinter Fair.

We continue this week our portrayal of scenes at the Midwinter Fair as fixed by the camera. Though there are marked advantages in the photographic method there are also defects. For instance, while the engraving we use shows faithfully the details of construction and the life that comes from the presence of the multitude, it lacks depth and distance and gives no idea of the area of the ground embraced in it. The distant points of the picture are considerably more than a thousand feet from the foreground while the observer would think them but two or three hundred. Aside from this defect the view is true to the scene. The building in the background is the largest of the group, the Manufactures and Liberal Arts Building. The building on the right is the Mechanic Arts, of whose size the photograph gives no adequate idea.

The fair is opening well. There is much still to be done before it can be said to be complete, but rapid prog-

ress is being made. The patronage thus far cannot be complained of considering the incompleteness of the display and the unpleasant weather which has prevailed. About 125,000 people attended during the first week, and daily attendance since has ranged from 6,000 to 15,000. Visitors seem well pleased and surprised at the extent and variety of the display. Each day takes more and more the aspect of a festival. Countless flags and banners are floating from the staffs, music is playing on the Grand Court and in the big buildings, the crowd of merry-makers grows larger each succeeding day, and everywhere is a scene of recreation and pleasure. After this week not a day will pass without a special fete.

The city has already thousands of visitors. The records of the Department of Admissions show that they come from great distances. News has been received that hundreds are on their way from Arizona, New Mexico and Texas. Boats and trains are crowded on their way to this city from Los Angeles and other Southern points.

IT SEEMS that California midwinter strawberries are commanding the attention of those who have grown these fruits for the Eastern markets. According to the *Fruit Trade Journal*, there was formed, some time ago, an association of strawberry-growers in and around Irvington and Hilton, N. J. This association forwarded to southern California a large number and variety of strawberry plants, and they were recently advised from California that the plants were bearing fruit. Henry Jerolaman and William T. Brown, of Hilton, two gentlemen interested in the enterprise, started westward and are now in this State. Messrs. Jerolaman and Brown say that if this fruit can be successfully shipped the Eastern people will soon have strawberries all the year around, and it will be a common thing to see an abundance of the fruit there in midwinter. We hope these enterprising Jersey men will make their enterprise go. Older Californians can tell them there are difficulties in the way, but they may get over or around them.

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ALFRED HOLMAN.....Editor
J. F. HALLORAN.....General Manager
E. J. WICKSON.....Special Contributor

San Francisco, February 10, 1894.

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See Advertising Columns.

The Week.

Another light rain has covered portions of the State and slaked the crust which several days of northerly winds have fastened about the stems of the young plants. Temperatures have been rather low and top growth retarded, but rooting and tillering have proceeded well. It is now getting late enough for safe growth, and it may be looked for in the earlier parts of the State.

Affairs generally are assuming a more confident and cheerful tone. It is said that accumulations of coin at money centers have become appalling and losses of interest are wearing upon capitalists. Loans are not looked upon with such horror and aversion as they were a little while ago, and the borrower does not need to travel on his vest buttons. A little freer use of money by bankers and stocking-hiders will soon put a bright new face on things.

THE OLEOMARGARINE MEN now seem to be on top. Recently a leading firm of manufacturers, in a New York court, pleaded exemption from the State law against the sale of butterine because they sold in original packages, and that as an article of interstate commerce these original packages are not subject to the law of the State. They were temporarily enjoined from further sale until the case can be tried in the Supreme Court next March. There is little doubt of the ultimate victory of the oleo men unless Senator Hill's bill, which was recently given in our columns, should be passed by Congress. Meanwhile, the recent organization of the National Dairy Union in Chicago, and its proposed consolidation with a similar organization soon to be effected at Cleveland, will give dairymen the most powerful and effective association which has yet taken up the gauntlet against the oleo trade.

THE Secretary of Agriculture has forwarded to the Midwinter Exposition from the National Capitol the Government exhibit of fruit models, the finest collection in the world, modeled after samples of every fruit known to man, particularly those common to the United States. An interesting feature of the exhibit will be the opportunities afforded for comparison between the model and the California grown specimens of the same varieties which are displayed in the different county buildings and in the Agricultural building in such profusion.

The Hope in Wheat.

Now that the rainfall is generous and continuous and a year of large aggregates in field production seems assured over a considerable area of the State, it is very timely to talk about wheat. Very opportune, then, is the report of the State Board of Agriculture, which we publish upon another page of this issue, and which introduces the wheat-production problem as its opening feature. Awarding such eminence to the wheat crop is only its due in view of its historic standing in California's prosperity, and the fact that the president of the State society is one of our greatest wheat-growers, who has seas of land and grows wheat by the shipload, gives greater significance to the position which the report boldly takes. We are very glad that Mr. Boggs makes this contribution to the discussion of the profitability of wheat growing. It must be considered a demonstration of his method of making money, and if others cannot do so well they should acquire his methods and turn to profit efforts which during the last few years have yielded little more than cost of seed and labor, and not always that much.

We had no idea that wheat could be put on cars or boats for anything like 29 cents per bushel, or that amount plus rental or interest. If we figure it rightly, a man producing wheat at 29 cents and selling at 88 cents per bushel makes a profit of over 200 per cent. Why, that beats pawn-broking, and there should certainly be enough on that margin to pay rent or interest. Other manufacturers manage to pay rent and interest on a fraction of 100 per cent profit, and surely the wheat-grower, with 200 per cent profit, can surely meet these obligations if he has already had his own wages for driving his own team, as the report points out.

But can wheat be really put on the cars or river bank for 29 cents per bushel? To question it of course conveys a doubt to Mr. Boggs' accuracy as a book-keeper, and he is not usually credited with financial errors. There can hardly be any doubt, however, as to Mr. Boggs' computation as applied to his own operations. If wheat cannot be grown for the figure stated, it must be the fault of other growers who have lamented their ill-fortune when wheat fell below \$1.50 per ctt., and who have faced ruin when it went to \$1.20, to tell how in the world it is that their wheat has cost them so much. We shall be glad to hear from them and to know in what respects Mr. Boggs' expenditures, as given in the report, cannot cover the wheat crop on their fields. We ought to discuss this proposition with all the light available. If it can be true that wheat is so good a thing, why should we waste so much time in beating around after new crops and run the risk of increasing the fruit crop beyond present demands.

We anticipate the thrill which the statements of the California State Board of Agriculture on the cost of wheat will cause abroad. The depressed English grain-grower will no doubt be paralyzed beyond repair. He has wished confusion for the East Indian and Argentinian who have learned to make such cheap wheat. He has become so used to the American surplus that he has learned to regard it as a matter of course, and to expect for its extinction by the increase of American consumption; but what can he hope for now when the Californian can make more than 200 per cent profit on the wheat prices of the last ten years—the worst ten years since the wheat world began?

If we can all learn to turn out wheat at Mr. Boggs' figures, there will open a future to California wheat-growing which will eclipse the past. It is true it requires considerable land to produce much money, but there is plenty of land. A net profit of almost \$10 per acre would command almost all of our valley lands. The impression has been from previous discussions that a man had to hurry to get a profit of \$2.50 per acre on wheat land.

We are exceedingly glad this matter has come up in this prominent manner. The wheat crop now has a champion. It has gone about of late without a lance on its side. We hope it is now armed to win.

ACCORDING to the telegraphed reports the wool-growers have not obtained much satisfaction from their effort to rescue their product from the free trade experiment. They claimed a hearing on the ground that they represented an industry in which were directly interested and engaged 4,000,000 people of the United States, owning and caring for 47,000,000 sheep, with a directly invested capital of over \$200,000,000 and an indirect investment of \$300,000,000 more, but they were told that the committee had determined to give no verbal hearings, and it would not be possible to make an exception in the case of the wool-growers. Evidently the industries are not in it at Washington this season.

MANY READERS of the RURAL will be pained to read of the suicide of Eugene Avy, the well-known wool dealer and flock owner, in this city this week. Mr. Avy has been out of health for some time, and was evidently deranged.

The Beet Sugar Business.

There is much activity in beet-sugar talk, in spite of the threatened death of the bounty. The cane-sugar growers of Louisiana are fighting the revocation of the bounty with all the force they command, and authorities on beet sugar have said that that industry must come to a sudden end unless it has protection or a bounty. It is to be hoped that an operative basis can be found even on a bounty-less condition.

It is stated that a prominent beet-sugar man proposes to purchase 10,000 acres of land belonging to the Crocker estate near Lake Yosemite, the artificial supply of the canal system, put the entire acreage into beets, and build a factory sufficiently near the lake to use its water power. The man who makes this proposition is a German who claims to have made a special study of beet culture in Germany, and to have experimented largely on soils in all portions of California.

Beet-sugar schemes in Nebraska have had to undergo some modification. It seems that Omaha has secured the location of the Polish enterprise and that \$1,500,000 will be spent on a factory at that place, conditioned on the farmers thereabouts guaranteeing to raise 6000 acres of sugar beets annually. From the experience of the Oxnard factories at Grand Island and Norfolk, the *Breeders' Gazette* fears that some difficulty will be experienced in obtaining this guarantee and yet more in securing its fulfillment. It cites the following reasons for this view:

The average American farmer has an aversion to root growing. From whatever reason this arises its existence cannot be denied. The establishment of the Oxnard factories, which assured farmers in the vicinity of those towns a greater income from their acres than they could get in corn, was thought to be a godsend, reducing their acreage of corn to the benefit of all and diversifying their farming operations to a profitable degree. But the Western ingrained idea of farming, which contemplates turning a furrow from a quarter to half a mile long, seeding with check-rower and cultivating with a shovel-plow, did not really adapt itself to hoes and hand weeding; hence it came about that the factories at Grand Island and Norfolk have never been able to run at their full capacity from lack of beets. The Oxnard people had actually to rent farms and go into beet raising themselves in order to get an adequate supply.

We have had some such experience in California. Mr. Spreckels has had to grow a large part of his own beets for the Watsonville factory. The Alvarado concern had some trouble in getting beets enough. But it is only in part because the Californians like to drive a team and hate to break their backs at small cultures. They could in some cases have grown beets but the high wages called for here for hand work left no profit in the crop. It is not, therefore, altogether sentiment or weak backs; it was a financial consideration. Recently, however, California has made such notable progress in invention and construction of special machines for handling beets in the field, that the cost of the crop has been greatly cheapened. Whether this method of cheapening the beet crop has reached its limit or not we cannot say, but probably there will be other improvements.

It seems to be a question of whether better machinery or cheaper labor shall be the solution of the beet problem. In Nebraska it is proposed to establish a Polish colony of 200 families to raise beets. But in this country such labor cannot be held to a contract nor will it long accept less than the market value for its services. We would rather look for the future of beet sugar in American invention than in imported labor. It is a safer proposition. Possibly, however, the present scaling down of field wages will meet the required conditions half way. It is a very interesting problem.

OUR cabbage is scoring good points in St. Louis, the great sauerkraut emporium of the United States. The correspondent of the *Fruit Trade Journal* states that several cars of California cabbage came in there during the last week in January. The stock was remarkably fine and fresh looking, and the size of the heads are of the most desirable kind for the trade. The Southern offering, together with the Eastern stock, suffer very much by comparison with the California product. This is a good point. Cabbage can surely not be side tracked as a luxury even in the dullest times. If we can capture the German favor of the great West, there will be millions in it.

A NUMBER OF HOP-DEALERS sign an announcement that they will not deal in Lake county hops because the supervisors of that county have adopted an anti-liquor ordinance. They may mean all they say, but the probability is that if a fine sample of hops is offered to any of them, he will prove to be a better merchant than a boycotter. Hops are a marketable commodity, and there are other markets than San Francisco. There is, of course, a great moral question involved, and probably a consistent prohibitionist should not grow anything which will "make drunk come." But when you come to selling hops—why, they will go for what they are worth.

FIVE HUNDRED BOXES OF APPLES left Walla Walla, Wash., Tuesday, for Minneapolis.

From an Independent Standpoint.

The most significant of the many effects proceeding from the hard times in this State is the very notable decline in the rates of wages paid for labor. On the Glenn estate in Glenn and Colusa counties and on the Stanford estate in Tehama county, where in times past farm hands have been paid anywhere from twenty-five to forty dollars per month with board, recent orders have established the uniform rate of seventy-five cents per day. And what has thus been done notably on these large estates is being done quietly everywhere else. A prominent dairyman who employs thirty men the year round informed us yesterday that he had been compelled to cut the wages at his place from thirty to twenty dollars per month with board; and we hear of a multitude of cases where similar reductions have been made. In the cities and in railroad work there have been relative reductions. A large mercantile house in this city made a clean cut of twenty per cent in the wages of its employes on January 1st; and it is said that the average cut in clerical wages, taking the city through, has been at least ten per cent, with still further reductions impending if business does not soon pick up. Things have come to the point where wages must be cut down to meet the loss of profits, or industry must cease. The conditions affect alike the farmer, the manufacturer, the merchant and the transporter; and it seems inevitable that wages in every line of business must come down.

For the wage earner in this State the serious view of the matter is that, however the tide of business may turn, wages will not go back to the old figures. For a good fifteen years past wages have been kept up on this coast by sheer force of habit and sentiment. In spite of all the talk about the economic effect of Chinese competition, California has paid wage rates, when compared with rates in the Eastern States, fifty per cent higher for farm and all other kinds of out-door labor, seventy-five per cent higher for skilled labor and approaching 100 per cent higher for service of a personal or clerical sort. There was a flush time when this could easily be done, but that time is now long past. Hereafter California must, like other countries, live upon what she earns; and to do this there must be close economy all along the line.

The cut in wages comes hard in California because habits of living among all classes are liberal and even extravagant. As wages have been higher with us, so spending has been freer than elsewhere. With the new order of things there must be profound changes in our social life; and we question seriously if the new condition will not in a genuine sense be better than the old. Are we really better off for those extravagancies which have long been characteristic of California? Has not a good share of our spending been for things which have done us more harm than good? Will not those mental and moral qualities which thrive under industry and temperance and moderation of spirit, and which after all are the solid and abiding advantages of life, be better promoted in the new than in the old conditions? These are questions which we should ask ourselves in soberness before lamenting the changed times that are upon us.

If wages in California are to be lower hereafter, there will be some compensation in the fact that under the new order of things less money will go further in the purchase of food, clothing, rent and other essentials. In former times the coarsest ready-made suit of clothes cost from \$15 to \$25; now a durable and even fashionable suit can be bought in any clothing store of this city for half that price. Sugar formerly cost ten and twelve cents per pound; now it may be had for five. Prints and flannels and women's wear in general are greatly reduced in price. And so all along the line of personal and domestic requirement there has been a fall in prices ranging from twenty to one hundred per cent. It is not only a time of low wages but a time of low prices, so that a cut of twenty or even fifty per cent in a man's earnings need not, necessarily, be reflected in personal or domestic discomfort. Of mere luxuries there must under the new order of things be fewer, both for employer and employed; but, as we view it, there is little hardship and no real disadvantage in that. The best days of the American Republic—the times which bred its leaders and its heroes—were days when what are now called luxuries were unknown. Even if we should be forced to return to the simpler modes of life which prevailed in the times when Henry Clay, Daniel Webster, Abraham Lincoln and U. S. Grant were boys, it would not be the worse for the moral and mental fiber of our people. We are not, indeed, likely to see such primitive times again, but from looking back upon them we may learn the truth that flush times are not always the best times.

The RURAL is flooded with inquiries from its readers in various parts of the coast as to the exact present condition

of things at the Midwinter Fair grounds, as to when will be the best time to visit the Fair, and as to what will be the necessary expense of time and money for such a visit. In reply: Although wonderful things have been accomplished in the ways of construction, road making, and setting up of exhibits, much remains to be done. All the buildings are completed and open, but not more than half the exhibits are in place and many have not even arrived at the grounds. There is naturally much confusion and much noise of hammering, trucking, etc., which renders it difficult to see the things already in place. It will probably take another two or three weeks to put the exhibits in complete shape; and while there is now much to see well worth the seeing, while the work of installing exhibits is of itself an interesting sight, we would advise those who intend making but a single visit, to postpone coming until such time as everything shall be in its place. The best months of the Fair will be March, April and May, and it would be difficult to say which of these months will be the better. Personally, we should prefer April, because there will unquestionably be a large attendance, and the crowd will in itself be a fine sight. As to the time required to see everything, four days ought to be sufficient. The distances are not great, and one ought to see everything worth notice in the time named. But since the value of the Fair lies not so much in the mere spectacle it affords as in the significance of that spectacle—since observation is really less important than study—it would be better to give a week or even two weeks to it, provided one can afford the time and money. The cost of admission, which must of course be paid each time of entrance, is fifty cents, and the cost of admission to the side-shows is in most cases twenty-five cents. Of these side-shows there are perhaps forty or fifty worth seeing. A visit to the Fair of four days, with attendance upon everything worth going to see, ought to cost about twelve or fifteen dollars. It can be done for less, and it can be made to cost twenty times that amount. The cost of living in the city is the same as at ordinary times. One may spend as much as he chooses, or, if he will economize carefully, he can get along respectably at very small cost. It should be said that perfect decorum is maintained at the Fair. Women, and even children, may visit the grounds unattended at all times, and be as safe from harm or annoyance as in the public streets.

The Wilson Tariff bill (including the income-tax proposition) passed the House of Representatives on Thursday of last week by a vote of 204 to 140. All the "ayes" were Democrats or Populists; and of the noes, 121 were Republicans, 17 were Democrats and two were Populists. The only California Democrat who stood out against his party associates was Geary, who declared that the measure was un-American and un-Democratic, and that it would be destructive or damaging to the leading industries of his State and district. The other California Democrat—Caminetti, Maguire and Cannon—voted without explanation for a bill which puts wool on the free list, which cuts off the bounty under which our beet-sugar interest has been developed, which reduces the tariff on prunes one cent per pound, which practically removes all protection for California raisins, which removes the measure of protection under which our olive groves have been developed, which opens the flood-gates of ruinous foreign competition with our vineyard products—in short, they voted for a measure which threatens to prostrate the leading industries of our State, and to impoverish its people, because their party leaders directed them to do it. What a curious mental and moral distemper must be that partisan spirit which can make men see a higher duty to their party leaders than to the interests of their own people!

The bill now goes to the Senate, where there is a temper, both political and other, very different from that which prevails in the House. As the membership now stands (allowing for the three vacancies), the Democrats have 44 votes, the Republicans 38 and the Populists three; or, counting the Populists (Peffer of Kansas, Allen of Nebraska and Kyle of South Dakota) with the Democrats, the party forces stand numerically 47 to 38. But it is certain that not all the Democrats will vote for the Wilson bill. Messrs. Hill and Murphy of New York are openly against it, and there are others who are expected to stand with them. There are in the Senate many Democrats who feel the truth of Mr. Geary's declaration that the measure is un-Democratic; that it is a departure from the principles for which many of them contended before Mr. Cleveland and Mr. Wilson were ever heard of; and that they have at least an equal right with the gentlemen named to determine what is and what is not party doctrine and party duty. Under these circumstances, and with the free field afforded by the Senate rules to debate and obstruction, the prospects of the bill seem to us very doubtful. To be plain, we do not believe the bill can be put through the Senate—at least not without such amendment as will

destroy its power for mischief. The fight will probably be long and bitter. It would not, in fact, be surprising if it were to consume the full year of life which remains to the Fifty-third Congress.

Methods of Marketing.

The Fresno Raisin-Growers Studying the Subject. The State Fruit Exchange Endorsed.

TO THE EDITOR:—The raisin-growers of Fresno county are bestirring themselves in the matter of co-operation in marketing their crop. Mr. Edward F. Adams, the manager of the State Fruit Exchange, held a conference last December with some of their leading men, and secured their endorsement of the plans of the exchange. There was a large delegation from Fresno at the mass meeting of Dec. 29th, which appointed directors for the exchange, of whom two are from Fresno county. January 27th there was a mass meeting at Fresno, called by some members of the Scandinavian Colony, in the interests of the State Exchange, at which a strong resolution was introduced, fully endorsing the plans of the State Exchange. The meeting, however, was compelled to adjourn without action thereon, there being a prior engagement of the hall for the afternoon.

In the meantime, Mr. Frank S. Johnson of this city had prepared an elaborate plan, having no reference to the work of the exchange, for concentrating the raisin product in the hands of a corporation, the eleven original directors of which seem to have been determined upon in private conference with the leading growers. A meeting to promote this movement had been called for February 3d, and when the other meeting adjourned it did so, by arrangement, to the same time, so that all sides of the subject could be presented at the same time. The result was a very large meeting, there being at times hardly standing room in the hall.

Mr. Johnson first presented his plan, or at least a portion of it, the essential features being that each raisin-grower should take stock in the proposed corporation to the amount of \$5 per acre, \$1 per acre being payable in cash and the remainder in notes—the latter, presumably, to be used as collateral for loans. With the cash raised, large warehouses were to be erected in Fresno, in which all raisins, when packed, were to be deposited, and sold by the corporation, which must, to be successful, control and have the sale of the entire product, or nearly that. No consignments were to be made, but the goods held in this State until sold. Mr. Johnson announced that the directors had already been selected, but did not announce their names. He stated, however, that should such a corporation be formed, he had assurances of the necessary funds to be advanced to the growers on their fruit in the warehouses.

Mr. Johnson was heard with interest, and the convention, by vote, expressed approval of his remarks and requested that the entire plan be printed in detail for further careful consideration.

Upon the conclusion of Mr. Johnson's address, Mr. Edward F. Adams, who was also present by invitation, briefly addressed the convention in explanation of the work of the Exchange, as heretofore fully described in these columns. After hearing Mr. Adams, the convention took up the resolution pending at the adjournment on January 27th, and unanimously adopted it as follows:

Resolved, That this meeting of raisin-growers cordially approves the objects of the California State Fruit Growers' Exchange, and undertakes to give it a hearty support.

A committee of seven, with Mr. D. T. Fowler—one of the directors of the Exchange—as chairman, was then appointed to take charge of the work of organization, and to carefully consider all plans which may be proposed, cause them to be printed and circulated, and report upon them to some future convention. Mr. Johnson and Mr. Adams both received the thanks of the convention for their attendance.

The work of organizing the county in connection with the State Exchange will go forward vigorously from now on. On Wednesday, February 14th, Mr. Adams will speak at some point to be determined in Fresno county, and from that on every day or evening, at points to be previously arranged by the committee, until the whole county has been covered, and, it is expected, local associations established wherever they ought to exist.

The work of the Exchange has no reference to that proposed by Mr. Johnson, but will greatly facilitate its execution, should it finally prove acceptable and practicable. The Exchange does not care how the goods are handled, or by whom sold, so long as it is done in the growers' interest. The first step in concentration is to get neighborhoods together, and this work the Exchange is now engaged in. These local associations, when organized, will be in the best possible shape to consider and adopt either Mr. Johnson's plan or any other which seeks to promote further concentration and control.

J. W. D.
Fresno, Feb. 5, 1894.

PAPERS in a suit to establish the ownership to the waters of Santa Ana river have been served at Riverside. The suit is brought by the Anaheim Union Water Company and Santa Ana Irrigation Company, both corporations of Orange county. The two companies lay claim to 12,000 inches of water running in the Santa Ana river; and it is to have this claim established that suit has been brought.

A FARMER living near Harrington, Lincoln county, Wash., helped steal his own pig the other night. He was awakened from his sleep and asked by two men to assist them in loading a hog which had tumbled out of the crate in their wagon. He willingly gave a helping hand, and returned to quiet slumbers. The next morning he went out to feed his porker, but there was no porker to feed.

The Dairy Industry of the United States.

Its Remarkable Growth During the Last Decade.

One of the greatest industries on the farms of the United States is the dairy industry, and the life of the nation is probably more dependent on the cow than on any other one thing. The milk supply of our large cities is, of itself, a great industry, and the numerous railroads running out from every city are the means of solving this problem. Yet far greater is the dairy industry of the country at large, not only in the supply of milk for each dairyman and cow owner, but in the manufacture of butter and cheese.

The census of 1890 was the only complete inquiry ever attempted. Every farmer, or other cow keeper, was required to state the total quantity of milk he produced in 1889, amount sold for consumption in families, amount sent to creamery or factory, quantity used on farm (including for butter and cheese), and amount of milk used on the farm in raising cream for sale. Relative to cream, enumerators were obliged to ascertain amount sent to creamery or factory, and disposed of in other ways; butter made on the farm and how much of it was sold, and the same for cheese. Only a few of the totals have yet been compiled by the Census Bureau, and the following tables contain a summary of this data as compiled by the *American Agriculturist* and first published in that journal:

SECTION.	MILK COWS. (Last 900 omitted.)			MILK.* (In millions of gals.)		
	1890.	1880.	1870.	1890.	1880.	1870.
New England.....	892	747	643	338.9	61.7	91.1
Middle.....	2,562	2,472	2,214	1,107.5	285.1	156.4
Southern.....	4,167	3,400	2,471	840.7	13.9	4.8
Central.....	3,762	2,991	2,248	1,422.9	132.0	36.9
Northwest.....	956	344	143	283.6	2.0	.4
Western.....	3,596	2,095	921	1,027.3	21.2	1.8
Pacific Coast.....	502	297	229	166.1	12.8	4.0
Mountain.....	166	97	66	32.6	.9	.1
Total.....	16,512	12,443	8,985	5,209.5	630.0	235.5

SECTION.	BUTTER.* (In millions of lbs.)			CHEESE.* (In thousands of lbs.)		
	1890.	1880.	1870.	1890.	1880.	1870.
New England.....	63.3	65.4	49.5	1,908	6,344	11,191
Middle.....	185.3	202.6	177.4	4,788	9,440	23,953
Southern.....	211.2	120.6	61.4	586	464	502
Central.....	277.0	220.8	166.2	3,007	6,295	12,378
Northwest.....	56.2	22.0	10.2	1,346	641	266
Western.....	189.9	115.5	48.5	2,550	2,074	1,665
Pacific Coast.....	35.1	17.9	9.7	4,209	2,829	3,492
Mountain.....	6.7	2.4	.8	332	184	145
Total.....	1,023.7	777.2	514.0	18,726	27,271	53,492

*Total produced or made on farms.

Butter Increases, Cheese Decreases.—In 1879 a large percentage of the cheese was made on the farms, but in the next ten years the conditions changed materially, and probably the greater proportion of cheese is now made in factories. Even with the large increase of butter factories the production of butter on farms increased 30 per cent during the decade, while the production of cheese decreased 31 per cent.

The Milk Manufactured.—The butter made on farms in 1879 was 777 million pounds and 27 million pounds of cheese, while in 1889 the production of butter reached nearly 1,014 million pounds, and cheese had fallen to less than 18½ million pounds. Making a liberal estimate of 25 pounds of milk for one pound of butter, and 12½ pounds of milk for one pound of cheese, we find that there were used 2,470 million gallons of milk in 1879, and 3,186 million gallons in 1889, in the production of butter and cheese on farms. Taking this amount used in 1889 from the total production of over 5,209 million gallons, and it leaves 2,023 million gallons of milk used in making butter and cheese in factories, and otherwise consumed.

Extent of the Whole-Milk Traffic.—Now, granting that the increase in the amount of milk used in butter and cheese factories was as much as the increase of butter made on farms, viz.: 30 per cent, or the decrease in cheese (and it must have been fully as much, if not more), and we would find that about 689 million gallons was used for this purpose. This would leave, then, about 1,334 million gallons to be consumed in cities, villages and on farms.

With a population of 63,000,000 inhabitants, this indicates a per capita consumption per annum of about 85 quarts of milk as whole milk. Adding five quarts for the milk produced by the cows owned in cities and villages (not on farms), and our milk trade is about 90 quarts per head of population per year, worth to the farmer say \$2.50 and costing the consumer about \$5. This indicates that producers get about \$150,000,000 for the milk that represents to consumers a value of \$300,000,000.

No comparison can be drawn between the total production of milk for the two census years, for the figures have been taken so differently, but it is valuable to know the total product as shown in the accompanying tables. A study of the tables discloses some interesting facts.

There has been an enormous falling off in the production of cheese on farms, not only in New England and the Middle States, but in the Central ones as well. This is accounted for, as we have said, by the increased quantity made in factories. But a further study shows there has been a decrease in butter production on farms in New England and the Middle States. This can be accounted for not alone by the increase of creameries, but from the fact that the large cities of New York, Philadelphia, Brooklyn, Boston, and many smaller ones, consume much more milk than formerly.

The number of milk cows shows an increase in every section, but this gain is greatest in the newer parts of our country. The increase of dairy products is not due alone to the increase in the number of milk cows, but also to the improved condition of the same and better care and feed. According to the figures given the average yearly production per cow is but 31½ gallons of milk, or 1262 quarts, or 2682 pounds. Allowing 25 pounds of milk to

a pound of butter, this is equivalent to 107½ pounds of butter, and with the very liberal allowance of 20 pounds of milk for a pound of butter, the yield is raised to but 134 pounds. Progressive dairymen now concede that there is no profit unless their cows yield 200 to 300 pounds of butter per year.

How to Lay Off an Orchard.

Mr. G. W. Mosteller of Ventura gives the following directions for laying off an orchard:

A number of orchardists have asked me to give the most approved plan of staking off an orchard by the equilateral triangle method. I think the following the most expeditious plan, but will not do for hilly or stump land: Determine the length and width of plat to be staked off. Get two No. 12 galvanized steel wires of corresponding length and width of orchard. One of the wires is to be used to establish base line, and to establish each row of stakes across the orchard. Let us call this the base line wire. You will need marks on this wire exactly the width the trees are to stand apart. Waxed string wrapped round and round at each distance will do, but it is better to use a bit of cloth at these marks, made secure so as not to slip, by wrapping waxed string over and under so as to secure it, yet so as to be plainly visible. Now, as you wish to plant in equilateral triangle form, place string and bits of cloth of other color half way between the marks noted above. Stake this base line row at each alternate mark. The other wire is needed to stake the two sides the distance the rows—not the trees—are to be apart. This is determined by multiplying the distance apart the trees are to stand by .866. To illustrate: Suppose the planter wishes to plant at 30 feet apart each way; multiply .866 by 30 feet equals 24.98 feet—almost 25 feet from row to row; so the stakes in this case at the sides of plat will be 24.98 feet apart and must correspond with marks on the second wire. To get other distances apply the same rule. But you cannot establish these side stakes till you square the plat of land to be planted. To do this, saw three straight strips of board, one 6, one 8 and one 10 feet long. Nail the two shorter at right angles and join them across the angle with the 10-foot strip. Place this right angle frame with one base on base line at the corner of the plat and the other base of triangle enables you to establish the square. Use the second wire to aid you. Now set stakes to correspond with marks on the wire. Take this wire to opposite side of plat and do as before. You are now ready to stake off the plat. Return to the base line wire. Have a man at each end to move and stretch the wire into line with next stake on sides. Make tight and secure the wire, then stake this row at the alternate marks from the base row. Be sure to carry the wire straight at one end continually, allowing the other man to give or take slack. Continue this until the entire block is staked. Might divide a large orchard into 40 to 50 acre blocks. If the orchard be small, you can get along without the use of the side wire—by measuring carefully with a short wire. To determine the number of trees per acre when set "diamond" form, first get the number required as if set the same distance square form, and divide it by .866. To find number square form, square the distance between the trees and divide 43,560 by it.

Cloverdale Citrus Fair.

Following is a list of the premium awards of the citrus fair held at Cloverdale last week:

1. Best display of Navel oranges, John Field, \$7.
2. Best display of citrus fruits, Italian-Swiss Colony, \$7.
3. Second best display of Navel oranges, M. Menihan, \$5.
4. Best display of 12 lemons, H. H. Hubbard, \$2.
5. Second best display of lemons, Mrs. G. Ginocchio, \$1.
6. Best display of assorted varieties of oranges, W. T. Brush, \$2.
7. Second best display of assorted varieties of oranges, Mrs. H. F. Gerkhardt, \$1.
8. Best display of 12 Navels, H. M. F. Haney, \$2.
9. Second best display of 12 Navels, F. Yordi, \$1.
10. Best display of 12 Mediterranean Sweets, Mrs. L. J. Cook, \$2.
11. One plate of fine Mediterranean Sweets, H. H. Hubbard, \$1.
12. Display of Cloverdale Seedless Seedlings, J. C. Holloway, \$2.
13. Best cluster of oranges, I. E. Shaw, \$2.
14. Mechanical design in dried fruits and olives, George and Harry Kleiser, \$2.
15. Unique design of a prize fighter in oranges and raisins, E. G. Furber, \$1.
16. Artistic display of oranges and dried fruits, Millie and Bertie Hagmayer, \$1.
17. Best display of dried fruits, Mrs. D. M. Wambold, \$2.
18. Creditable display of dried fruits, W. D. Sink, \$2.
19. Best display of canned fruit, Mrs. Mary Holloway, \$2.
20. Best display of Tahiti oranges, Miss Kate Armstrong, \$1.
21. Best display of almonds, J. C. Holloway, \$1.
22. Best display of walnuts, J. C. Holloway, \$1.
23. Best display of prunes, Turner Bros., \$2.
24. Artistic arrangement of oranges, I. E. Shaw, \$1.
25. Best and most artistic design and display of oranges, fruits and flowers, Mrs. A. Bentley, \$2.
26. Meritorious display of Navels, J. W. Atherton, \$2.
27. Neat design, obelisk in oranges, Mrs. G. Ginocchio, \$1.
28. Meritorious display of figs, G. Hunziker, \$1.
29. Meritorious display of seedling oranges, Mrs. E. Preston, \$1.
30. Best display of apples, H. J. Dunham, \$1.
31. Second best display of apples, Mrs. C. B. Gallagher, \$1.
32. Best display of pears, M. Weaver, \$1.
33. Meritorious display of fruits and vegetables, W. H. McCray, \$1.
34. Basket of citrons, Mrs. C. Worth, \$1.
35. Creditable display of vegetables, John Elden, \$1.
36. Excellent display of Japanese oranges, G. Hagmayer, \$2.

It is officially announced that the winter wheat area has increased in twelve departments of France, compared with 1893, and decreased in twenty-eight. The condition of the crop is excellent in thirty-four departments, good in forty-eight and fair in three. The rye area has increased, and the prospects for the crop are good.

Petaluma is preparing to hold a poultry show. It is reported that exhibits are coming in very rapidly.

Prizes at the Northern Citrus Fair.

Much interest was manifested last week upon the announcement of the decision of the committee of awards at the Northern Citrus Fair on the Midwinter Fair grounds. There was also some little ceremony over the event. The Exposition band presented a brief concert, and then J. K. O'Brien, superintendent of the Northern Fair, made the opening speech. He said that there would be no ill feeling on the part of the exhibitors who might not receive prizes. "All understand," he said, "that no section of the world could produce the material for a finer display, and those who fail to receive prizes will know that they did not take sufficient care in selecting the fruit for this exhibition."

He introduced Director-General de Young, who spoke but a moment, and then Chairman Lelong read the prizes, as follows:

REPORT OF COMMITTEE ON AWARDS.

The committee on awards for the Northern Citrus Fair has completed its labors and reports the following awards:

CLASS 1—COUNTY EXHIBITS.

Best display of citrus fruits from any county—First premium, \$500, Butte county; second premium, \$400, Placer county; third premium, \$300, Solano county; fourth premium, \$200, Sacramento county; fifth premium, \$100, Yuba county; sixth premium \$75, Colusa county; seventh premium, \$50, Tehama county.

CLASS 2—ARTISTIC DISPLAYS.

Best artistic display of citrus fruits by any one person, firm or organization—First premium, \$100, Northern Citrus Association; second premium, \$75, Thomas B. Hall, Sacramento; third premium, \$50, R. W. Skinner, Yuba; fourth premium, \$30, Charles F. Wyer, Solano; fifth premium, \$20, Palermo Land and Water Company, Butte; sixth premium, \$15, Oroville Citrus Association, Butte; seventh premium, \$10, J. Cleveland, Butte.

CLASS 3—BUDDED ORANGES.

Best general display of budded oranges grown by exhibitor—First premium, \$100, Palermo Land and Water Company; second premium, \$75, Oroville Citrus Association; third premium, \$50, Butte County Infirmary; fourth premium, \$30, Parker Whitney; fifth premium, \$25, W. A. Rogers; sixth premium, \$20, Auburn Orange Company; seventh premium, \$15, A. F. Jones; eighth premium, \$12.50, H. S. Kirk; ninth premium, \$10, Orange Vale Colony; tenth premium, \$7.50, G. A. Fisher; eleventh premium, \$5, F. M. Buck.

CLASS 4—SEEDLING ORANGES.

Best general display of seedling oranges grown by exhibitor—First premium, \$75, A. F. Jones; second premium, \$50, Butte County Infirmary; third premium, \$40, James Obrien; fourth premium, \$25, Mrs. C. Martell; fifth premium, \$20, Owen R. Owens; sixth premium, \$15, R. Ketchum; seventh premium, \$10, Excelsior Water and Mining Company; eighth premium, \$5, Sackett Brothers.

CLASS 5—LEMONS.

Best display of lemons grown by exhibitor—First premium, \$50, E. Tucker; second premium, \$25, F. M. Buck; third premium, \$20, Hirst ranch; fourth premium, \$15, Sackett Brothers; fifth premium, \$10, Oroville Citrus Association; sixth premium, \$5, Lucien Christian.

CLASS 6—LIMES.

Best display of limes grown by exhibitor—First premium, \$20, Excelsior Water and Mining Company.

CLASS 7—PACKED ORANGES.

Best two boxes of packed oranges ready for shipment—First premium, \$15, not awarded; second premium, \$10, Oroville Citrus Association.

CLASS 8—WASHINGTON NAVELS.

Best 30 Washington Navel oranges grown by exhibitor—First premium, \$12.50, C. P. Wilson; second premium, \$10, Oroville Citrus Association; third premium, \$7.50, N. W. Winton.

CLASS 9—MEDITERRANEAN SWEETS.

Best 30 Mediterranean Sweet oranges grown by exhibitor—First premium, \$12.50, J. Parker Whitney; second premium, \$10, Auburn Orange Co.; third premium, \$7.50, Butte County Infirmary.

CLASS 10—BLOOD ORANGES.

Best 30 blood oranges grown by exhibitor—First premium, \$12.50, W. J. Greer; second premium, \$10, W. A. Rogers.

CLASS 11—MANDARINS AND TANGERINE.

Best thirty mandarin or tangerine oranges grown by exhibitor—First premium, \$12.50, Orangevale Colony; second premium, \$10, Mrs. P. A. Hearst; third premium, \$7.50, W. J. Greer.

CLASS 12—OTHER BUDDED ORANGES.

Best thirty other budded oranges grown by exhibitor—First premium, \$12.50, Orangevale Colony; second premium, \$10, Auburn Orange Company; third premium, \$7.50, Orangevale Colony; fourth premium, \$5, Orangevale Colony; fifth premium, \$2.50, Orangevale Colony.

CLASS 13—SEEDLING ORANGES.

Best thirty seedling oranges grown by exhibitor—First premium, \$12.50, James O'Brien; second premium, \$10, E. W. Fogg; third premium, \$7.50, Ed. McClarkey; fourth premium, \$5, Excelsior Water and Mining Company; fifth premium, \$2.50, A. F. Jones.

CLASS 14—LEMONS.

Best thirty lemons grown by exhibitor—First premium, \$12.50, A. F. Jones; second premium, \$10, Sackett Bros.; third premium, \$7.50, Orangevale Colony.

CLASS 15—POMELOS, SHADDOCKS, ETC.

Best exhibit of pomeles, shaddock and grape fruit grown by exhibitor—First premium, \$15, D. H. Arnold; second premium, \$10, Auburn Orange Company; third premium, \$5, E. Tucker.

CLASS 16—CITRUS NURSERY STOCK.

Best display of citrus nursery stock grown from seed by exhibitor—First premium, \$20, H. C. Bell; second premium, \$15, Oroville Citrus Association; third premium, \$10, Fred C. Miles.

In class 6, best display of limes grown by exhibitor, but one award was made, there being but the one exhibit that met the requirements according to the rules adopted.

In class 7, best two boxes of packed oranges ready for shipment, only one award was made, that of the second premium, none of the packs reaching the standard required for shipment. In other cases the fruit was packed in the boxes without grading, all sizes being packed in the same box.

In class 10, best thirty blood oranges grown by exhibitor, a number of entries were made, but only two of them proved to be blood oranges, and the third premium was therefore omitted.

B. M. LELONG,
E. W. HILGARD,
DAVID E. ALLISON,
Committee.

JOHN ISAAC, Secretary.

WE READ that Professor Fox of the Idaho University has seed of corn that has a history. Two kernels of corn were found in an Indian mound, and, when planted, one grain produced two ears. The seed Professor Fox possesses is from one of the ears. We fear this corn is first cousin to mummy wheat.

FRUIT MARKETING.

Concerning the Sale of California Fruits.

TO THE EDITOR:—At about this season of the year the fruit-growers talk of organizing and combining in order to secure better markets, and consequently better prices for their fruit.

Organizations have now been formed in every part of the State where required. Earnest men are striving to assist the growers to better markets, and yet, while a great deal has been done in the right direction, there is still much to do; indeed, in considering the amount of work done in the State in organizing the growers and marketing the fruit, it seems to me the result has not been as satisfactory as it ought to have been. How can we account for this?

It is evident that while we have been working so hard at this end of the line of shipment, we have not worked hard enough at the other end where our markets are. We have, in a degree, failed to realize the wonderful increase in fruit production in this State, and the necessity for a corresponding increase of markets for it, and the consequence is our shipments have been too large for our markets.

The "mountain" market will not come to us, so we must go to the mountain. It has been said on high authority that more than a hundred cities in what we call the East, having 2500 inhabitants and over, have never yet seen in their markets a pound of California fruit, and yet no special effort has been made to develop those markets.

The truth is, that with all the organizations of fruit-growers in this State, few if any have kept the business in their own hands and followed their fruits to market; in other words, they have done the purely mechanical part of the work, while the all-essential part which belongs to the other end of the route they have left to agents, who, too often, have allowed the fruit to accumulate in such quantities in the larger cities that it has been necessary to slaughter it, always with great loss to the grower.

When a market has been injured by a glut, we are not to understand that the loss in that instance is all there is of it; the market has been disorganized and the prices will not get back to the paying point again that season. This shows a lack of necessary knowledge or a lack of principle on the part of some one. Now, what is to be done—manifestly to develop the markets which the more than a hundred cities offer, and relieve the great centers when fruit is usually rushed. If this is done, there need be no more gluts, no cry of overproduction. What we require is a market so large, so extensive, that we shall find it difficult to supply it. Then there will be a demand for our fruits and consequently better prices. This is a self-evident fact, but I doubt if it is sufficiently realized. But can we open the markets in the cities named? Most assuredly we must do it if we are to dispose of this year's crop. A half-dozen competent and reliable men, sent by the growers, who have also the welfare of the fruit industry of California at heart, should visit as many of those new markets as possible, and select from the best and most competent local dealers in the city one to act as agent for the sale of our fruit, and convince him it would be to his benefit as well as ours to push the sale of the fruit. One carload to that city will be the entering wedge. Once established, others will follow in the same manner, and the market will go on increasing yearly in proportion to the increase of fruit.

It is folly to wait for those markets to come to us. It is a fact that the great majority of the inhabitants of the great West and East know very little of California and its products, and this in spite of all that has been said and written during the last 30 years, and there is no likelihood that they will know very much more in the next score of years unless their attention is specially called to California and its productions. Of course the larger cities, including Chicago, are growing rapidly and will require more and more fruit each year, but they can consume but a small proportion of the enormous increase in each year's crop. There is one plan which, if put in operation, would, I think, prevent gluts in the market and greatly facilitate the marketing of all our fruit in many ways.

Let the producers of the State establish a Central Agency near the great center of fruit shipment, the duty of which shall be to superintend the shipment of deciduous fruits from the central part of the State; to regulate, if necessary, shipments to all secured markets and develop new ones; to regulate all shipments, that fruit shall not compete with itself, and thus prevent gluts. Every carload for shipment should be reported to the Central Agency and placed in its hands for shipment to market; it should inform itself thoroughly as to the condition of the market and obtain all the information possible on all matters relating to the shipment of fruit. By this means, fruit will be shipped only where it is needed and we would avoid much unnecessary loss. I cannot see why every shipper should not heartily enter into the plan, for it would be to every one's advantage. If objections come, they would probably be from those shippers who are speculating on the growers' labor. The trouble has been that each shipper has sent his fruit to any market without the least information as to where others were shipping. Of course there was often a clash, and I verily believe that more than half the losses of previous years could be traced to this lack of information as to where others were shipping, as well as themselves. No organization would be needed in creating this Central Agency, though a convention might be called to perfect the scheme. Every one who shipped through the Agency might be subjected to a trifling tax on the amount of fruit he shipped, to pay expenses. The only money needed directly would be that for payment of expenses of agents securing new markets at the East. There are abundant shipping facilities already in operation to handle all our fruits.

Penryn, Jan. 31, 1894.

A. P. HALL.

[If our correspondent will read the by-laws of the State

Fruit Exchange, recently organized and now being put upon its feet (published in the RURAL PRESS of Jan. 20th), he will see that it is proposed to do just what he suggests, namely, to supply the Eastern markets with California fruits direct from a Central Agency in this State, organized by and acting in the interest of the fruit-growers. This is the mission of the State Fruit Exchange; and it starts with so good a plan, it is so earnestly supported and it is in such practical hands that success seems to us a result inevitable. From the beginning of the movement our only fear has been that it might fall under inefficient management, but that danger is passed, for in the whole State of California there is not, in our judgment, a man so well suited to carry on this particular enterprise as is Mr. B. F. Walton, who is to be its active head. In his own locality he has made co-operation a grand success, and we do not doubt that he will do it in the wider field which is now to engage his energies.—EDITOR RURAL.]

THE APIARY.

Proceedings of the State Beekeepers' Convention.

The RURAL is indebted to J. F. McIntyre, president, and John H. Martin, secretary, of the State Beekeepers' Association for an outline of the recent convention at Los Angeles, from which we take portions which seem to us of general interest. At some future time we hope to present more in detail some of the papers presented at the meeting.

Bees and Fruit.—A paper was read by Francis W. Blackford, entitled "Is the Honey Bee in California the Fruit Producer's Enemy?" This was followed by a discussion.

It was claimed that with proper protection of drying fruit that the damage done by bees could be greatly reduced. It had been observed that there was a dozen yellow jackets to one bee in many instances, but the bee was the only offender to receive the blame. It had been demonstrated by repeated experiments, that bees were of more use in the fertilization of prunes than in the damage they could do to the drying fruit.

Following this discussion Mr. Cory read a paper upon the topic "Bees and Fruit Drying." It was suggested by Mr. Brodbeck that the drying fruit should be covered with cloth.

Mr. McIntyre figured that it would take 4480 yards of cloth to cover an acre, at a cost of \$121, which was considered as a little too expensive a remedy.

Mr. Levering presented some pertinent facts in relation to the utility of the bee in fertilizing the orange blossom. Specimen oranges were shown, demonstrating that the Navel and Malta Blood oranges were changed or mixed by this interchange of pollen. The same effect is produced upon watermelons and pumpkins.

Mr. G. B. Woodbury was appointed a committee to prepare for publication and general distribution points in relation to the value of the honey bee in the fertilization of fruit blossoms.

President McIntyre read his annual address and touched upon several points of vital interest to the beekeepers of the State, upon which action was afterward taken by the various committees.

Foul Brood.—An ordinance, No. 47, adopted by the San Bernardino Board of Supervisors, giving wide powers to its inspector of foul brood, for the extermination of the disease, was read by the secretary. A resolution was adopted as follows:

Resolved, That the members of the State Beekeepers' Association cordially approve the action of the San Bernardino County Board of Supervisors in the appointment of foul brood inspectors in said county, with unreserved power to eradicate this disease. And we would further commend this action to other counties in this State, in the passage of a similar ordinance.

Tare on Honey Cases was the next topic by Mr. Cory. Mr. Touchton spoke in favor of concerted action in relation to establishing a uniform tare.

Mr. Levering said we should allow tare only on the cases and not on cans, for they were sold again for other purposes for full value. Dealers wanted three cents tare on cans that weighed less than two and a half pounds. This excess was unjust and unfair.

Mr. Mendleson figured that he lost 1438 pounds on his crop of honey by this unjust tare.

A Form of Hive Approved.—Mr. Cory was called upon to describe the hive used in Ventura county, and which is a standard for that county. This hive contained nine Langstroth frames in the brood chamber and eight in the super.

Mr. Touchton said he brought this hive into existence, and it is known as a modified Langstroth. The frame of this hive is of the following dimensions: Top has 19½, bottom has 17½, end has 8½.

Upon a rising vote for the adoption of this hive by the beekeepers of the State, 17 voted aye, with no opposing vote.

Mr. Mercer advocated a shallow devisable brood chamber hive for comb honey; he uses a hanging frame six inches deep.

Mr. Woodbury claimed that he lost many pounds of honey by using a large brood chamber. The bees are determined to fill the outside frames before going into the super, while with a shallow hive the bees are compelled to go into the super to store their honey. He uses a hive 4¾ inches deep, or a frame that will take a 4¼-inch section.

Mr. Hatch preferred a large brood chamber for comb honey. He interchanged frames and spread brood until he filled the hive with bees.

Mr. Rowley spoke in favor of the Heddon hive for the

production of comb honey, for the reason that the bees would put all the honey in the super.

Mr. Woodbury uses two of these chambers for brood, or even more, and thus escapes the use of handling frames; in fact, this system was called the handling of hives instead of frames.

Mr. Compton, foreman of Mr. Heddon's apiaries for several years, spoke in favor of the Heddon hive, and would use it in preference to any other.

Mr. Cory preferred the good old way of examining frames, and he had no desire for these new-fangled methods.

Mr. Barnett preferred to use dummies to contract the brood chamber of a large hive. The shallow-chamber advocates considered this plan as of too complicated a nature.

Bee Escapes and Honey Boards.—The question, "Shall we use bee escapes and honey boards?" called out much discussion.

Mr. Cory did not wish to use only one, and thought they were not of much use as labor savers. He could brush bees off the combs quite rapidly.

The secretary used the escape and queen-excluder with success. He preferred to use it on hives having two supers above the brood chamber. The escape was put on the hive at night and the next morning the bees were usually all out. The hive could then be readily removed to the extracting-room, making the work through the heat of the day in the comfortable shade of the house.

Mr. Burnett used a home-made escape and used no queen-excluder. He never had queens get into his supers, but thought the escape a good thing to clean the supers of bees when working them for comb honey. The bees were not so liable to bite the caps of the cells.

Mr. Powell believed that bees would not bite the cap-pings if they were driven out rapidly with smoke. His plan was first to smoke them down, placing an empty super under the one to be removed. When the most of the bees had gone down, the smoke was blown into the under side, and all of the bees were driven out. He claimed that this method was very expeditious.

Which is the Best Bee.—The question of the merits of Golden Italian bees was then taken up.

Mr. Williamson called this strain of bees red devils. Mr. Rowley claimed that this strain of bees capped their honey thinner than the black bees. Mr. Powell said black bees capped their honey so as to leave an air space under the cap, giving it a very white appearance.

President McIntyre advocated breeding a superior race of bees, and always sought to find the best. Had ordered queens from all the noted breeders, and held fast to that which is the best. He considered the Syrian crossed with the Italian as the best all-purpose bee. He believed in rearing large queens, and his queens were of such size that only 1 in 400 came through perforated zinc honey boards. His queens were reared from colonies that were superceding the old queen; selects one having plenty of cells and larvæ; uses the Doolittle cell cups, and transfers a good quantity of royal jelly with the larvæ. The cells were completed while the old queen was still in the hive. The cells should be hung between combs filled with larvæ.

Mr. Searles preferred Albino bees to any other for gathering honey.

In Mr. Levering's experience, the Holy Land and Italian bees will fly farther for honey than blacks, and many times will work by moonlight.

President McIntyre had tried the Carniolan bees, and found them good honey gatherers; but as he had a good strain of Italians he did not wish to mix the varieties.

Mr. Brodbeck had raised queens successfully in the super above the queen-excluding honey board.

Can We Get Better Bees?—A resolution was adopted upon the appointment of an agent to visit foreign countries to search for new races of bees, as follows:

In consideration of the probability or at least the advisability of the appointment by our Government of an agent to be sent to foreign countries in search of beneficial insects; therefore be it

Resolved, That this association would respectfully ask that Frank Benton be appointed to that position, with authority to include in his investigations such facts concerning the different races of bees as well as other matters of interest that may give promise of benefit to the apian industry of this country.

To Prevent Robbing.—Mr. Parnett found that fresh paint daubed on the hive around the entrance was a preventive. Mr. Touchton used a handful of wet grass. President McIntyre used a trap, removed the hive that was being robbed, put in its place the trap and caught all the robbers. At night the robbers were released and seldom commenced operations the next day.

Mr. Wilkins could usually pick out a queenless colony by noticing the robber bees that were prying around.

An Acquisition to California Agriculture.—Prof. A. J. Clark, recently from Michigan, after a few personal and happy remarks, read an address on "The Bee-Keeping Industry of California." Prof. Clark is now teacher in the college at Claremont, and will take a lively interest in the welfare and promotion of the beekeeping industry of this State.

The general committee on resolutions, consisting of Allen Barnett, chairman; G. A. Millard and W. T. Richardson, presented the following:

WHEREAS, Agriculture in California is so different from that of other States, and as the industry is assuming such proportions in this State, and especially the southern part, be it therefore

Resolved, That steps be taken to have an experimental station established in southern California.

Resolved, That Prof. Clark be designated as a proper person to take charge of the same, and that if possible the same be connected with the college at Claremont.

Adulteration of Honey.—Mr. Mercer showed a small can of glucose which was as clear as water. He stated that he obtained it in San Francisco, where dealers made no secret of using it for the adulteration of honey.

Mr. Wilkins moved that a committee of three be appointed to draw up resolutions and take measures to have laws passed for the suppression of this evil. This was done and the following adopted:

WHEREAS, It is known that the adulteration of honey is detri-

mental to the consumer and producer; and whereas, it is the sense of this committee that in order to bring the influence of this convention to bear on this subject, be it therefore

Resolved, That the adulteration of honey by any member of this association shall be prohibited and subject the offender to expulsion.

Mr. Levering said there was much adulteration of honey in Los Angeles; that to his certain knowledge one of the leading firms dealing in honey had used five carloads of glucose in adulterating, mixing at the rate of one can of glucose to three of honey.

Subsequently the following resolutions on adulteration were adopted:

Whereas, We learn that the adulteration of extracted honey—happily comb honey—is so exquisitely and delicately fashioned that it cannot be adulterated—with commercial glucose is extensively practiced in the city of San Francisco by the wholesale dealers of the Pacific Coast; and,

Whereas, Such honey is sold as "honey," or more generally "pure honey;" and whereas, such adulteration is a serious injury to the market of the genuine article, first, by crowding the market with an inferior article, and second, by causing a general distaste for honey because of this inferiority; therefore,

Resolved, That we continue a committee on adulteration of honey who shall make all possible effort to secure laws, both State and national, which shall make it a criminal offense, punishable by both fine and imprisonment, to sell such adulterated honey, except under a label which shall state just what the article is.

Resolved, That the chemical department of the Experiment Station be requested to aid us in this matter by performing an analysis of suspected honeys, and by suggestions and advice.

Resolved, That every effort be made to have the Paddock Pure Food law re-introduced into Congress and passed to a speedy passage.

Honey Crop and Cost.—Prof. Cook called for averages of the honey crop for a series of years. Several averages were given by Messrs. Cory, Wilkins and Moffatt, the following being a sample: 1876 good, average 250 pounds per colony; '77 total failure; '78 a good season; '79 failure; '80 good; '81 poor, 100 pounds per colony; '82 good; '83 poor, 100 pounds per colony; '84 best, 400 pounds per colony; '85 failure; '86 good; '87 failure; '88 failure; '89 good; '90 good; '91 fair, 200 pounds to colony; '92 failure; '93 fair, 150 pounds to colony.

It was ascertained that the honey yield depended upon the amount of rainfall. The more rain the better the crop. Late rains added bright prospects for a large yield. The rains of most value were when distributed through the winter.

Mr. Cory discussed the cost of the production of a ton of honey. According to his figures the cost was near \$250.

Marketing Honey.—The following report of the marketing committee was then read and adopted:

In regard to marketing our honey, we recommend that this association appoint a committee to correspond with the California Fruit Exchange, to ascertain on what terms this association, or members thereof, will be admitted to the Fruit Exchange, for the purpose of handling our honey; said committee to report to the executive committee of this association, who shall have power to act.

In regard to the adulteration of honey, we would recommend that we endeavor to secure the passage of a law similar to the law now in force, in regard to the adulteration of olive oil.

We would further recommend that the beekeepers of California become members of the American Beekeepers' Union, thus assisting to promote means to prosecute violators of the law which we have recommended.

We further recommend producers, as far as possible, to pack their honey for market in shape to reach the consumer in the original package.

We recommend that the tare on honey be limited to the actual weight of the case, and that said weight be plainly marked on each case.—John G. Cory, Robert Dunn, L. T. Rowley, C. H. Clayton, R. Wilkins.

The president appointed a committee to correspond with the California State Fruit Exchange, in view of having a representation in said organization, as follows: W. A. Pryal, J. H. Martin, Geo. W. Brodbeck.

Election of Officers.—The election of officers for the ensuing year resulted as follows: President, Prof. A. J. Clark, Claremont; Secretary, J. H. Martin, Bloomington; Treasurer, J. F. McIntyre, Fillmore; Vice-Presidents—G. P. Woodbury, Los Angeles county; W. T. Richardson, Ventura county; R. B. Herron, San Bernardino county; R. Powell, Riverside county; W. A. Pryal, Alameda county; Executive Committee—R. Wilkins, Ventura county; F. W. Brodbeck, Los Angeles county.

THE FIELD.

American Seed Growing and California's Achievements Therein.

W. Atlee Burpee & Co. of Philadelphia have issued an interesting paper on "Selection in Seed Growing," which, among other good things, presents in full the essay on "American Seed Growing," by C. C. Morse of Santa Clara, Cal., which was read before the Seedsmen's Session of the World's Auxiliary Horticultural Congress at Chicago during the World's Fair. Mr. Morse's paper has peculiar interest to Californians and we publish it as follows:

In the presentation of this paper it seems to me that an elaborate history of early seed growing is not expected of me, nor many details of well-known and approved methods; but rather some criticisms upon some questionable practices, and commendation of such methods used by growers and seedsmen as should be approved, as well as what I believe to be some of the practical attainments of the near future.

All will agree that great advancement has been made in the production and distribution of garden seeds within this generation, for seed growing is taking definite shape as rapidly as any science that is before the world to-day, and I expect as many changes within the next decade as there has been in the last, accelerated with greater possibilities of development.

Seed growing as a definite business has assumed its position within the memory of most of us. Years ago the gardener would save a little seed—some of it volunteer—some from roots never transplanted; all from unknown

types and unknown varieties; and frequently after using the best vegetable crop the poorest would be allowed to go to seed and the product then sold or bartered with the neighbors for other kinds grown in the same manner. Of course, there were exceptions to this rule, for some gardeners would intelligently select the best vegetables, having the points of excellence well in mind, and would continue to select and grow some good seed, and would improve the types as fast as nature would permit.

The limited custom of distributing seeds would not admit of much profit to the grower, nor of any extended information to the people, especially to those most interested, since the seed business was carried on in a small, local manner, and the people were not informed by carefully written catalogues, nor by men traveling over the country in the interest of the seed houses.

Only a short time ago carrot seed was delivered with the beards on, and a very poor sample too; and lettuce seed was poorly cleaned, when half the bulk can now be sent to the chaff pile. In my observations I have seen some growers practicing some things too near the ancient methods to be approved. I have noticed some growing cabbage seed without transplanting after it had headed, and others marketing the head and growing seed from the stump. Some planted onions that had the appearance of having never matured, and allowed lettuce to grow so thickly that the plant could show no definite character—it would seem with the purpose of producing seed only, rather than promoting the quality of the vegetable.

Nature has provided that the coarsest, hardest, nearest approach to the wild nature will be the most abundant in the production of seed, while the finest grain and finest flavor will be very shy in producing seed; and the grower will not proceed very far before he will discover that the best vegetable seed cannot be produced as cheaply as the poorest. The difference is very great, and as long as competition is in price, instead of quality, progress will be greatly hindered, and the efforts of many seedsmen to obtain their supply lowers the cost of growing good seed and will be the greatest hindrance to advancing the quality of many kinds of vegetables.

The present custom of publishing fine catalogues is doing more to educate the people than any other custom that is before the world to-day. There may be some very extravagant things said in some catalogues, but they will not be harmful in the end, as they will teach all interested the trend of what is wanted by the public, and enable the producer to cultivate in that direction. These fine catalogues, the system of trial grounds in use by the large houses, the system of large growers subdividing their farms into specialties, each with a foreman, an expert in his division, and the growing conviction that each kind of seed should be produced in a climate where the vegetable attains the highest perfection—these all tend to raise the character and quality of the vegetable, as well as the sample of seed offered to the public.

Every seedsmen should have as complete a system of trial grounds as possible, where the vegetable can be grown to maturity, as it will quickly teach him who is supplying carefully grown seeds in an intelligent manner; and the person in charge of such grounds should be a man of large and comprehensive ideas, and as free as possible from petty prejudices and favoritisms.

It is not only to know that the seed germinates well; furthermore, the finest strains are liable to be of weaker germination than the coarser varieties. It is not, however, the case with all kinds, and a practical seedsmen knows where to draw the line. The demands of some seedsmen who expect seed to germinate nearly 100 per cent are a hardship and waste to the grower, and some accepted system should be devised whereby merchantable seed should be understood and agreed upon.

If we are to increase the seed business, we are first to educate the people how to grow the vegetable in the best manner possible, both as regards productiveness and quality. To some extent vegetables resemble fruit—if of good quality and approved by the consumer large quantities will be raised, and the better the vegetable the more sale there is effected, and consequently more demand for the seed; for example, careful selection has so improved one of our standard varieties of lettuce that it requires the product of 30 acres for our trade, while two acres seemed sufficient 15 years ago, and I have no doubt the same increase will be expected on many of the other varieties if given the same attention.

Take the history of the tomato as an article of food. Its introduction is within the memory of some of our seedsmen, and now it takes its position with the potato and the cabbage as a common article of food, for by selection and hybridization it has been changed from the little pear-shaped "love apple" to a magnificent fruit, affording a source of great profit to the farmer, gardener and canner, who put it into the hands of millions of this generation as a magnificent article of food, while it was entirely unknown to the generation that preceded us. Perhaps the same can be said of nearly every vegetable we grow. The introduction is not very remote, and the development to the present attainment belongs to this generation.

Garden seed should and will be grown in a climate that is most favorable to the production of the vegetable. One favorable for the growth of vegetables where the seed is eaten (such as peas, beans, etc.) would be one that induced rapid growth, for we know that the seed is wanted as soon as possible after sowing, as it is the seed only that is sought by the gardener, and it would be difficult to get an early sort where vegetables grow slowly. For the class of vegetables of which the substance is eaten or used, (such as lettuce, cabbage, cauliflower, etc.) a climate should be selected where the growth is slow, since the longer the period of running to seed the better, especially so with lettuce and cabbage. If the seed stock in lettuce makes its appearance almost as soon as the lettuce is in head the result is very unsatisfactory, as the quality is regarded as very poor.

In the climate of California (where my seed farms are located) lettuce planted in December will grow fairly well

all winter and spring, but will not run to seed before July or August, or only about as early as seed planted about Rochester in April. This long time in which seed may mature is very favorable to the character of the plant, and also for half-matured seed.

Stock seed should never be saved in a year when the crop has suffered from hardship in any way, as it tends to run the vegetable toward the hardy side, instead of a fine grain and tender. Very choice vegetables only should be selected for stock seed, of just the type that the grower intends to perpetuate. The type once fixed, he should not deviate from it, and should be prepared when planting the stock seed, so that it will not be necessary to use a poor or injured crop. All vegetables of a root or bulb character should be grown to maturity in the best possible manner, and then taken from the ground to stop the root growth, so that when replanted there will be a fibrous growth, which is the proper development for biennials, and any effort to plant one kind of growth into the other has a tendency to run the plant toward the wild state.

I believe there is to-day a very worthy and creditable competition in the seed trade to have the very best seeds, finest types, and honestly to distribute the same to their customers. The eagerness to seize upon any novelties that are offered seems to convince me that competition in coming years will be solely on the improved vegetable.

In conclusion, allow me to say that California has assumed a very prominent position as a seed-producing location. The business of growing seed there was begun by R. W. Wilson, formerly of Rochester, N. Y., who began by growing a few acres of lettuce and onions in 1875. From that day the growth of the industry has been most remarkable, until there is being grown to-day no less than 2500 acres of garden seeds, including a large variety of onion, lettuce, cabbage, cauliflower, celery, collards, beet, endive, salsify, parsley, parsnip, leek, spinach, tomato, radish, etc., besides several acres of flower seeds, raised by growers who make a definite business of it. In the southern part of the State a very large acreage is devoted to the culture of beans, including a large proportion of limas.

My observation as a wholesale grower leaves me to believe that there are so many avenues of experiment and study open to the horticulturist that the near future will develop more novelties and higher standards than some of us think it possible to realize.

What the Beet-Sugar Industry Is Doing for California.

In his speech in Congress on the proposed removal of the sugar bounty, Representative Bowers of the Seventh Congressional District included the following allusions:

"The act giving a bounty on sugar was a contract not only implied, but expressed in words, and has proved of the greatest benefit to all the people of the United States. Precisely such a contract between citizens would be forced by the courts. The sugar schedule in this bill is a deliberate violation of the contract entered into with the citizens to develop a great industry, and now the Government proposes to ignore every moral and legal obligation because it is the strongest party, owns the courts, and is sole executor of the law. It does deliberately and shamelessly what its courts condemn and punish citizens for."

"The adoption of this schedule will not close the Chino factory this year, nor next possibly, but will prevent the building of three other factories this year in the Seventh District of California. The companies have already been formed and consist almost wholly of farmers. This is not because a reduction of one-quarter of 1 per cent. bounty per year is here made, but because it is a violation of contract. It is a notice that the party of the first part, being the United States, is dishonest, and will give no security that it will abide by the contract that it proposes in this bill, or will be honest so long as the present element controls it; and so the farmers of Orange and Riverside and San Diego and Fresno counties, as well as of all other counties in all other States, must wait until the Government of the United States passes from the agents of all Europe into the hands of Americans who will consult the interests of the American people rather than of foreign people."

"As has been shown, the United States produces only about one-tenth of the sugar consumed, and we pay \$100,000,000 to foreigners. If the present law be continued, the people of this country will in a few years be paying a greater part of this immense sum to themselves instead of to foreign people."

"Five years ago this last autumn I drove across the Chino plains. Midway across there were a dozen cheap wooden houses in a cluster, all but two or three of them vacant. They were a fragment, a reminiscence of the real estate boom that had suddenly dropped down on the plain one day and as suddenly departed the next. A few cattle were grazing, some buzzards were lazily floating in the air, and these were all the signs of life visible; and over all rested the primeval scene of the plains."

"One year ago last October, I was on my way to visit Chino again. On the cars conversation had turned to the sugar-beet industry, and I noticed that a strong young fellow was much interested. At last, turning to me, he said:

"I want to tell you what I have done this last season. I had last winter a span of broncos that cost me about \$75, and an old wagon and harness worth \$25. That is all I had to begin with. I went to Chino and hired some land, and went to work. I just finished the other day, and all my beets were sold to the Chino factory, and I have cleared on my work for less than a year a little over \$1000, and have got the money."

"As I have said, I was on my way to Chino again. The other time I had found the little cluster of vacant houses. Now I saw that a great change had taken place. A factory had been built on the plain, and from an elevated platform on one side of this factory I surveyed the scene. On every side stretched cultivated fields, and hundreds of busy men and women were at work in them. From every direction loaded teams were coming, and these deposited in great

bins 400 tons of beets each day. Going to the other side of the mill I found a long train of freight cars being loaded with white sugar, of which that factory turned out this year 15,000,000 pounds. The hum of industry, the sounds of the busy mill and the laughter of workers in the field were borne on every breeze. In the evening I met, in a fine, spacious hall, 500 intelligent, bright, cheerful people—American farmers and workmen and workwomen."

Questions on the Use of Cement.

TO THE EDITOR:—May I ask for information on the use of cement in the following cases: A 70-foot well, driven 25 feet (with a four-foot diameter) through quicksand, is curbed with a round curbing of one-inch redwood, with hoops three inches wide and two inches thick placed every six feet inside the curbing. The curbing is therefore a hollow redwood drum of inch stuff stiffened by these interior hoops three inches wide. Above is a heavy and expensive windmill. The well at present needs deepening, which cannot be done, as the rotting of the curbing makes the work dangerous; nor can the curbing be replaced, as quicksand would quickly fill the well in the attempt. I have an offer to cement the whole interior of the well, beginning at the bottom, and wish to know whether: First, a cement curbing (hydraulic of course) laid against an old wooden curb can be made a safe, secure and permanent curbing? Second, how many inches thick must such a round cement curbing be to give permanent security? Third, what proportion of sand can be used to cement and can fine broken stone also be safely used or should sand alone be used? Fourth, how many barrels of cement will be needed to make a curbing for a four-foot round well 70 feet deep.

Also, can cement trackways be used to ease loaded wagons up hills so steep that little cargo can be hauled up the ordinary dirt roads, while cost prevents any reduction of grade? If cement trackways are possible, what depth should they be laid to? What is the best "richness" for the cement and what should be the cost of 1000 feet of single track.

Los Angeles.

[We shall be glad if some of our readers will give replies to these questions. There has been very free use of cement in this State during the last ten years and there should be a large amount of information available as to the satisfactory character or otherwise of such constructions. If more were known of the successful use of cement there would be much benefit conferred upon readers who, like our correspondent, contemplate improvements. We shall be pleased to have these matters discussed.—ED.]

Value of an Acre of Alfalfa.

Mark Sickal gives the *Martinez Gazette* an excellent paragraph on the value of the alfalfa patch, as follows:

Without irrigation, on deep, rich valley soil, an acre of alfalfa will feed a cow, a horse and a hundred chickens from the time grass grows in the spring till July, after which it will give a little pasture for a cow for six weeks longer, or till the middle of August, and will keep a hundred fowls in good health the remainder of the year. I speak from experience, having tried, with the results given above, on my place in Ygnacio valley. When I first came here I was told alfalfa would not succeed, as the gophers would ruin it and it would draw them into my orchard. My acre is surrounded by orchard, and it did draw gophers. It succeeded in clearing my orchard of the pests through all the area in the vicinity of the alfalfa—corralled them, so to speak, where I could quickly work them with traps and cats. During the winter I reseed the patches injured by gophers, raking the seed in with a garden rake, thereby keeping my plat in full bearing. While the ground is soft I cut the grass for my animals, picketing them only when ground is hard. The poultry feed all the year round on the alfalfa, seeming to prefer it to wild grasses. From August to spring 100 fowls will keep an acre fed off close to the ground, and if free from lice will be remarkably healthy. If one has a good supply of water from spring or tank, an acre can be irrigated by running small water pipe through length of plat, down the center, setting up about three faucets equally distant, from which 100 feet of garden hose with sprinkler will sprinkle all the ground. I have seen in Dixon, Solano county, an acre of alfalfa thus equipped, keep a horse, cow and 300 fowls in fresh green feed from March to November.

Canned Goods Product of 1893.

The following is an estimate of the California pack of last season by a leading packer:

	Cases.
Apples	5,000
Apricots	150,000
Asparagus	7,000
Blackberries	10,000
Cherries, white	35,000
Cherries, black	25,000
Currants	1,000
Gooseberries	3,000
Grapes	20,000
Nectarines	5,000
Pears	40,000
Peas	7,000
Peaches	100,000
Plums	12,000
Quinces	2,000
Raspberries	2,500
Strawberries	2,000
Total	426,500
Miscellaneous	
Pie fruits	30,000
Tomatoes	200,000
Jams and jellies	15,000
Total	245,000
Grand total	671,000

TRACK AND HARM.

The Time Record.

A year ago a great cry was made against time records. It came from breeders who owned stallions which had put a few—a very few—into the list, or possibly their horses might have a race record, while a competitor had one whose standard mark was obtained against the watch.

Turfmen were loud in their denunciation of time performances, and declared that records so obtained did not prove that they were race horses or fit to beget them. This remark became common: "I want the records made in races." There was a feeling of jealousy behind these statements in many quarters. Some stallions swelled their lists very largely by these dashes against the scythe-bearer, while other horses, which did not multiply their standard get so numerous, placed quite as many to their credit in actual race contests.

Now, I do not propose to claim that a time record is worth as much as one gained in competition, but I shall maintain that time records are valuable and a necessity. Last week I tried to show that a 2:30 horse was a trotter yet, and that it will remain one for years. I will go still further with the proposition and hazard the statement that it will be one for all time. Men do not walk or run any faster now than they did in the days of the Israelites' pilgrimage; and horses will not, as a class, increase so much in speed as to leave the 2:30 trotter plodding along a hopeless distance in the rear. This statement is made in regard to road horses, and is, therefore, not applicable to turf contests.

The practical results of breeding the fast trotter of extreme speed is the getting of a faster class of road horses. I claim that the 2:30 horse is a trotter for country tracks and always will be, and that the horse which can go and trot on a half-mile track without weights or any other appliances than boots for safety, and in a common harness, in that time, is a trotter, and that if he is finished with size, beauty and a kind intelligence, a perfect horse has been attained, and that he will command a price which will pay for his production. The days for high prices have passed, and it is doubtful if this *ignis fatuus* appears again to allure men into the folly of breeding, where nothing but a pedigree—and that often short and doubtful—existed, and that other great requisite, a horse, was almost wholly lacking.

Even now, if two good animals are joined with extended producing blood lines, it will be a fallacy to expect anything faster than a 2:30 trotter.

Men have engaged in the business of breeding and raising trotters for the purpose of making money; it is not play with them. Most of them are obliged to operate in a circumscribed way. A very few only are so situated that they can successfully train and develop horses to their limit of speed. For this reason I advocated the necessity of slow class races, particularly in the country. These classes are for educational purposes, and assist in developing speed and becoming used to fast company. I claim that a breeder or dealer having a young, handsome, good-going horse is justified in getting a standard mark for it against the watch if it will help him sell it, and especially if he wishes to prove beyond any doubt that the horse has that amount of speed. It is well known that the training of horses is attended with great risk and expense; that to properly train a horse and demonstrate that it can trot a winning race just better than 2:30 will cost nearly, if not all, of what it would bring. Therefore, it is better to employ the shorter method, bring the horse up well, train it on the road, give it a short preparation for a time record, get it, and then find a buyer. This is the method I would advocate for the small breeder and farmer to pursue.

If the trotter is perfectly sound and smooth, has a good way of going, with beauty and a kind disposition, the owner will not be long in finding a buyer at a remunerative price.

There are still other classes which would be benefited by time records, and there are classes of horses which for economical reasons should have the benefits of these performances. There are stallions which an owner cannot spare from the stud long enough to train for a campaign. He simply wants to demonstrate that his horse has standard speed, and, having done this, is content to put him in the stud and trust for good results.

A breeder has a mare which he wishes to become standard by performance, and which he does not care to fit and enter in races. He has the right to give her the benefit of a trial against time, and she should have the credit of it and her offspring also. Suppose the stallion or mare becomes a great producer, it is to the credit of every foal and its produce to have the fact noted that one or both of its parents or grandparents were standard by performance.

I now come to the class of time-record performers which made the loud wail of protestation against the tin-cup records a year ago. I claim that it is the privilege of an owner to so mark a foal, and I further claim that it is an honor to either sire or dam to have a colt so marked, for the reason that it shows speed inheritance and the power to propagate its kind.

In defending time records, I admit that the race record is the better, and that race-horse qualities are not shown to such advantage, and that I prefer racing sires and dams to breed turf racers from. I make my plea in defense of such records for the reasons that it lessens the expense and the risk of accident and injury, and that it is a help to a quicker return of profits on the investments made by small breeders.

There is one other point. It is actually a necessity to some of the wealthiest breeders having the best breeding establishments. Why? They may have trained one or more colts or horses, entered them in races, and then not been able to win a heat, for the reason that there was always one or more faster horses in the race. A young trotter might go mile after mile in races away below 2:30 and yet never be able to win, and be very game and reliable at that, doing all it could do without any lay-up. In view of this fact, it is due to the owner and to the sire and

dam of such a horse that its standard ability of speed should have an official record. There have been more regrets that horses did not get standard marks than that they did.

I do not like some of the slipshod methods which have given horses standard records. I do not believe in moving the wire up to meet the horse, or when he quits dead a length away, throwing him under it; but in a trial to rule and when it is done so, then the performance is worth something.

A record is more valuable than a public exhibition 99 times out of 100, but if a horse has a fast turn of speed, he certainly should have the right to the credit of it all, and should have the benefit of a good day, track and a path the closest to a mile, with nothing to mar or hinder him in his journey.—Driver, in Spirit of the Hub.

SHEEP AND WOOL.

Encouraging.

W. O. Fritchman, of Muscatine, Iowa, shipped Dec. 11th to Chicago 86 prime lambs, weighing in Chicago 94 pounds each. They sold for \$4.75 per hundred pounds.

"The writer is acquainted with Mr. Fritchman and knows the character of his sheep and the kind of management bestowed upon them. He breeds Shropshire sheep, and the lambs were doubtless high-grade Shropshire. He shelters his sheep and believes in feed and care. These lambs probably consumed, while running with their dams in the lamb creeps, 15 pounds each of feed, worth one-half cent per pound; for 100 days they ran upon pasture with their dams, which is worth ten cents per head per month, or 34 cents; the next 90 days was in the fattening pen, where each lamb consumed three-fourths of a pound of grain per day, worth 34 cents, and three pounds of hay per day, worth 87 cents, making them cost at home \$1.63 per head. Adding 50 cents per head for getting them to market and defraying commission and other expenses in selling them, we have them costing up to the time of sale the sum of \$2.13 per head. They brought in the market almost \$4.50 per head, making a net profit of \$2.37 per head, which in these times is a very good thing, and is a profit scarcely made on other kinds of stock which are supposed to be quite profitable by their owners.

"The writer has a bunch of about 30 pure-bred lambs of one of the black-faced breeds that will average 115 pounds at this writing, which have not been fattened, but which, with a little more feed, could be made to weigh 125 pounds in the Chicago market. At the present extremely low prices of mutton they could be sold at a profit to their owner.

"We have a double purpose in calling attention to this sale of Mr. Fritchman's, neither of which is for the purpose of advertising him. First, we desire to show that sheep can be made to pay, even in these times of low prices; the necessity of breeding for mutton and the importance placed on breeds of sheep that mature early. The sheep that can be ready for the market at eight months of age, and weigh in the neighborhood of 100 pounds, will make its owner some profit at \$3 per hundred. Second, we desire to show the importance in having well-bred sheep. These weights cannot be attained by the careless breeder who uses a scrub ram, employs scrub care, glories in being a scrub feeder, and one who shelters his ewes behind a wire fence.

"This sale demonstrates what good breeding, good feeding and good care can do, and there is no time in the life of a sheep-raiser when such diligence is required as when prices are unsatisfactory.—Exchange.

The Sheep Trade of 1893.

The strong prices at which sheep and lambs sold for from February up to August of 1893 caused a perfect mania throughout the country for sheep-raising, many farmers, particularly those in the western section of the country, who never raised sheep before, went into the business on a big scale, and as a consequence, with so many elements working in a seeming combine to the injury of the business, many were there who, if they have not lost all, have had their fortunes badly shattered by the venture. During the early part of the season the receipts of sale stock were fairly liberal, and, with the exception of the early months of the year, all but good wether sheep sold lower, and light lambs, being in excessive supply, were much lower.

There was not so great a flood of sheep and lambs at this market as was the rule at Western points, but all the same the supply was so greatly above the demand at all points that those who went into the business of contracting sheep and lambs ahead, from January to June, never struck against harder rocks to the trade than was the case this year. The great agency outside of the glut of sheep that came into the markets has been the low price at which wool has sold during the past year, and the money stringency in the market worked strongly against the wool-dealer, who found it impossible to obtain loans on its products, so uncertain was their market value, and it is largely due to this fact that so many of the lots of sheep and lambs that came to our market were of the half-fat variety.

Owners were simply forced to forward their stock to market; there was no other outlet for them; they could not hold their sheep and they had to come, regardless of the low price at which they were selling, and for the first quarter of the year up to the close, values, as compared with last year, were nearly \$1 per cwt. lower, and in some cases more than that on the ordinary and commoner grades of sheep and lambs. Sheep and lamb pelts throughout the year have sold from 50c to \$1 less than 1892, largely affecting prices, particularly on the commoner class of sheep and lambs. No class of men probably suffered more by the general stagnation of the trade than the Canadian dealers, and while the receipts from that section have not been one-third of the number received in 1892, the losses sustained have been very large.—Chicago Wool Shipper.

THE DAIRY.

Shorthorns at the Columbian Dairy Test.

[Concluded from page 85, Rural Press of Feb. 3.]

TO THE EDITOR:—Referring again to the official report of Hon. H. H. Hinds, I remark that Mr. Hinds admits that he was one year too late in starting to get ready the requisite number of cows, such as would have given him a chance to select a representative lot of twenty-five dairy cows from, with a few extra on hand to make such change in cows as the rules allowed done at different times, such changes as the Jersey breeders had ample opportunity of making for their benefit, from the large number of extra cows they had to select from.

Still, the twenty-four cows that were in the ninety-day butter test, good, bad and indifferent (and there were a few of the latter class, such cows as ought not to have been in the contest), upon the whole showed themselves to be good dairy cattle under the circumstances.

In the ninety days they gave 66,263½ pounds of milk showing 2410 pounds of fat, equal to 3012½ pounds of 80 per cent butter, an average of over 1 2-5 pounds a day for each cow participating in the test. In addition to this they added to their weight during the ninety days 2826 pounds of "cow meat."

Test No. 3 was carried through with fifteen cows in each herd, consequently Mr. Hinds had now an opportunity to do some culling. Each herd had its fifteen best cows. The Shorthorns gave the most milk, 15,618 3 pounds to the Jersey's 13,921.9 pounds, the Guernseys giving 13,518.4 pounds of milk in the thirty days. This is known as the thirty-day butter test, in which butter only was credited, no account being taken of either skim milk, butter milk or gain in live weight.

What the object could be in having such an unpractical test at all it is impossible to imagine. Certainly no sane dairyman is going to establish his business on such a basis, and have to throw away all by-products, the proceeds from which, judiciously used in the production of pork and eggs, and the rearing of calves, average about enough to pay for the labor of attending to the cows and the dairy. Well might Mr. Hinds call it a "dairy test run mad."

As stated above, the Shorthorns in this test gave the most milk, and had it been a cheese test conducted in the same manner and under the same rules as test No. 1, Mr. Hinds says:

"The Shorthorn would have won handily. Why? First, because it cost less to feed our cows. Second, we should have made the most cheese, because we had more pounds of gross solids, the basis of calculating the amount of cheese we could have produced. Having more milk, there would have been more whey to sell. We made a greater gain in live weight than the Jerseys. These figures are all so plain that if a dairyman were blind he could feel them."

In regard to gain in live weight made by the three breeds, he says:

"Verily, the dairymen of the country will eventually get some facts out of this dairy test worth knowing. He will find that some other good dairy cows besides the Shorthorns put some of their feed on their backs as well as in the pail."

It should be known that the advocates of the special dairy cow strenuously objected to any credit being given for gain in live weight during the several dairy tests, or any of them, to be held during the Columbian Exposition. They seem, these specialists, to have a terrible dislike for cow meat, looking upon the gain in live weight made by a cow while giving milk as something that cannot be got out of her. Well, why want to get it out? It is better in the cow than not, if she is to remain a worker in the dairy. It is a something laid up for use at a future time, in case there should be any call for an unduly heavy drain upon the system.

Experienced dairymen know well enough that a cow that keeps in thrifty condition is a better cow than one that keeps poor and unthrifty looking all or the greater part of the time. A cow that is in good flesh at the time of calving is a better cow for giving milk than the same cow would be if calving in cow condition as to flesh.

Taking it all in all, this cow meat, in the cow, is a good investment, one that will be drawn upon by the average cow some time during her life, or, in the end, if not by the cow, by the owner of the same. It is a condition, too, that renders a cow less liable to attacks of certain diseases now so prevalent among dairy cows, in fact, enabling her to better withstand the changes and chances of this life, that all living beings are subject to.

I am not in any way referring to that *plethoric* state which renders a cow that is a large milker subject to an attack of milk fever, which is really a preventable disease, when proper precautions are taken.

Referring again to the 30-day butter test, Superintendent Hinds says:

"This test brought out some other valuable facts. It showed that in this lot of 45 cows there were but four sure-enough two-pound cows, one of which developed a capacity of nearly 2½ pounds a day. This was the Jersey cow Brown Bessie, a cow that did not live to reach home. The loss of such a valuable cow is to be regretted. After Brown Bessie, the three two-pound cows left alive after this contest are: First, Merry Maiden, a Jersey, giving in 30 days 965 pounds of milk, 68.3 pounds of 80 per cent butter, and 90½ pounds of other solids. She grew 27 pounds of "cow meat," and consumed \$7.62 worth of food. Second, Kitty Clay 4th, a Shorthorn cow, that gave 1593 pounds of milk, 65 pounds of 80 per cent butter, and 141 pounds of other solids. She consumed \$8.49 worth of feed and grew 28 pounds. Third, the Jersey cow Stoke Pogis Regina. She gave 1012½ pounds of milk, 61½ pounds of 80 per cent butter, and 60½ pounds of other solids. She consumed \$8.19 worth of food and grew 37 pounds. The public is now presented with full facts concerning these three truly great dairy cows."

The average butter production of the two Jersey cows was the same as that of the Shorthorn—65 pounds—but the latter beat in quantity of other solids—141 pounds, while the average of the two Jerseys was only 75.37 pounds each. The two next best cows in this test are, respectively, the Guernsey cows Purity and Careno, each of which have within a small fraction of 55 pounds of butter to their credit.

Test 4—For Heifers Under Three Years Old.—The last

test was for heifers, under three years old on the first day of September, in which seven Jerseys and six Shorthorns were entered but no Guernseys.

In regard to this test, Mr. Hinds says that no great victory can be claimed for the Jerseys. Had the Shorthorns averaged 14 cents more net profit for the 21 days they would have beaten the Jerseys, so that the result was near being "a tie."

It is a fact that the total net profit on the three best Shorthorn heifers, which is \$28.619 for the 21 days, exceeds that of the three best Jerseys by 61 cents.

The two best Shorthorn heifers had calved in the month of September, just about the right time for profit. The third best had been in milk three months. Two of the other heifers had been in milk over five months each. The sixth was under a still more unfavorable condition. She had aborted on the 5th of April, when only five months gone in calf; consequently, had been in milk full six months before the test. Even then, Mr. Hinds says that she was beaten by the poorest Jersey heifer only by one-fourth of a cent, when the figures (decimals) are properly worked out, though the records show 1.3 cents.

The six Shorthorn heifers gained 384 pounds live weight, an average of 64 pounds each; this being over three pounds a day for each animal for the 21 days would be hard to beat in the feed lot by the same number of steers.

Superintendent Hinds concludes his remarks on the heifers by saying:

I have no apologies to make for the heifer test or its outcome. The perfect ease with which it might have been won is now apparent to everybody. If I had only been furnished three or four fresh heifers of such quality as the Shorthorn breeders of this country could have easily furnished me a hundred, we would now have a different story to relate, but our show was good enough to illustrate that we are growing dairy cattle and that they stay in the swim from two-year-olds until they are past 16.

The 16 year-old cow referred to made a creditable record in the 90-day butter test.

Mr. Hinds has evidently confidence in the Shorthorn as a dairy cow, presuming that she is bred that way. He says:

In every test not only one but several different cows have turned out the product at the minimum cost per pound and of the highest commercial value. The people and paper-writers who are proclaiming that the Jerseys have won a certain and decisive victory in all or either of these tests are talking through their hats. * * The Shorthorns have with several animals tied them in each test. They have clearly indicated that with time for proper selection and mating they can come back two years hence and in a test under any rules or for any length of time beat them. They will give more milk and make more butter and cheese. I found this reasonable statement upon two or three stark naked facts.

No sane person presumes for a moment that the Jersey contingent could be materially improved two years hence. It is exceedingly doubtful if its outstanding excellence could be duplicated. On the other hand no person at all conversant with the facts but understands fully that two years hence more than a hundred Shorthorn cows equal to the best of these could be brought out, bred to produce at the right time, sure enough 2-pound cows would be found among them in astonishing abundance.

The Jersey people have spent three or four times as much money as we have and sacrificed some of the best specimens of the breed ever produced.

In regard to the feed used for each of the three herds, the Jerseys were fed on more nitrogenous foods than either of the other herds, their feed consequently was more costly but proportionately better for the production of milk and butter. The hay and silage supplied was of very inferior quality, and the Jersey herd used less of it than did either of the other herds, whether wisely or not, is doubtful seeing that three of their best cows died. Very high feeding of concentrated foods alone is dangerous practice. A good proportion of some succulent food, roots or silage should be used along with all heavy grain rations. It is safer; the cows will do better and last longer besides costing less for keep.

In the 90-day butter test the 25 Jerseys cost \$23.50 per head for feed, and the 21 Shorthorns cost \$21 each and the Guernseys \$19.37 each. The value of the produce of the Jersey herd was a little over three times the cost of food. That of the Guernsey herd just three times the cost of food, while that from the Shorthorn herd was a fraction over two and a half times the value of the food consumed. Had the price of butter been put at the market value, say 25 cents a pound instead of 40 cents, more than 50 per cent above it, the Jerseys would not have made so favorable a showing over the other two herds that made less butter. Fifteen cents a pound on the 1684 pounds that the 25 head of Jerseys produced more than the 24 Shorthorns would amount to \$152.60. As the records stand the difference in net profits is \$412.67. Deduct from this the \$152.60 leaves \$260 in favor of the Jerseys. If the dead cows had to be deducted from the net profits there would be little difference after all, for there can be little doubt but some of the deaths were due to over-feeding.

Baden, San Mateo Co. ROBERT ASHBURNER.

POULTRY YARD.

Value of the Small Flock of Hens.

T. Dorle, in the *Fresno Republican*, says: Whether large flocks will pay well or not is a debatable question, but that small flocks will pay well there is no doubt. One year ago I commenced with a flock of forty chickens, keeping an account of all sales and expenses, and at the end of the year I find the credit side of the book a little over \$90 ahead, or 4½ times as much as the original flock was worth at the beginning. In the account of expenses I only charge the feed, as the house, nests and coops are in as good repair as at the beginning, and, with the waste lumber and old boxes of the place, can always be kept so.

To make chickens pay the best I find we need plenty of range. The more chickens, the more range; plenty of shade in summer and shelter in winter; plenty of pure water, green feed and all the grain they will eat. But the greatest requisite is pure-bred fowls. Every one that has

a flock of mixed breeds will notice that a few of their hens lay three or four times as many eggs as others do. Now with pure-bred fowls it is the reverse. Nearly all are good layers, and the few that are not can be disposed of as soon as they are discovered.

As to the choice of breeds, all have their good points and it is only necessary for us to select the kind we like the best, and keep this kind and no other; but make sure that you start with pure-bred stock, if only a few hens and a rooster, or two or three settings of eggs, and from them raise your future supplies, all the time saving the very best, and in a year or two you will have a flock of chickens that will be a pleasure to care for and profitable to keep.

Raising Turkeys and Ducks.

According to promises we will now try and give the readers of the *Cultivator* our method of caring for our young turkeys and ducks. Every one that raises these fowls knows that the first month's time is the most particular period of their existence, and to get them well started and doing well for the first four weeks, is half of the battle. But first let us begin with setting the hens. We move our hen to a yard where all is quiet and nothing will disturb her. We make a nice coop, about two by three feet and three feet high. We make this of boards and fill it about six inches with dirt and dig it out in center and shape like a nest, and then make good nest of leaves from the woods. Do not make nest too small, but give good room and make rather long instead of too round. Move your hen very quietly to her nest, and if she is inclined to fight and you are afraid she will not set well, put some chicken eggs under her and let her be quiet a few days and then remove chicken eggs and put the turkey eggs under her very quietly, and she will be all right. Open the coop three or four times a week to let her come out and get water and also take a dust bath, but see that she goes back, as they sometimes return to the old nest again and you may have to bring her back. But after she has set a week or ten days, she is not much trouble. When she is hatching you should be very gentle with her, or she will kill the young turkeys in fighting you; when ready to come off we remove them from the nest and take four boards ten feet long and one foot high and make a small inclosure and put her and the little turkeys in this. This will confine the young ones and she will not leave them. Little turkeys cannot travel much under a week old, and should be kept close for a few days.

We now come to the most important part, that of feed. Breeders differ on this some, but we will give our method, which has proved good with us for eight years: We take cornmeal and wet it up with cold water or milk—milk preferred. Make into a dough and then bake it right in the hot ashes, and feed this all they want three times a day until two or three weeks old, and they do thrive and grow wonderfully on this diet. After three weeks old we begin to feed bread of any kind, and cracked wheat and corn they will relish. We aim to feed a variety of food after they are three weeks old. We are very particular to see that our turkeys are not caught in rains; also not to let them out in heavy dews, as nothing is more injurious to young turkeys than dew and rain. We prepare a dry place for our turkeys to roost until they are large enough to go upon fences to roost; never let them roost in damp places, as dampness will surely kill them. In regard to ducks we always hatch them under a chicken hen, as ducks are not reliable setters, and, in fact, our Pekins never offer to set, not over three of them having offered to set in eight years, and they were late in June. Ducks are very delicate when first hatched. We never give our ducks any water, except for drinking purposes, until they are two months old. Experience has taught us that water to swim and dabble in is ruinous to them. They will chill to death even when you would not think of it. So if you expect to be successful with ducks do not give them water to swim in until four to eight weeks old and in full feather. As to feed, we regard oatmeal as the best to promote rapid growth, and we feed this and save cornmeal and middlings for first month, and then almost anything they relish, as bread of any kind, cooked vegetables, such as potatoes, or anything they will eat. Ducks are very profitable to raise, as they eat most anything and rarely ever have any disease. Their eggs should be set near or on the ground, or if nest is high you should put some sod in bottom of nest, and in very dry weather should sprinkle with tepid water two or three times a week.

We have been very fortunate in getting out fine lot of early chicks this spring and have not lost over five per cent to date, and our spring has been very blustery and several cold snaps. Our eggs hatch remarkably well this season, and everything is encouraging. Brother fanciers, let us hear from you through the *Cultivator*. Tell us how you are getting on with your feathered crops.—J. L. Robertson, in *Southern Cultivator*.

Care of Hen Manure.

F. E. Dawley writes for the *Country Gentleman* in the following practical and suggestive manner: We believe our hen manure to be of greater value than the chemical analyses show, and so take great care to preserve it in the best possible manner and hold all its fertilizing elements. The reasons for this belief is that the elements of plant food in it are so readily available that the little plants get hold of them right at the start.

The best way that I have found to save the manure is to build a tight shelf, about a foot below the roosts, sloping it a little toward the end, so that it can be easily and thoroughly cleaned off. On this shelf or scaffold sprinkle about ¼ inch of plaster, letting the droppings fall into it. Once or twice each week the whole accumulation should be cleaned off and packed closely in barrels, sprinkling the shelf as before; and, by the way, I have not found anything for a dust bath that pleases me quite so well as this same material. You can use it for this, and when it becomes

foul throw it upon the shelf for the absorbent, filling the dust box with fresh plaster.

After the manure is put into the barrels it must be stored where it will be kept dry until you want to use it; then it can be sifted and screened, putting it in first-class condition for use.

Just to learn the difference between manure that has been cared for and that which had been left to accumulate under the roosts, I have had a sample of the latter analyzed for the three fertilizing substances, and find that it would not be worth one-third as much as that cared for as it should be.

California Agriculture in 1893.

Annual Report of the State Board of Agriculture.

On Monday of this week the State Board of Agriculture held its annual meeting at the office of the secretary. The following-named members were present: Directors Cox, Green, Chase, Mathews Wilson, Flickinger, and President Boggs.

Hon. Frederick Cox, in a few happy remarks, nominated Hon. John Boggs for re-election as president for the ensuing term. There being no other nominations, Mr. Boggs was elected by acclamation.

G. W. Hancock was elected superintendent of the park, and Christopher Green superintendent of the pavilion.

The State Fair for 1894 was fixed upon to begin on Monday, September 3d, to continue two weeks as heretofore.

The report of the board to the Governor was read and adopted. We give below those portions which seem to us of broadest significance:

THE WHEAT CROP.

The yield of wheat in California for the season of 1893 was 31,191,400 bushels, the lowest for many years, and can be easily accounted for, as the season opened with an almost continuous rain for five or six months, which resulted in an average rainfall from October, 1892, to March, 1893, of 21.64 inches, whereas the average for forty-two years past, in the same time, was but 15.14 inches. This unusual rainfall was obviously disastrous to all "summer-fallowed" land, as that sown early was drowned, while the late-seeded grain made short yield. Notwithstanding the prospects the season opened rather encouragingly, every line of trade seemed prosperous until the month of May was reached, when moneyed agencies proclaimed their inability to grant loans upon any kind of security, and this, coming at a time when harvest opened, created havoc throughout the State. In many instances growers were forced to sell their wheat at whatever price was offered in order to obtain money for necessary harvesting expenses, as credit on every hand was shaky, and the whole system of trade was at once transformed to a cash basis. The banking institutions of the State were drained for resources and compelled to refuse aid to all industries, thereby extending the depression to all avenues of trade.

WHEAT GROWING.

The low prices reached by wheat during the season just passed warrants presentation herein of statistics upon the cost of its production.

The United States Department of Agriculture recently issued a circular upon the subject and asked for returns upon the following points: What is the average rental per acre of wheat land? What is cost per acre of preparing land? What is cost per acre of seeding? What is cost per acre for threshing? What is cost per acre for marketing?

The rule of rental of wheat land is a return to owner of every third sack of the yield, equalling about six bushels.

Leaving out the question of rental, as that figures but little in this State upon the cost of wheat production, we will give the actual cost per acre of growing wheat by the land-owner, exclusive of interest on land valuations, as many holders have as many valuations; we will let the profits that accrue represent interest, as very few of our wheat-growers paid anything like the value they estimate their land to be worth, and the increased value should be figured as their gain, and not be a charge against its products. Upon this basis we find the actual cost of growing wheat per acre to be as follows:

Cost of preparing land, per acre.....	\$1 50
Cost of seed, 80 pounds, at \$1.20 per cental.....	96
Cost of sowing.....	50
Cost of harvesting.....	1 00
Cost of sacks and hauling.....	60
Total cost per acre.....	\$4 56

At a yield of sixteen bushels, or eight sacks, per acre, which is a medium estimate of returns at anything like an average year, shows the cost of production to be 28½ cents per bushel, and any excess of yield over this estimate reduces the cost per bushel proportionately.

We will take for example 160 acres of good wheat land that yields say eight sacks, or sixteen bushels per acre—and this is not an exception—we find the cost of production per bushel to be 28½ cents, or \$729.60 for the yield of 2560 bushels. Then taking the average selling price for ten years preceding 1893 at 88 cents per bushel, we have a return of \$2252.80, or a balance of \$1523.20 to pay interest upon land values and profits, a return for time spent upon crop, which is usually about four months in the year. This should be net profit, as the wages of owner, if work is done by himself, is included in cost of production, and by the careful and business-like farmer enough other resources should be available in the way of sales of surplus stock, butter, poultry, and eggs, to pay his living expenses.

Those of our farmers who raise wheat upon a large scale are proportionately more successful, as they can reduce expenses of production by use of all kinds of modern machinery to a greater extent than can the owner of a small area.

The system of cultivation in wheat-growing districts of California differs materially from that of other wheat-producing countries, and accounts for the non-use of fertilizers

so much needed in many other States. Our system of "summer fallowing" wheat lands tends to save it from exhaustion. As this manner of cultivation is not generally understood by non-residents, it might be well to here explain its workings and benefits.

The custom among extensive wheat-growers is, after the heavy rains of the winter are past and the land upon which a crop had been taken the preceding season has received a thorough deep wetting, to begin with early spring and give such land a very thorough plowing, thereby turning the soil up to the sun's rays during the entire summer. Then in the following fall, say about the month of October, this land is seeded and has the benefit of the entire rainfall of the winter, and unless crops alternated, land thus farmed is rested up every other season. By this plan of soil working owners of large tracts have an advantage whereby they obtain greater gains than to alternate crops and winter sow.

By this "summer fallowing" system much of the best wheat lands will yield from 10 to 12 sacks per acre, or say 20 to 24 bushels, with but slight exhaustion of vitality.

The plowing and seeding of land under this system comes at a time of the year when there is but little demand otherwise for both men and teams, hence a slight reduction in expense can thus be made.

The condition of farmers in California compares most favorably with those of any State in the Union. We have a large number of successful wheat-growers in California, and venture the opinion that a very small proportion of their wealth was acquired through any other source. While upon the subject of wheat culture we must make mention of the fact that our growers of this great article of export rely upon the elements for moisture of soil. A very small proportion of wheat is grown upon irrigated lands, consequently when the elements are against them either by too great or too little rainfall they are the sufferers.

While wheat has been declining in price for several years, with our improved system of farming and especially harvesting crops, there is as much, if not more profit in the business than for many years preceding the advent of improved machinery. For instance, we do all our summer fallowing (more properly speaking our spring plowing) with gang plows, as large farming is done with these gangs which consist generally of four plows attached together, or eight plows in one frame. One man with a team of six or eight horses can plow six acres per day. In seeding the ground we use the common broadcast seeder followed by an eight-horse harrow.

Under this system of seeding a great saving is made. In harvesting our crops we use the combined harvester that cuts from 28 to 30 acres per day. A harvester with an 18-foot cut of sickle will, in an average grain field, cut and thrash from 350 to 400 sacks, or 800 to 900 bushels per day, at a cost, counting wear and tear of machinery, feed of animals, wages and board of men, not to exceed \$1 per acre.

Fruit—The report approves the movement for the establishment of a Fruit Exchange and urges the need of improved shipping facilities.

CALIFORNIA IN A PRODUCTIVE SENSE.

With a yield of from thirty to forty million bushels of wheat annually—an amount equal to the requirements of Germany, or Italy, or Spain, China and Brazil combined—an annual yield of 112,000,000 pounds of green fruit, an annual yield of 59,000,000 pounds of dried fruit, an annual yield of 1,700,000 cases of canned fruit, an annual yield of 3,000,000 boxes of raisins, an annual yield of 3000 carloads of citrus fruits, an annual yield of 40,000 bales of hops, an annual yield of 37,000,000 pounds of wool, an annual yield of 18,000,000 gallons of wine—which comprises the principal export products—can California be looked upon in any sense but that of a productive country? Is there any doubt of her ability to furnish breadstuffs and kindred commodities for a great population that require her products? Can there be any doubt as to her future? Her productive interests are paramount to all others, which fact, and its advantages, give California the great prominence she deserves. It is her productive qualities that we desire to be kept before the public, and it is the inducement we offer to those who desire to take part in her advantages.

We do not aim to encourage the immigration to this State of an unproductive class. We are not desirous of building up the cities in advance of the country, and much less either with an idle population, but to those who have capital, and especially in a limited amount, and are seeking the vocation of soil-worker, we bespeak your attention, and can assure you that the avenues for the acquirement of a prosperous living are many in this calling, and as yet none are overdone, while on the contrary there are many undeveloped. The field is large and offers great opportunities to the right kind of people.

Our importation of canned goods, such as meats, corn, peas, beans, condensed milk, to say nothing of hams, bacon, lard, poultry, eggs and other condiments and food articles, amounts annually to thousands of carloads—an occurrence not unlike "bringing coal to Newcastle." We have the soil to produce all these articles in abundance, and nothing but a scarcity of the right kind of people causes this state of affairs. There seems to be among soil-workers a tendency to follow the line of products originally began in certain localities. If in any particular locality wheat is the chief product in hand, the newcomer goes into wheat growing. If it is fruit, he plants fruit; if it is stock, he follows that interest and leaves the growing of vegetables almost entirely to a foreign element that has no idea of progression in preserving products. It is a diversity of products that makes a country vigorous and its people prosperous, and while California has a great variety of products, our imports show there is ample room for manifold increase of resources that are now dormant.

HOG RAISING.

Take for example the hog interest; it has heretofore been urged that no country could compete with the great corn-producing Northwest in the production of pork. Recent experiments in that same country show a decided change of

condition in this industry. It has there been demonstrated that a pig will take on flesh quicker when fed upon small cereals than any other character of feed. In Dakota, where wheat is the chief article of food, a significant showing has been made in this respect, as hogs shipped from there to the large abattoirs of the West are of a higher grade and show a decidedly larger percentage of pork to the pound of live hog than those from the corn-fed regions, which fact necessarily makes hogs of this class more valuable to the packer than the corn-fed animal.

This experience is of much benefit to California, where our farming community has heretofore taken it for granted that they could not compete with corn-raising countries in the production of pork, and in consequence we are annually importing from 300 to 500 carloads of hog meat for home consumption. With the low price of wheat, and its cheap culture in this State, there is no reason why we should not be exporting such a valuable product as pork.

We have all the advantages necessary for the successful maintenance of this industry—land in large tracts, a variety of food for fattening and a home market. To those who are seeking investment, we would recommend the rental of land in 300 or 400-acre tracts and the introduction of pork raising upon improved methods. By improved methods we mean proper and systematic feeding, care and cleanliness of the animal. We mean that those who would enter the vocation as a business must do away with the belief that a pig's nature must be catered to and that fifth is an essential agent in the growth and culture of a hog. It has been demonstrated by practical tests that cleanliness is a quality quite necessary in making the business profitable. That is to say, a pig will take on more flesh in a given time if kept in a pen void of filth and fed upon clean food than when raised otherwise. As much intelligence should be requisite to profitably rear the hog as to raise a high-class animal of any other breed; therefore, it is essential that proper methods are established before beginning this, as well as any other business, otherwise failure is liable to be the result.

We believe that any one who has a desire to follow the industry, and would properly prepare for the breeding and raising of hogs for market, can make a great success in California. The preparations necessary are, first, a sufficient quantity of land to raise both green and dry feed; secondly, a properly constructed building with pen room for from 50 to 100 stock sows of improved breeds; well-drained pens constructed so as to be kept free from dirt at all times, with plenty of water available for cleaning purposes; thirdly, the sows should all farrow early in December of each year, and litters equalized so that each sow should suckle not less than eight pigs, and an abundance of cooked feed of a variety of cereals and vegetables given them at regular intervals daily through suckling season, during which period the pig would soon learn to eat and take on flesh, so that at weaning time he would be in good condition to turn into an alfalfa pasture and run until a field of grain was ripe. Then turn your market stock in on the grain and there let them remain until fall; then take up, top off with a series of ground and prepared food, and have them ready for market at from ten to twelve months old. This business systematized something after the above suggestions would surely be a profitable venture, as we are familiar with its workings in a small way in this State, and know of one shipment of 100 head of hogs this season that averaged 300 pounds each at not quite twelve months old, and from which the breeder realized five cents per pound live weight, aggregating \$1500; and we venture to say the cost of raising this lot did not exceed \$5 per head. This is but one of the many industries that is capable of improvement in California at the present time.

POULTRY FARMING.

The production of poultry and eggs is another neglected resource of our State. A systematic enlargement of this industry is most susceptible at this time, as large importations are annually made of these important articles of commerce. Had the same spirit that actuated the development of luxuries in this State been shown in promoting the production of the necessities of life, conditions that now exist would have been quite different. But, as we before pointed out, people are not unlike sheep. Where one goes the others follow, not giving proper consideration to existing circumstances, but rush headlong, following the example of others; whereas, they should seek investments where competition is slight, thereby enhancing the value of their work and reaping the benefit of its introduction before the field becomes too full of workers.

It is not too late by any means to enter into the development of resources that are now available in this State. Blessed as we are with both climate and soil that invites agriculture in its fullest scope, we say that within the borders of this great commonwealth the opportunities for its successful following are as great as ever. All we now require is the right kind of people to take advantage of them and reap the benefits.

BEET SUGAR.

Our desire and object being to encourage the cultivation of such products here in our own State that are now purchased from abroad, we take this occasion to call attention to another most important industry that is open for extension by the use of both labor and capital, and that is the manufacture of sugar from beets. As few people, comparatively speaking, realize the quantity of sugar consumed annually in the United States and the great drain incident thereto upon the finances of the country for the purchase of sufficient foreign sugar to supply the demand, and which should be met by home production, we take this opportunity to present a few facts bearing upon this important production and the necessity for its further development, whereby profitable employment may be given to our labor-seeking people, and a saving to consumers of this great commodity. The official figures of importation show our imports of sugar for the fiscal year ending June 30, 1893, to have been 3,746,961,949 pounds, and the total amount of sugar raised in the United States upon which bounty was paid was 482.

(Continued on page 119.)

THE HOME CIRCLE.

Application of Proverbs.

Two proverbs in ancient book I find,
And on their inconsistency I ponder.
The first says—"Out of sight is out of mind,"
The second—"Absence makes the heart grow fonder."

I made suggestion to the girl I love—
"We'll try it, it's the only thing to do;
Our double evidence will clearly prove
Which of the two is false and which is true?"

"This summer while you wander by the sea,
I in the city have my life Elysian,
I'll neither write to you, nor you to me
Till in a month we render our decision."

The weeks crawled by, I grew quite thin and pale,
My eyes reduced to mere consumptive hollows;
At length the month was up, and through the mail
There flew two letters which were writ as follows:

Mine read "Dear love, the test was too severe;
Though long the time, not once my mind did wander,
I think we've proved conclusively, my dear,
That absence makes the heart just ten times fonder."

She wrote "Dear Tom, I think by now you'll find
Which proverb was the right one after all,
Of course when out of sight one's out of mind,
I'm to be married in the early Fall."

—Martha M. Schultze, in Life.

Theory and Practice.

A meeting was recently held in town
To help the poor. Good Minister Brown
Arose and made a splendid oration
About the present business stagnation,
And he said, for his part, he could not see
What caused the depression and misery
Of the unemployed, and prayed before long
That the weak might triumph over the strong.

Deacon White stood up 'midst loud applause,
And made a speech on effect and the cause;
Then old Judge Greene spoke of tariff and tin,
The political parties, out and in,
Professor Wilson talked of the ocean
Seen on Mars, and perpetual motion;
They talked of everything—of the weather,
Science, art, taxes, free wool and leather.

A wise old farmer said never a word,
He listened and smiled at all that he heard;
But when they got through, he stepped to the front
Of the platform and said, "Perhaps I'm blunt,
But talk is cheap, and you're all great scholars,
The speeches is fine, but where's the dollars?
Now here is fifty, it's money they need,
Fine speeches and talk make mighty poor feed!"

—Henry Coyle, in Boston Globe.

Wanted: a Governess.

I AM sorry, Ella, but I see no other way. Since your uncle's death, you know it is with the utmost difficulty that we keep up this show of outward appearances, and now that Pauline is coming home from school, a finished young lady, I must strain every nerve to give her a proper debut into society. To do this, our home life must be curtailed to the extreme limits. It would not do to have your position a subordinate one in the household, as that would reflect upon me; so, my dear, the sooner you can find a convenient opening as governess the better I shall be pleased, and the two or three plain dresses you may need I will provide you with. Perhaps it might be a good thing to advertise immediately. With your accomplishments you will have no difficulty in procuring a proper situation."

An answer trembled on the girl's lips—sensitive, pretty lips—which half parted to show the white, even teeth beneath them, but a glance into Mrs. Harding's cold, resolute face, the icy calm of her tone, caused the words to die unspoken, and with simply a bow of the small, well-shaped head, Ella Travers turned and left the room. Once the door closed upon her, once the need for restraint passed, and with quick, hurried steps she sought her own room, locked and bolted the door against all intrusion, then, with flashing eyes, drew herself proudly erect.

"How dare she? How dare she?" she said aloud. Not that I am afraid or ashamed to work, not that I feel there is ignominy in going out to fight my own way in the world! I, at least, can never meet with less kindness; but with uncle scarcely a year in his grave, to so coolly thrust me forth! But at this latter thought, the spoken utterance of the name which to her was synonymous with father, a sudden revulsion of feeling swept over the girl, the flashing eyes grew moist, the look of proud defiance gave place to one of a sorrow too new to have lost its pang, and dropping on her knees by the bedside and burying her chestnut-crowned head in the pillow, sobs racked the slender frame, while repressed grief and excitement had at last full vent. "Uncle! Uncle!" she sobbed. "She has

sent me from your home—the home you told me should be always mine. Well, it will not hurt me, since I know you are not here, since your voice can never again bid me welcome to its threshold. But, oh, this long, long year I have missed you so, and you, O uncle, even in heaven—have you once felt sorry for little Nellie?"

It was minutes ere the storm of grief had passed; then, bathing the swollen lids to avoid all trace of tears, the old, proud look settled again around the eyes and mouth, and Ella Travers again descended the stairs, prepared to make no sign.

"Mr. Hamilton has returned, mamma. Have you seen him?" said Pauline Harding to her mother, a fortnight later.

"No, my dear. I hear, however, he has come into possession of an immense fortune. He used to be a great favorite of your poor father, who really gave him his first advancement in life. Therefore, I presume, he will be only too happy to renew the acquaintance." And Mrs. Harding cast a look of pride at the tall, strong-looking brunette into which the little girl Roy Hamilton had once known had now developed. "Ah, Ella!" turning to her niece, who had just entered the room. "Any answers yet to your advertisement?"

"None, Aunt."

"I fear it will be necessary to take more active measures. Pauline, my dear, you look weary. Lie on the sofa, and Ella will play for us."

Without further request, the girl seated herself at the piano, and soon the music of one of Schubert's sonatas floated through the room. All, absorbed in their own thoughts, were unaware of a peal of the bell and a slight disturbance in the hall, until the drawing-room door was thrown open and the name of Mr. Hamilton ostentatiously announced.

Mrs. Harding and Pauline sprang to their feet and advanced with outstretched hands to meet the newcomer. From under the shadow of her long lashes, Ella vouchsafed him a single glance—only one; but that sufficed to imprint upon her memory forever the face and form of the very handsomest man she had ever seen. With pleasant, courteous words he received the impressive welcome yielded him, then came toward where she sat, now turning over the music leaves.

"Has Miss Travers entirely forgotten her old friend, then? You will, at least, allow me to reinstate myself in the memory of the little blue-eyed girl who used to come stealing in and out of her uncle's study, disturbing our most sober chats."

A look of annoyance spread over the features of the two spectators to this little by-play; but Ella's hand rested lightly and coldly for a moment only in his own. A few forced words of welcome fell from her lips, and with a strange expression on his handsome face, Roy turned from her side and was soon seemingly oblivious of all save the dark eyes of Pauline.

"Mr. Hamilton is evidently much interested in Pauline," said her aunt, one morning a month later. "His frequent visits are becoming quite marked. I think it would be quite as well, Ella, to leave them more alone."

"I did not know that warning was considered necessary, aunt," and the little head was raised more proudly erect. "I do not think I often intrude upon their confidences. Hereafter, when Mr. Hamilton deigns to ask for me, make what excuses you will for my non-appearance, only spare me these after-remarks," and once more Ella fled to her own room.

"Why should I care?" she thought. "He thinks I have forgotten those happy days when his bright, boyish face would bend down to mine and, laughingly taking me on his shoulder, he would call me his little wife. Ah, my memory is better than you imagine, Mr. Roy. I am not likely to forget."

"What has become of your cousin, Miss Pauline?" Mr. Hamilton questioned a few evenings later. "I so rarely see her. She is wonderfully pretty, is she not?"

"I did not know that she was so considered. I have never considered any hidden charms; and as for not seeing her, she shuts herself so constantly in her room and refuses to see her friends, that it is quite mortifying. She cares nothing at all for society, considers it a bore, in fact, and occupies herself entirely with her own pursuits."

"She must find them very engrossing."

"Well, to be frank, I have never inquired into their nature. I am so fond of companionship, so attached to my friends, that I cannot understand any one thus voluntarily secluding herself. By the way, Mr. Hamilton, do you intend joining our skating club this winter?"

"If I may be permitted; it is a favorite pastime of mine."

"We shall be only too happy to enroll

you as one of its members. The ice is in excellent condition on the river now, and next week our carnival begins."

It was late that night ere the street-door closed on Roy Hamilton's form, and glancing back at the house, one light from an upper window shone down into the darkened street; a girlish form flitted to and fro before the shade. He stood for a moment watching it.

"Poor little girl!" he muttered, and wended his way homeward with thoughts coursing through his brain, which, had Miss Pauline known them, would have worked sad havoc with her best-laid plans. It was midnight ere the light he had seen was put out, and its last gleams fell upon a letter directed in a firm characteristic hand, whose contents signified the acceptance of a long-sought situation.

"The sooner the better now," was the last thought as the tired young head was laid on its pillow. The sad young heart forgot its sadness in dreamless sleep.

With the letter in hand, ere Pauline had risen from her luxurious couch, Ella started out to mail it with her own hands, and then to pray for a speedy reply, and make an end of thought and memory. She placed it in the box with a sigh of relief and turned homeward, when a cheery "Good morning!" broke the stillness of the hour, spoken by the voice she knew but too well.

"This is indeed a surprise. What wonderful event has caused Mr. Hamilton to rouse from his slumbers at this early hour?"

"The surprise is rather to me. Only I may ask: What have I done to insure myself such wonderful good fortune?"

"Early rising is nothing new to me. It is well so, since fate has ordained me for one of the workers in the world."

"You a worker!" glancing down at the small, white, ungloved hands, the delicate frame, the beauty of the girl at his side. "Pray, when was fate so cruel?"

"Not cruel; rather, kind, Mr. Hamilton. Thank God this life of dependence will soon be over!"

"Child, what do you mean? Dependence in your uncle's home, who stood to you in a father's stead, to whom you were dear as a daughter? What has changed you so, Nellie? Where is the little girl I used to know? You did not use to be so hard and cold!"

There was a dangerous sweetness in his tone, a fascination in his presence, but the girl steeled herself against it, as she answered quietly:

"Necessity is a stern teacher—one you have fortunately never met with."

"And may I not shield you from its lessons?"

A flash of indignation shot from the bright eyes. This from Pauline's lover?

"I need no shield, Mr. Hamilton. My own breast-plate is sufficiently strong. Good morning!" And with a quick bow she ascended her aunt's steps, which they had just reached, nor cast a single glance at his quickly retreating figure.

"Ella, I hear the ice is not considered safe. Get your skates—will you not?—find Pauline and tell her I wish she would not remain longer."

It was a merry scene upon the river, and when Ella at last found her cousin her warning was received with a laugh.

"Mamma has been misinformed. The ice is perfectly secure."

And so Ella, freed from all responsibility, thought she, too, would enjoy the exercise. Not for months had she been on skates before, and, gliding off away from the merry throng, she soon found herself alone. On and on she went, drinking in the fresh air, forgetting sorrow and care existed, until under her feet came a crackling noise, and, looking down, she saw, with horror, the surface of the ice trembled. Quickly she sped backward over the frozen surface. The gay groups were again in sight. One solitary figure was wending his way toward her. She raised her muff to wave him back, when, with a report like a pistol, the ice gave way, and, with one half-uttered scream for help, she felt the water clasp her in its freezing hold.

"Thank God, my own, my darling!" were words softly uttered, falling on her ear, as, opening her eyes, she found herself in the old sitting-room and Roy Hamilton's face, pale and anxious, bending over her. "I thought I had lost you, Ella," he said. "Darling, I have loved you always. Is there no hope for me?"

Too weak to resist, too exhausted to rebel, she felt herself clasped in his arms and knew she had gained harbor and safety, and with a great joy at her heart gave back to him the life he had rescued at risk of his own.

"Here is a letter for you, Ella," said Mrs. Harding, entering the room. "Your terms

are accepted. What does this mean?" she added, glancing at the wet garments Ella had forgotten.

"Nothing, madam, save that your niece has had offered her more advantageous terms and an engagement for life, which, I trust, will prove equally satisfactory to all parties," was Roy's proud reply. "Some one has lost a governess, Mrs. Harding; I have found a wife.—Jenny Wren.

A Good Dog Story.

A writer in *St. Nicholas* tells of visiting a party of friends in the Bendigo gold fields, where he was cordially welcomed. "Among the valued possessions of my friends," he continues, "was an English mastiff named Rex, which belonged to one of the gentlemen. The good understanding between myself and the mastiff had appeared to become so well established during the evening that on the next day I left the claim where my friends were at work to fetch a kettle of tea from the tent, without the least misgiving as to my reception by him.

"Rex, who was always allowed to run loose, came forward to meet me. He allowed me to stroke his head, and, so far as I could see, showed no interest in my movements as I entered the tent and took a drink of the tea. But when I started to leave the tent with the kettle in my hand, imagine my astonishment when I saw the supposed friend Rex facing me, and showing his teeth in a very threatening way. I put down the kettle, seated myself on the edge of the camp bed and spoke to him. He wagged his tail and looked so friendly that I thought I must have made a mistake about his intentions. Not at all. The moment I attempted to leave the tent with the kettle I had reason to know that Rex's broad grin was no mere notion, but, on the contrary, a real sign that he was true to his trust as he understood it.

"I talked to him again, set down the kettle and attempted to leave without it. Still Rex objected. He had his doubts and determined to give his masters the benefit of them. There was no help for it; I was held a prisoner, and could do nothing but sit down and wait patiently for one of the party to come to my relief. No one came until nearly an hour later, by which time my long absence had caused friends to suspect that I was being held prisoner by Rex. I bore the dog no grudge for his faithful zeal, and in a few days found he would let me come and go and take whatever I wished."

Ceremonial of the Garter Dance.

The youngest of the Emperor Frederick's daughters is the Princess Margaret, who recently became the wife of Prince Charles Frederick of Hesse. Their marriage took place in Berlin with great pomp and in the presence of many of the princes and notables of Europe. On this occasion the picturesque and historic garter dance, famous in Prussia for generations, took place, as is the custom in the German court. The details of this ceremonial are very curious. A field marshal, with his baton of commander in his hand, advances, followed by all the ministers. Then comes the bridal party. After some preliminaries a double line of dancers is formed, something as in the Virginia reel, and the bride opens the ball by dancing first with her husband and then with the other members of the royal family. Torches and Venetian lanterns borne by pages and soldiers illumine this brilliant scene, while gay uniforms and the toilets of pretty women give the final touch to the picture. When the bride has finished dancing two noble ladies lead her into a corner and take off one of her garters, which is cut into small pieces and distributed among the dancers. At the marriage of Princess Margaret the Duchess of Connaught and her grace the Landgrave of Hesse were charged with this delicate duty. The garter dance finishes as it began, each one taking his place by the flaring light of the torches, while with lively music the procession reforms and marches away. One point worthy of note on this particular occasion was the exclusion of Chancellor Caprivi, and other high personages of the empire, from the festivities.—*St. Louis Republic*.

Bread and Butter Letters.

More than once I have been seriously troubled because a young friend has failed to acknowledge to me her safe arrival at her home after visiting me, writes Mrs. Lyman Abbott in the February *Ladies' Home Journal*. The "bread and butter letter," as it is sometimes called, because it is supposed to be an expression of thanks for what bread and butter stands for, should be written 24 hours after arrival at one's destination,

to the hostess whose hospitality one has been enjoying. It is not quite enough for a young man who has been visiting his college mate to write to him alone; courtesy calls upon him to send at least a brief note to his friend's mother, or the lady taking her place. You think it is not an easy thing to do, and it is not altogether if you try to make your note unique and different from others; but the simplest way is the best way, and if you have had a pleasant time say so. An agreeable incident of your journey, or a few lines about the circumstances into which you have gone, will make a letter which your hostess will enjoy, and she will set you down in her selected list of well-bred young people. Besides that, you will have the consciousness that you have been thoughtful of another's feelings, and have not been guilty of the appearance of ingratitude.

A Valentine.

Accept, dear wife, this little token,
And if between the lines you seek
You'll find the love I've often spoken—
The love I'll always love to speak.

Our little ones are making merry
With unco ditties rhymed in jest,
But in these lines, though awkward very,
The genuine article's expressed.

You are so fair and sweet and tender,
Dear, brown-eyed, little sweetheart mine,
As when, a callow youth and slender,
I asked to be your valentine.

What though these years of ours be fleeting?
What though the years of youth be flown?
I'll mock old Kronos with repeating,
"I'll love my love and her alone!"

And when I fall before his reaping,
And when my stuttering speech is done,
Think not my love is dead or sleeping,
But that it waits for you to come.

So take, dear love, this little token,
And if there speaks in any line
The sentiment I'll fain have spoken,
Say, will you kiss your valentine?

—Eugene Field.

Gems of Thought.

A man that runs away may fight again.—
Demosthenes.

When a man and woman are married
their romance ceases and their history commences.—
Rochebrune.

The aim of all intellectual training for
the mass of the people should be to cultivate
common sense.—
J. Stuart Mill.

Good manners are a part of good morals,
and it is as much your duty as your interest
to practice both.—
Hunter.

Trust him little who praises all, him less
who censures all, and him least of all who
is indifferent to all.—
Lavater.

Even the wisdom of God hath not suggested
more passing motives, more powerful
incentives to charity than these, that we
shall be judged by it at the last dreadful
day.—
Atterbury.

It is too bad that a poor wretch can be
punished for stealing your pocket handkerchief
or gloves, and that no punishment
can be inflicted on those who steal your
time.—
Byron.

The heroic example of other days is in
great part the source of the courage of each
generation; and men walk up composedly
to the most perilous enterprises, beckoned
onward by the shades of the brave that
were.—
Arthur Helps.

Great is the power of a life which shows
that its highest experiences are its truest
experiences, that it is most itself when it is
at its best. What a piece of the man was,
for that shining instant, it is the duty of the
whole man to be always.—
Phillips Brooks.

Holy in the German language—heilig—
also means healthy. Our English word
whole—all of one piece, without any hole in
it—is the same word. You could not get
any better definition of what holy really is
than healthy—completely healthy. A sound
mind in a sound body.—
Carlyle.

A struggle with poverty is a wholesome
wrestling match at three or five and twenty.
The sinews are young and are braced to the
contest. It is upon the aged that the battle
falls hardly, who are weakened by failing
health, and, perhaps, enervated by long
years of prosperity.—
Thackeray.

Moderation is a fear of falling into envy,
and into the contempt which those deserve
who become intoxicated with their good
fortune; it is a vain ostentation of the
strength of our mind; in short, the moderation
of men in their highest elevation is a
desire of appearing greater than their
fortune.—
Rochefoucauld.

The first United States postal cards were
issued in May, 1873, and during the first two
months of their existence 31,000,000 were
used.

YOUNG FOLKS' COLUMN.

Dennis.



DENNIS was a pig, but not by any means an ordinary, common porker. Ask any of the sailors who were acquainted with him on the U. S. S. Vanderbilt, and they would indignantly repel that idea. When you have finished the story of his life, perhaps you will agree with them in thinking him a rather remarkable pig.

Dennis was a very little fellow when he was first taken aboard his floating home, with a number of his companions, to serve as fresh meat for the officers and crew. One by one the members of the porcine tribe were slain and eaten; but Dennis, because of his diminutive size, was reserved until the last, and then, missing his mates and not being confined to a sty, he began to hang about the men and seek their acquaintance in his dumb fashion.

The sailors, having had their fill of fresh meat, were gratified by these marks of friendly feeling in an animal usually considered to be somewhat obtuse in such ways, and concluded that they would rather have the pig as a pet than as pork. So a petition was sent to the captain to that effect, and was readily granted.

Now Dennis became a privileged character on board ship. He took his meals with the crew, trotting from one man to another to get his portion of the viands, and you may be sure he was always generously served. What games of romps the tars used to have with him on the gun deck in loafing hours!

The pig would find a hiding place behind one of the guns and ensconce himself there, his little eyes fairly twinkling with the fun of the proceeding, while the men pretended to hunt for him, carefully avoiding his place of concealment, until at last, as they passed that particular gun, Dennis would rush out on them with a squeal of delight, and away they would all go in a race for the other end of the deck, the pig generally contriving to trip up one or two of his playmates on the way.

Another of his tricks was to secure a piece of rope and go about with it in his mouth, grunting, until some one was obliging enough to take hold of the other end, when he would enjoy a pulling match with his opponent quite as much as a dog ever does.

As the ship drew near the tropics, Dennis, having grown decidedly fat with his good living, felt the heat very much, and his one solace was to climb into the water trough and lie down under the spout of the pump, making known his whereabouts with loud grunts, until one of the old captains of the forecabin, hearing him, would call out to the younger sailors:

"There! two of you lazy lubbers, why don't you go and pump on Dennis? Don't you hear him calling you?"

Dennis was accordingly pumped on until he signified he had had enough of it by rising and waddling off.

The ship touching at Valparaiso, a few sheep were taken on board, destined to the same end that Dennis had escaped. The pig had rare fun with these timid creatures, chasing them all about the deck, and delighting to see them flee before him.

He persisted in these tactics until but one lamb was left, and the sailors predicted that Dennis would save the butcher the trouble of killing that one by worrying it to death, since he was now free to concentrate all his energies upon it. Therefore, what was their surprise on turning out one morning to find the lamb and Dennis sleeping close together, the lamb's head pillowed on the pig's fat side. Who can say that Dennis did not remember his own former loneliness, and therefore took compassion on the forlorn little creature who was left in the same condition?

His actions afterward seemed to point to that conclusion, for, losing his character of persecutor, he became Billy's protector and friend, and "everywhere that Dennis went the lamb was sure to go."

This devotion was irksome to the pig sometimes, and particularly so on those occasions when, comfortably disposed in the water trough, he was taking his noonday bath, his two willing slaves at work at the pump handles and the cooling stream of water trickling down his sides. Just then, in the height of his enjoyment, a mournful bleat would rise in the still air, and denote that Billy had missed his companion and was bemoaning his absence.

At first Dennis would pay no attention. He was so comfortable that he really could not afford to disturb himself; but as the

bleating became louder and more importunate he would become manifestly troubled, giving vent to his dissatisfaction with low noises, until finally, no longer able to bear the lamb's bleating, he would, with a mighty effort, hoist himself to his legs, stick his head over the edge of the trough and grunt loudly at Billy, saying, as plain as possible, in pig language:

"There, you silly little thing! Now you see where I am, and can't you be good enough to leave me in peace and quiet for a while?"

The bleating would thereupon cease, and Dennis would lie down and resume his bath with a serene sense of duty performed.

It did seem as if Dennis had every prospect of living to a green old age, surrounded as he was with such devoted love and care, but, sad to say, his end was an untimely one, and this was the manner of it: The man who did the butcher's work on the Vanderbilt was a sour, surely fellow, with an inborn taste for his trade. His disposition was just ugly enough to afford his messmates pleasure in making him the butt of their jokes, and sore from one or two recent specimens of fun, he cast about in his mind for some suitable piece of revenge.

Having matured his plans, he went one day to Lieut. G., who was then caterer of the wardroom mess, and informing him that all the fresh meat had given out, inquired whether he should kill the pig. The officer nodded a careless assent, probably thinking, if he gave the matter any thought at all, that the animal referred to was the last one of several porkers that had been taken aboard not long before. The idea that such a question could apply to Dennis, the spoiled darling of the crew, never entered his head.

Words cannot describe the grief and commotion forward when Jackson, the butcher, was discovered dragging Dennis along the deck, and his intentions in regard to the pig were ascertained. He was quick to say that he had his orders from an officer, justly apprehending that some violence would be done him otherwise.

At first the sailors were so confused by this unexpected turn of affairs that they could only exclaim and wonder over it, but as Jackson calmly continued his preparations they took hasty council together, and finally a detachment of them went to the mast to ask Lieut. G. if it was really true that he had given such a command. The lieutenant was greatly surprised when informed of the true state of the case, and told one of the men to run forward immediately and countermand the order.

The message, alas! arrived too late. Poor Dennis had already received his death blow, and the sorrow of the crew knew no bounds. The men resolutely declined to have any of the meat served out to them, and one grizzled quarter gunner expressed the general sentiment when he said, in a voice suspiciously husky, "Dye s'pose, lads, I'd touch a bit of that pig? Eat Dennis! I guess I'd just as soon eat one of my friends. Where'd be the difference? Might as well turn cannibal at once and be done with it!"

So bitter was the feeling against Jackson, the butcher, that when his death occurred later in the cruise the current opinion among the men was that a rightful retribution had overtaken him; and one thing is certain, that his mourners were by no means as numerous or as sincerely afflicted as those of Dennis, his victim.—
M. L. Clark, in Youth's Companion.

An Ideally Bad Boy.

Tom was a bad baby, from the beginning of his usurpation. He would cry for nothing; he would burst into a storm of devilish temper without notice, and let go scream after scream and squall after squall, then climax the thing by "holding his breath"—that frightful specialty of the teething nursling, in the throes of which the creature exhausted its lungs; then is convulsed with noiseless squirmings and twistings and kickings in the effort to get its breath, while the lips turn blue and the mouth stands wide and rigid, offering for

inspection one wee tooth set in the lower rim of a hoop of red gums; and when the appalling stillness has endured until one is sure the lost breath will never return, a nurse comes flying, and dashes water in the child's face, and—presto! the lungs fill and instantly discharge a shriek, or yell, or a howl which bursts the listening ear and surprises the owner of it into saying words which would not go well with a halo if he had one. The baby Tom would claw anybody who came within reach of his nails, and pound anybody he could reach with his rattle. He would scream for water until he got it, and then throw cup and all on the floor and scream for more. He was indulged in all his caprices, howsoever troublesome and exasperating they might be; he was allowed to eat anything he wanted, particularly things that would give him the stomach ache.

When he got to be old enough to begin to toddle about and say broken words and get an idea of what his hands were for, he was a more consummate pest than ever. Roxy got no rest while he was awake. He would call for anything and everything he saw, simply saying, "Awnt it" (want it), which was a command. When it was brought he said in a frenzy, and motioning it away with his hands, "Don't awnt it! don't awnt it!" and the moment it was gone he set up frantic yells of "Awnt it! awnt it!" and Roxy had to give wings to her heels to get that thing back to him again before he could get time to carry out his intention of going into convulsions about it.

What he preferred above all other things was the tongs. This was because his father had forbidden him to have them lest he break windows and furniture with them. The moment Roxy's back was turned he would toddle to the presence of the tongs and say "Like it!" and cock his eye to one side to see if Roxy was observing; then, "Awnt it!" and cock his eye again, then "Hab it!" with another furtive glance; and finally, "take it!"—and the prize was his. The next moment the heavy implement was raised aloft; the next there was a crash and a squall, and the cat was off on three legs to meet an engagement. Roxy would arrive just as the lamp or window went to irremediable smash.—
Mark Twain's "Puddin' Head Wilson," in January Century.

Fun and Sentiment.

FELT THEM PLEASANTLY.—Mrs. Doo-good—"Do you feel the hard times, my good man?" Tramp—"No ma'am; everywhere I go they tell me there's no work."—
Puck.

There is about human nature a certain vanity which makes a man feel in spite of all reasoning that his name is the most conspicuous thing in the city directory.—
Washington Star.

A LAW UNTO ITSELF.

They're fools who try to put love on
A stupid scientific basis;
Who say, "With myths of days bygone
This silly passion's proper place is."
Despite their talk in all its grooves
It rolls with reinforced insistence,
Which shows love's not a force that moves
Along the plane of least resistance.

First Artist—"I received a magnificent tribute to my skill the other day at the exhibition." Second Artist—"What was it?" First Artist—"You know my picture 'A Storm at Sea?' Well, a man and his wife were looking at it, and I heard the man say, 'Come on, my dear, that picture makes me sick.'"—
Brooklyn Life.

Bragg—"I am a self-made man, sir. I began life as a barefoot boy." Jenks—"Indeed! Well, I wasn't born with shoes on either."—
Exchange.

"Mamma, when Willie has a toothache you take him to the dentist to have it filled, don't you?" asked Tommy. "Yes, dear," said mamma. "Well, I've got a stummick ache. Don't you think we'd better go to the candy store?"—
Harper's Bazar.

Among the South Sea Islanders, for a long time after their acquaintance with Europeans began, all values were expressed in axes.

Highest of all in Leavening Power.—Latest U. S. Gov't Report.

Royal Baking Powder
ABSOLUTELY PURE

Write for Special Circular.

AGRICULTURAL NOTES.

CALIFORNIA. Alameda.

The Watsonville *Pajaronian* says: Pleasanton, Alameda county, has had a bit of experience with the beet business the past year, and, like every other place that has had such experience, is willing to have more. Last year that district furnished 150 acres for beet planting; this year it is to have 800 acres. The beets from this section are milled at the Alvarado factory. The railroad company has made a rate of 65 cents per ton from Pleasanton to Alvarado, including switching, and is to put in a spur track from the main line to the factory. If Congress will keep its hands off and the railroad companies make a reasonable freight rate for beet traffic, California will soon become one of the great sugar-producing sections of the world. If there were fewer ambitious office-seeking lawyers in Congress and more men of the active business and producing classes in their places, sugar interests would not be menaced as they are now.

Butte.

Farmers on the adobe lands west of Nelson and Biggs assert that grain is in splendid condition and growing rapidly.

Fresno.

Hanford *Journal*: A meeting of raisin-growers was held in Fresno last Saturday forenoon to discuss the best method of marketing the next crop. The general sentiment of the meeting seemed to be that the two years' experience with commission packers and sellers has demonstrated that this mode of marketing the raisin crop is a dismal failure, as far as financial results to the growers are concerned. A resolution to endorse the lately organized State Raisin Exchange was lost. The meeting adjourned until February 3d without taking any decisive action.

Humboldt.

Humboldt county nurseries had the following stocks at the beginning of the season:

	Number of trees.
Apple.....	140,000
Peach.....	60,000
Pear.....	10,000
Cherry.....	9,000
Prune.....	155,000
Plum.....	6,000
Apricot.....	6,500
Quince.....	2,500
English walnut.....	1,700
Other nut-bearing trees.....	2,000
Fig, olive, etc.....	3,000
Evergreen.....	20,000
Berry stocks.....	40,000

The stocks most in demand are apple, prune, peach, cherry and pear in the order named.

Kern.

Kern County *Echo*: A San Francisco pelt-buyer was here a few days ago and stated that owing to the tremendous fall in the price of wool there would necessarily be a corresponding drop in the price of pelts. For instance, "long-wool" pelts, for which the sheep men got \$1.10 and \$1.15 last year, are worth only 25 and 30 cents this year. "Mediums" have fallen from 75 cents to 20 cents, and "shorts" from 45 to 15 cents. This all counts in the year's profits.

Kings.

Hanford *Journal*: The growing of sugar beets is receiving the attention of the farmers of this vicinity. Thos. Heriford is going to set out a number of acres this year, as an experiment, and Sam Shannon of Coalingo is going to give this vegetable a trial on his place. With wheat at such a price that a bare living can hardly be made out of it, farmers naturally are looking for something more profitable.

Hanford *Sentinel*: Some of the farmers near Armona have leased their fruit ranches to Chinamen for a term of years, according to reports. While we believe that any man has a perfect right to conduct his private business as he sees fit, we hope none who are renting out to the Chinese will be found preaching anti-Chinese doctrine from the stump hereafter.

N. W. Motheral, quarantine officer for Kings county, has issued the following notice to fruit-growers: A careful inspection of the orchards of Kings county reveals the fact that the brown-necked Symnus, the parasite of the San Jose scale, has been greatly diminished by want of food, and as a consequence the San Jose scale has reappeared in almost all the orchards, and it will be necessary to resort vigorously to the old methods of spraying with lime, sulphur and salt. Farmers had better mix their own wash and see that it is well prepared. The following is the formula for preparing the wash: Unslacked lime, 50 pounds; French sulphur, 20 pounds; salt, 15 pounds.

Napa.

Ira W. Adams of Calistoga writes as follows to the Sonoma *Farmer*: For the past ten years I have been trying to raise the world-renowned Hubbard squash, as I consider it much superior to any other I ever raised. My efforts have been almost a failure, for the following reasons: The shell of the squash is very tender when young, and the black squashes nearly destroy more than one-half of them. Those that escape the ravages of these destructive bugs are nearly ruined early in September by sunburn—often one-half or more of each squash is fairly cooked. In the summer of 1891 I succeeded in crossing the Hubbard with the Sibley squash, the last named being equal if not superior to the Hubbard as a table squash, but very much inferior as to

size. I have since then carefully saved the seeds from the extra choice squashes and by so doing I have now a valuable table squash for winter use, with a very hard shell. The rind or shell of this squash while young is quite hard, so much so that I have not had a single one damaged by bugs, neither have I lost a single one by sunburn. They are not only valuable for the table, but are most excellent for cows, horses and hogs, and when baked are fine for hens. For the foregoing reasons, I believe my hybrid squash will be a most valuable acquisition to farmers who are living in the interior counties of this State where the summers are long and hot, and who perhaps, like myself, have tried in vain to raise the Hubbard successfully.

Monterey.

"We, the undersigned laborers, do hereby cease our labors on the King ranch, and will not go to work for less than \$30 per month." The above manifesto was signed by 16 of the King ranch hands, and was shown to James Lynn, the foreman, last Sunday. As a result, all the crew, with the exception of half a dozen who went back to work at the old rate, viz., \$1 per day and board, are out, and their places have been filled by new hands. Supply and demand regulate the price of labor as of everything else, and the desperation with which the unemployed in San Francisco fight for a \$1 a day job should have made the boys pause before taking the step they did, and injuring the cause of labor by their failure.

Placer.

Newcastle *News*: The Co-operative Fruit Company has a carload each of sulphur and salt, which they are prepared to furnish to ranchers at low figures. The company has also another car of Livermore hay in transit which will arrive by Thursday of this week.

The *Record-Union* says that the Sacramento Olive Company is preparing to set out their olive orchard near Newcastle. Six thousand olive trees arrived for them on Saturday last from the south, and 5000 more will follow this week. The company intends to plant three varieties, and of the first consignment, 2400 Mission, 1800 Uvaria and 1800 Pendulina.

San Bernardino.

Redlands *Citrograph*: H. L. Salsbury of Cucamonga will have about 8000 sacks of potatoes from 75 acres, and will net from \$3000 to \$4000 for six months' work. The potato may be a homely fruit, but surely in this case it contains a sweet flavored juice for Mr. Salsbury.

San Luis Obispo.

The San Luis Obispo *Tribune* reports the sale of 183 acres in the Nipomo tract to an Indiana man for \$7320. He intends to plant it in prune trees. The *Tribune* adds: "That sort of thing, as we have often said, is precisely what our own people ought to be doing, but, as with other industries in the past, it is most likely that new blood and new energy will be required for the work, and, in the meantime, our farmers will keep on in the old, worn-out, poverty-stricken rut, trying to raise wheat in competition with Russian and Indian peasants and imagining that the low price thereof has something to do with the silver question instead of calculating the cost of wheat when produced by laborers who get five cents a day."

Santa Cruz.

The Watsonville *Rustler* quotes a local prune-grower as follows: "I do not think the fruit-growers suffer as much at the hands of the middleman and commission merchants as they do at the hands of the retailers in the East, because the commission man is willing to clear a cent or cent and a half on the pound, whereas the Eastern retailer buys our prunes for 7 and 9 cents, say, and asks all the way from 15 to 20 cents a pound for them. The effect is to check and confine the consumption, which means much to our increasing orchard area and production. There is no way, you see, in which to get at the retailer and make him behave himself, while by co-operation and combination we can keep the commission merchants within bounds. A friend of mine while in the East last fall had occasion to buy some prunes in one of the thriving towns of Michigan. He was shown an average grade of fruit, such as we have to sell at 5 cents, if not less, and the pious groceryman asked him 18 cents a pound. He seemed much surprised when told that he was making 200 per cent profit, though his conscience did not turn pale. That is the situation exactly, and time contains the only remedy I know of." All of which and more is true. In the San Francisco grocery stores last year prunes sold all the way from 15 to 18 cents per pound. This year they can be bought by the box for 11 cents. The same prunes bring in Santa Clara valley anywhere from 4½ to 6 cents.

Shasta.

Anderson *News*: General Chipman is preparing to plant 20 acres in prune trees on the Herbert place on Bear creek.

An Anderson valley letter says: Pruning is now in full blast, and judging from the pains that most of the farmers are taking with their orchards, shows that they have turned their attention more closely to this heretofore much neglected branch of industry.

Tehama.

The Red Bluff *Cause* reports that a Denver buyer visited Battle creek last week and bought 30 tons of apples, paying one cent per pound, and furnished the boxes, picked and packed the fruit. He gave work to all the girls and boys in the neighborhood and paid them 15 cents an hour. After the fruit was packed he had it hauled to Anderson and shipped from there to Denver. There were more than three carloads of the fruit. The gentleman had been buying

fruit in southern California, but said he had seen no fruit that in any way compared in excellence to the Battle creek apples. The apple-growers of Battle creek have probably now got a market established for their fruit and will be able to sell their crops every year at their doors. Among the oldest apple-growers in that section are Levi Crocker, W. H. Graham, W. E. Hazen, S. M. Charles, J. T. Edwards and Mr. Smith, and these gentlemen disposed of their entire crops.

Sonoma.

Santa Rosa *Farmer*: One of the largest prune orchards in Sonoma county is being planted out by B. M. Jones near Geyserville. It will comprise 11,000 trees of the most productive and desirable variety.

The *Democrat* reports that at a meeting of the Horticultural Society held Saturday afternoon, G. N. Whitaker was elected president, E. Hart vice-president, and W. D. Davis treasurer. The election of secretary was left until the next meeting.

Tulare.

The Tulare *Citizen* takes a gloomy view of things. It says: Several parties in the county have recently leased their orchards to Chinamen. While the securing of a foothold in the fruit industry by the Mongolian is to be deplored, as no civilized labor or branch of industry can compete with them without becoming degraded, yet these men, under present conditions, are not to be blamed for taking advantage of any opportunity to insure the payment of the mortgages held against their homes, and it appears that with the powers that be, so legislating as to contract the price of all labor and its products, only the Chinese are fitted to subsist on the margin left after plutocracy has taken its portion.

Ventura.

The Ventura *Democrat* reports Mr. Todd, the extensive walnut grower, as not being as enthusiastic over the walnut industry as formerly. He says that—contrary to popular opinion—the walnut is comparatively short-lived at the best; that it will not flourish except under peculiar conditions, and will gradually decline as a bearer when it reaches a certain age. It will last but a short time after the tap root strikes standing water, therefore a walnut orchard is a poor investment on shallow soil. For these and other reasons he has taken out a number of his trees.

Yolo.

Black's letter to Woodland *Democrat*: The outlook for the agricultural industry seems to be all that could be desired, so far as crop prospects are concerned. The only apprehension seems to be in regard to the future price of wheat.

Dunnigan letter in Woodland *Democrat*: The sunshine of the past two or three days has had the effect of livening up the farmers a little, and they are now completing the jag ends of farming operations. There is but little more grain to be sown in this community, and that little will be in the ground shortly if all conditions continue favorable.

Go For the Gopher!

In a recent issue of the *PRESS* some attention was called to the destructive work that is yearly accomplished by squirrels, gophers, crows and similar pests. As a matter of course, many farmers are familiar with the facts therein set forth, nearly all having met with more or less loss and annoyance through their depredations. But as the season is timely for a crusade against these robbers, it is thought well to offer some further remarks as to the best means by which the crusade may be carried on to the successful and complete destruction of the common enemy. It is a well-known fact that these little animals are extremely sensitive and equally wily in the manner of selecting their food. Consequently, the difficulty of inducing them to take a poison of any kind is not lightly overcome.

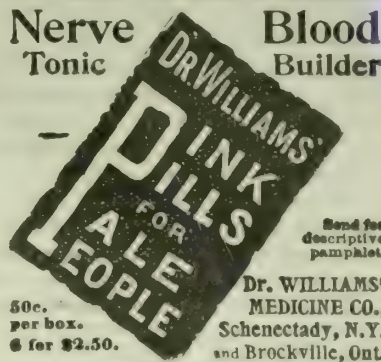
Traps of various ingenious designs have for years been tried with but little success, as have also different plans for fumigating, smoking, inundating, shooting, digging, etc. Of course, poisoning has met with more or less success; but, as a rule, it has not been presented to the fastidious little epicures in a sufficiently attractive form, or its quality has been poor, and it has failed to stand the test of exposure to weather and earth absorption that it must necessarily be subjected to when scattered in their runways. As a result, most attempts in this direction have proved expensive and have been abandoned. As has before been stated, it was to obviate these difficulties that the researches and experiments of Wakelee & Co., the well-known chemists of this city, were begun some fifteen years ago. The principal points to be attained were: 1st. A poison that, when taken, would prove sure death. 2d. A poison that gophers, crows, squirrels and their kind would find so much to their taste that, instead of rejecting it, they would seek it and greedily devour it when found. 3d. Put up in a form that would be easy to ship, as well as convenient and safe to handle. 4th. At a cost that would make the article very much cheaper than anything of the kind ever before attempted, and, lastly, of a quality so enduring that neither time nor exposure would be able to deteriorate it.

That Wakelee & Co.'s celebrated Exterminator has filled all of these requirements for years past, almost innumerable testimonials from the most trustworthy sources bear ample evidence. As is commonly the case when an article placed upon the market proves a success, Wakelee & Co.'s Exterminator has been extensively counterfeited; therefore it behooves the farmer who is anxious to build the largest and dearest pile of squirrels, gophers, crows, etc., at the least expense, to be cautious and buy only the genuine Wakelee & Co.'s Exterminator. Directions for using accompany each can.

—The owner of the United Verde copper mines in Yavapai county, A. T., is to build a railroad to connect with the Santa Fe, a distance of twenty-eight miles.

Nerve Tonic

Blood Builder



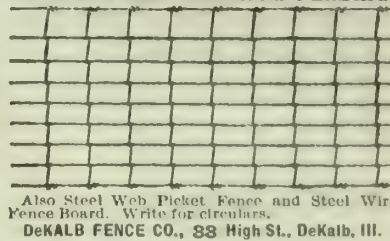
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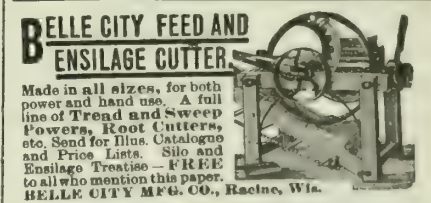
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Made in all sizes, for both power and hand use. A full line of Tread and Sweep Powers, Root Cutters, etc. Send for Illus. Catalogue and Price Lists. Silo and Ensilage Treatise—FREE to all who mention this paper.

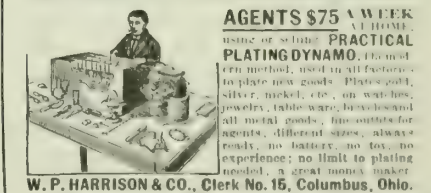
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A dollar a week for sixty weeks, buys a lot 25x125 feet east of Chicago Heights, the great manufacturing suburb of Chicago. Sixteen factories, streets paved, stone sidewalk, beautiful shade trees, schools, churches, etc. No doubt these lots will treble in value within one year. No such bargain was ever offered in Chicago Real Estate. These lots are now on the Belt Line where factories are now in successful operation, employing over 50,000 people. Business transacted for non-residents. Address, DeForest Land Co., Unity Building, Chicago.

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Wanted, a First-Class Single Man To take care of Fruit Orchard. Must understand Grafting, Pruning and Drying thoroughly. Address with terms and references, Y, box A, Rural Press office, San Francisco, Cal.

The Headlight of the Future.

Electric headlights for locomotives will probably come into general use within a few years. Indeed, it will not be surprising if some States pass a law compelling companies to substitute them for the present means of illumination. Eminent authorities agree that many collisions, involving great loss of life and property, could have been averted had the engineers been able to see more than the few hundred feet lighted by the oil reflector. Several of the terrible disasters resulting to the World's Fair special trains, just before the close of the exposition, were mainly due to this fact. The evidence brought out by the coroner's inquest after one of these accidents showed that the night on which it occurred was very dark and foggy, and that the train employees could scarcely see 200 feet beyond the engine's pilot. One of the engineers testified that if he had had a few hundred feet more space he could have brought his train nearly to a stop and greatly diminished the effect of the collision.

While several railway companies, including the Southern Pacific, are experimenting with improved headlights, the Georgia Southern and Florida is one of the first, if not the first, line in the country to use the electric light regularly in operating its trains. In a letter to the *Manufacturers' Record*, Receiver W. B. Sparks writes as follows:

"We have eight electric headlights. They cost about \$375 each in place on the locomotive. The cost of maintenance is not greater than the oil light. An old headlight will not throw its light on a very dark night more than 150 feet, and it is impossible for an engineer to slow up his train in that distance, even with the emergency brake. The electric light throws its light from one-half to three-quarters of a mile. Obstructions can be easily seen at that distance, and some of our engineers claim that a switch disk can be more easily detected by it at night than in the daytime. These lights do away with switch lights, which is quite a saving to roads that use them to any great extent.

"Railroads such as ours, running through the pine lands of the South, kill a great many cows. During our rainy season the lands along the line of road become very wet; in places they are entirely covered with water, and the cattle come down upon track seeking some dry spot on which to sleep. We have killed, when we used the old headlight, as many as 13 at one time, and our claims for stock killed per month have sometimes amounted to over \$1000. The engines using the electric headlight have never killed a cow, and I am confident that the saving in stock claims alone will more than pay for the lights within the next two years."

Electricity of the Skin.

In his last published work Professor Yarchanoff, of St. Petersburg, gives the results of his researches with the electric currents of the skin. As stated, these experiments led him to connect the skin of various parts of the body by means of non-polarizable clay electrodes with Meissner's galvanometer, and at such times the various stimuli of the skin—such as light tickling with a brush, heat, cold, a needle prick, sound, light, taste and smell—were noticed, and in all these cases a strong deflection of the galvanometer needle was observed. Merely opening the eyes, after they had been closed for some time, produced a considerable deflection; and mental efforts, like calculation, also had a similar effect. These currents, if they exist, it is remarked, must pass off with the moistened deposits which are being constantly expelled and a new supply of electricity would have to be found somewhere; and such electricity, says Prof. Yarchanoff, having its source perhaps in the decomposition of metals, taken in the food we eat and the air we breathe, must of necessity entail upon the organism a continuous strain in its production, it being from such causes, perhaps, that the body becomes fatigued after a comparatively few hours of exertion, and absolute rest becomes necessary for recuperation.

RUDY'S PILE SUPPOSITORY is guaranteed to cure Piles and Constipation, or money refunded. 50 cents per box. Send stamp for circular and Free Sample to MARTIN RUDY, Lancaster, Pa. For sale by all first-class druggists.

—Mason county, Wash., cut more than one-third of the logs put into Puget Sound or its tributaries in 1893. The total product of the country was 101,920,770 feet, valued at \$560,564.

A Recent Report on the "Grip."

It is about four years since the epidemic influenza began its ravages in this country, having been originally imported from Europe; and, having become domiciled, it has now entered upon its fifth season of mischief in the United States, although, fortunately, not with the same severity that has characterized its previous prevalence, says the *New York Tribune*.

An official report on this malady by medical officials connected with the Local Government Board of Great Britain has recently made its appearance. Therein the existence of an influenza bacillus is reaffirmed. Dr. Klein says that this microbe "is always abundantly present in the bronchial secretions of patients," and "diminish in number as the disease is abated." The germs are disseminated, according to Dr. Parsons, by bringing the affected and healthy together, as in public vehicles and places of meeting, and especially by the poison being present in confined and vitiated air. Dr. Caldwell Smith says: "An individual is affected by breathing at once the expired air from a person suffering from the disease, and I believe this to be the only method of infection." Numerous stories are told to show how the malady is carried from place to place. A music teacher visited two relatives who were victims of it, and three days later was himself attacked. However, he made a round of his pupils before succumbing, and two days afterward ten of them also developed the disease. The ordinary intercourse of a household or business office, letters written and sealed by sufferers, finger account books whose leaves have been turned with moistened finger-tips by affected persons, and riding in close and crowded railway cars, are among the most common methods of propagation.

Isolation of patients, disinfection of rooms, and ample ventilation are strongly urged as preventive measures. At Brighton, the inmates of the borough sanatorium were protected effectually by such precautions as these for two successive seasons, and during a third season the only case was that of a servant returning from a distant place where the disease was prevalent. When she fell ill she was promptly isolated, and thus no one else was affected.

The Earth's Motion Made Visible.

In the December issue of *Popular Astronomy*, Eliza A. Bowen shows how the earth's revolution may be made manifest to the eye. Dr. L. Smith, in *Popular Astronomy*, says: Place on the floor of a room free from tremors and air currents a good-sized bowl nearly filled with water, and sprinkle over the surface of the water an even coat of lycopodium powder, and across this make a narrow black line of pulverized charcoal. Place the bowl so that the black line shall coincide with a crack in the floor; or, if the room be carpeted, lay a stick upon the floor exactly parallel with the mark. After a few hours it will be found that the line is no longer parallel with the stationary object, but has moved from east to west, proving that during this interval the earth has moved from west to east.

The reason appears to me to be that the solid floor has, with the earth and bowl, moved from west to east, and so has the water also, but at a slower rate, as there is a slight inertia, of which the yielding liquid does not instantly partake, to be overcome. It will be seen that the line or charcoal mark always moved from east to west.

An Attractive Offer.

Readers of the *PACIFIC RURAL PRESS* need not be told of the high character and general value of the *Cosmopolitan Magazine*. It is a splendid monthly publication, a marvel of beauty and excellence.

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—The committee having charge of the unemployed at Riverside has decided to reduce the pay of married men from \$1.25 to \$1.

\$500,000

TO LOAN IN ANY AMOUNT AT THE VERY LOWEST MARKET rate of interest on approved security in Farming Lands. A. SCHULLER, Room 11, 508 Montgomery St., San Francisco (Pacific Mutual Life Insurance Building).

Hay Pressing.

If you are interested in pressing hay write Truman Hooker & Co., San Francisco. They will save you money.

—A Fairhaven, Wash., man shipped 1000 pounds of smelt by express to Dakota and Montana points last week.

—The Southern Pacific has notified the Santa Fe that it will refuse to interchange passenger business via Los Angeles after February 23. Trouble will probably result.

—Spokane, Wash., is elated over the prospect that the Great Northern Railroad Company will build a large steel bridge over the Spokane river, near that city.

—San Diego talks of a new \$1,000,000 hotel.

You Dye in 30 minutes

Turkey red on cotton that won't freeze, boil or wash out. No other will do it. Package to color 2 lbs., by mail, 10 cts.; 5, any color—for agent or cotton, 40c. Big pay Agents. Write quick. Mention this paper. FRENCH DYE CO. Vassar, Mich.

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On Myrabalan Plum Roots.

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Cherries, Peaches, Apricots, Apple, Almond
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Surplus Stock of

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6

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Making an Ax.

On entering the main workshop, the first step in the operation which is seen is the formation of the ax-head without the blade, says an exchange. The glowing flat iron bars are withdrawn from the furnace and are taken to a powerful and somewhat complicated machine which performs upon them four distinct operations, shaping the metal to form the upper and lower part of the ax then the eye, and finally doubling the piece over so that the whole can be welded together. Next the iron is put in a powerful natural-gas furnace and heated to a white heat. Taken out, it goes under a tilt-hammer and is welded in a second. This done, one blow from the "drop" and the poll of the ax is completed and firmly welded. Two crews of men are doing this class of work and each crew can make 1500 axes per day.

When the ax leaves the drop there is some superfluous metal still adhering to the edges and forming what is technically known as a "fin." To get rid of the fin the ax is again heated in a furnace and then taken in hand by a sawyer, who trims the ends and edges. The operator has a glass in front of him to protect his eyes from the sparks which fly off by hundreds as the hot metal is pressed against the rapidly revolving saw. The iron part of the axe is now complete. The steel for the blade, after being heated, is cut by machinery and shaped. It is then ready for the welding department. A groove is cut into the edge of the iron, the steel of the blade inserted, and the whole firmly welded by machine hammers. Next comes the operation of tempering. The steel portion of the ax is heated by being inserted in pots of molten lead, the blade only being immersed. It is then cooled by dipping in water, and goes to the hands of the inspector. An ax is subject to rigid tests before it is pronounced perfect. The steel must be of the required temper, the weight of all axes of the same size must be uniform, all must be ground alike, and in various other ways conform to an established standard. The inspector who tests the quality of the steel does so by hammering the blade and striking the edge to ascertain whether it be too brittle or not. An ax that breaks during the tests is thrown aside to be made over.

Before the material of the ax is in the proper shape it has been heated five times, including the tempering process, and the ax, when completed has passed through the hands of about 40 workmen, each of whom has done something toward perfecting it. After passing inspection the axes go to the grinding department, and from that to the polishers, who finish them upon emery wheels.

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In a paper read before the Western Society of Engineers, Captain W. H. Jaques says: "The wire-wrapped type had the honor of firing the 'Jubilee Rounds' in the Queen's Jubilee year, and gave wonderful results. On April 16, 1888, was fired at Shoeburyness the first of a series of rounds intended to investigate the conditions attending firing at very long ranges. The gun selected was a 9 1/2 gun, made under the direction of General Maitland in the Royal Gun Factories. The weight of the gun was 22 tons, that of the projectile 380 pounds, which, fired with a charge of 270 pounds, gave a muzzle velocity of 2360 foot seconds. The elevation of the first round was 40°. The projectile fell at a range of about 21,000 yards, or nearly 12 miles. On July 12, at 43° elevation, a range of 21,600 yards was attained, and on July 26, with 45° elevation, the range was 21,600, or about 12 1/4 miles. The projectile remained in the air about 69 1/2 seconds, and its trajectory reached a height of 17,000 feet, or about 2000 feet higher than the summit of Mount Blanc."

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FRANK J. CHENEY.

Sworn to before me and subscribed in my presence, this 6th day of December, A. D., 1893.

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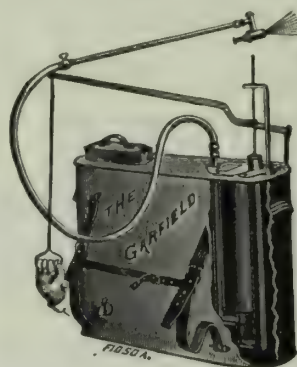
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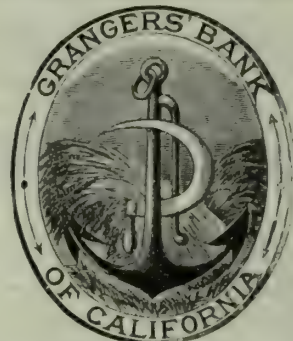
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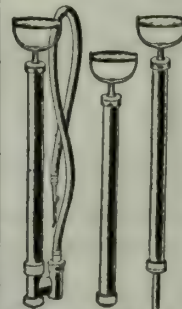
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S. F. MARKET REPORT

Market Review.

SAN FRANCISCO, Feb. 7, 1894.

It is the same old story in the local wheat market. The situation could hardly be worse. To-day No. 1 shipping wheat is not quotable over 96½¢ ctt, with many dealers expecting sales to be made at 95¢ before bottom is reached. A choice parcel would likely find sale at 97½¢@98½¢. Milling grades show ease in price at a range of \$1.02½@1.05¢ ctt. Trading in the Call Board is quite active, there being liberal transactions, all on the down grade as regards price.

Barley.

The arrival of over 8,000 centials of barley from Oregon this week was the cause of some speculation and uneasiness, as it was not known whether the shipment was the forerunner of other consignments or not. But it is understood that barley goes aboard ship for England, and will therefore have no influence on the local market. Trade is not of active character, but prices show fair steadiness, because there is no selling pressure. Feed, 72½¢ to 73½¢ per ctt for fair to good quality, 75¢ to 76½¢ for choice bright; Brewing, 80¢ to 90¢ per ctt.

Dried Fruits.

Advices from the Eastern markets report more inquiry for prunes. Stocks are, as usual at this time of year, declining somewhat, and dealers are looking about to replenish. There is as yet, however, no look of better prices. In the local market, supplies of apples and apricots are light, with prices favoring sellers. Peaches have met with more attention during the week, while there has developed some inquiry for other descriptions. We quote prices as follows: Apples, 5¢ @ 5½¢ per lb for quartered, 5¢ @ 5½¢ for sliced, and 8¢ @ 9¢ for evaporated; Pears, 4¢ @ 8¢ per lb for bleached halves, and 4¢ @ 5¢ for quarters; bleached Peaches, 6¢ @ 7½¢; sun-dried peaches, 4¢ @ 5¢; Apricots, Moorpark, 11¢ @ 13¢; do Royals, 10¢ @ 11¢ for bleached & 6¢ @ 7½¢ for sun-dried; Prunes, 4¢ @ 4½¢ per lb for the four sizes, and 2½¢ @ 4¢ for ungraded; Plums, 5¢ @ 5½¢ for pitted and 1½¢ to 2¢ for unpitted; Figs, 3¢ to 4¢ for pressed and 1½¢ to 2¢ for unpressed; White Nectarines, 6¢ to 7¢; Red Nectarines, 5¢ to 6¢ per lb.

RAISINS—Low asking prices do not seem to encourage trade. Offerings are liberal. We quote: London Layers, \$1 to \$1.20; loose Muscates, in boxes, 65¢ @ 85¢; clusters, \$1.50 to \$1.75; loose Muscates, in sacks, 2½¢ to 2¾¢ per pound for 3 crown; 2 to 2½¢ for 2 crown; Dried Grapes, 1 to 1½¢ per pound.

General Produce Market.

OATS—Offerings do not move off as freely as sellers would desire, and asking prices have been lowered as an inducement for more liberal purchasing. We quote as follows: Milling, \$1.12½ @ 1.20; Surprise, \$1.20 @ 1.30; fancy feed, \$1.17½ @ 1.20; good to choice, \$1.10 @ 1.15; poor to fair, 90¢ @ \$1.05; Black, 82½¢ @ \$1.20; Gray, \$1.02½ @ 1.12½¢ ctt.

CORN—Dull and unchanged. Quotable at 80¢ @ 83½¢ ctt for large Yellow, 87½¢ @ 90¢ for small Yellow, and 90¢ @ 92½¢ for White.

CRACKED CORN—Quotable at \$20.50 @ 21.50 per ton.

CORNMEAL—Millers quote feed at \$20 to \$21 per ton; fine kinds for the table, in large and small packages, 2½¢ @ 3½¢ per pound.

OILCAKE MEAL—Quotable at \$37.50 per ton from the mill.

SEEDS—We quote. Mustard, brown, \$2.75 @ 3; Yellow, \$3.25 @ 3.50; Canary, imported, \$4 @ 4.25; do, California, —; Hemp, 3½¢ per lb; Rape, 1½¢ @ 2½¢; Timothy, 6½¢ per lb; Alfalfa, 7¢ per lb for California and 9¢ for Utah; Flax, \$2.25 @ 2.50 per ctt.

CHOPPED FEED—Quotable at \$17.50 @ 18.50 per ton.

MIDDLINGS—Quotable at \$18 @ 20 per ton.

MILLSTUFFS—We quote: Rye Flour, 3½¢; Rye Meal, 3¢; Graham Flour, 3¢; Oatmeal, 4½¢; Oat Groats, 5¢; Cracked Wheat, 3½¢; Buckwheat Flour, 5¢ @ 5½¢; Pearl Barley, 4¢ @ 4½¢ per lb; Normal Nutrient, \$3 per case of 1 dozen cans; Breakfast Delight, \$3.25 per case of 2 dozen packages.

BRAN—Quotable at \$16 @ 17 per ton.

HAY—Fair movement at steady prices. Wire-bound hay sells at \$1 per ton less than rope-bound hay. Following are wholesale city prices for rope-bound hay: Wheat, \$9½ @ 13½; Wheat and Oat, \$9½ @ 12½; Wild Oat, \$9½ @ 11½; Alfalfa, \$8 @ 10; Barley, \$9 @ 10½; Compressed, \$10 @ 12; Stock, \$8 @ 10 per ton.

STRAW—Quotable at 55¢ @ 65¢ per bale.

HOPS—Nothing doing, with poor prospects of any immediate change for the better. Quotable at 15¢ @ 18¢ per lb.

RYE—Is dull and weak. Quotable at 90¢ @ 92½¢ ctt.

BUCKWHEAT—Quotable at \$1.20 @ \$1.30 per ctt.

GROUND BARLEY—Quotable at \$16.50 @ 17.50 per ton.

POTATOES—The volume of business is good, but supplies are large and quotations keep easy. We quote: New Potatoes, 2¢ @ 2½¢ per lb; Sweets, 75¢ @ \$1 per ctt; Gravel, Chile, 45¢ @ 55¢; Early Rose, 40¢ @ 50¢; River Burbanks, 30¢ @ 40¢; River Red, 30¢ @ 40¢; Salinas Burbanks, 65¢ @ 85¢ per ctt.

ONIONS—First-class produce continues to advance. Quotable at \$1 @ 1.65 per ctt.

DRIED PEAS—We quote: Green, \$1.40 @ 1.60; Blackeye, \$1.60 @ 1.70; Niles, \$1.50 @ 1.75 per ctt.

BEANS—Choice White and Pea show a small advance. We quote: Bayos, \$1.90 @ 2.05; Butter, \$1.75 @ 1.90 for small and \$2 @ 2.25 for large; Pink, \$1.60 @ 1.75; Red, \$1.75 @ 2.05; Lima, \$1.90 @ 2.10; Pea, \$2.25 @ 2.50; Small White, \$2 @ 2.25; Large White, \$2 @ 2.20 per ctt.

VEGETABLES—There is nothing of special interest in the situation. Receipts continue light. Some left-over Tomatoes and a little Rhubarb embrace the balance of offerings, as stocks of Green Peas and String Beans are cleaned up. We quote as follows: Asparagus, 10¢ @ 25¢ per lb; Mushrooms, 4¢ @ 8¢ per lb for common and 10¢ @ 15¢ per lb for good to choice; Rhubarb, 6¢ @ 8¢ per lb; Green Peas, 4¢ @ 7¢; String Beans, 15¢ @ 25¢; Marrowfat Squash, \$8 @ \$10 per ton; Green Peppers,

15¢ @ 20¢ per lb; Tomatoes, \$1 @ \$1.50 per box; Turnips, 75¢ per ctt; Beets, 75¢ @ \$1 per sack; Parsnips, \$1.25 per ctt; Carrots, 40¢ @ 50¢; Cabbage, 50¢ @ 55¢; Garlic, 1½¢ @ 3¢ per lb; Cauliflower, 60¢ @ 70¢ per dozen; Dry Peppers, 5¢ @ 7¢ per lb; Dry Okra, 15¢ per lb.

FRESH FRUIT—There is improving demand for Apples, the supply of which is large, so that custom is promptly satisfied. We quote prices as follows: Apples, \$1 @ \$1.25 per box for good to choice, and 35¢ @ 75¢ for common to fair; Choice mountain Apples, \$1.25 @ 1.50¢ per box; Cranberries, Eastern, \$7 @ 8 per bbl.

CITRUS FRUIT—The tri-weekly auction sales of Oranges continue to be a feature. The attendance at these offerings is good, and consignments are all closed out. We quote prices as follows: Seed to choice Navel Oranges, \$1.25 @ 2.00 per box; Seedlings, 75¢ @ \$1.25; Mandarin Oranges, 65¢ @ 90¢ per box; Mexican Limes, 56¢ @ 7¢ per box; Lemons, Sicily, \$4 @ 5; California Lemons, \$1 @ 2 for common and \$2.25 @ 3 for good to choice; Bananas, \$1.50 @ 2.50 per bunch; Hawaiian Pineapples, \$2.50 @ 3; Mexican Pineapples, \$3 @ 4 per dozen.

NUTS—Trade in this line is wholly of jobbing character. We quote: Chestnuts, 6¢ @ 8¢ per lb; Walnuts, 6¢ @ 7¢ for hard shell, 8½¢ @ 9¢ for soft shell and 8½¢ @ 9¢ for paper shell; Chile Walnuts 8¢ @ 9¢; California Almonds, 10¢ @ 11¢ for soft shell, 6¢ @ 7¢ for hard shell and 11½¢ @ 12½¢ for paper shell; Peanuts, 3¢ @ 4¢; Hickory Nuts, 5¢ @ 6¢; Filberts, 10¢ @ 10½¢; Pecan, 8¢ @ 9¢ for rough and 11¢ for polished; Brazil Nuts, 10¢ @ 11½¢; Cocoanuts, \$4 @ 5 per 100.

HONEY—No active movement in progress. We quote: Comb, 10½¢ @ 11½¢ per lb for bright, and 8¢ @ 10¢ for dark to light amber; extracted, 4½¢ @ 5¢; dark, 4½¢ @ 4¾¢; water white, extracted, 5¢ @ 5½¢ per lb.

BEESWAX—Quotable at 22¢ @ 23¢ per lb.

BUTTER—Prices show firmer tone, as supplies are coming forward with less freedom, especially of the finer grades. We quote: Fancy Creamery 28¢ @ 29¢; fancy dairy, 25¢ @ 27¢; good to choice, 21¢ @ 24¢; common grades, 17¢ @ 20¢ per lb; store lots, 11¢ @ 15¢; pickled roll, 14¢ @ 18¢; firkin, 14¢ @ 17¢.

CHEESE—The market shows steadiness in price, as receipts are of moderate proportions. We quote: Choice fancy to new, 12¢ @ 13¢; fair to good, 9¢ @ 11¢; Eastern, ordinary to fine, 11¢ @ 14¢ per lb.

EGGS—Quotations have been declining about every day for the past week, and it is doubtful if the downward tendency has yet been checked. Increased consumption is probable during the Lenten season, commencing to-day, but stocks are so large that this extra demand is not expected to cause any improvement in values. We quote: California ranch, 20¢ @ 22¢; store lots, 16¢ @ 18¢; Eastern Eggs, cold storage, 10¢ @ 15¢ per dozen.

POULTRY—Supplies are not quite so heavy as they were a week ago, but still there is more than enough to meet immediate demands, and prices therefore continue easy. We quote: Live Turkeys—Gobblers, 11¢ @ 12¢ per lb; Hens, 11¢ @ 12¢; dressed Turkeys, 12½¢ @ 16¢; Roosters, \$3.50 @ 4 for old and \$3.50 @ 5 for young; Fryers, \$4 @ 4.50; Broilers, \$3 @ 4; Hens, \$4 @ 5.50; Ducks, \$4.50 @ 5.50; Geese, \$1.50 @ 1.75 per pair; Pigeons, \$1 @ 1.25 per doz for old and \$1.25 @ 1.50 for young.

GAME—Is going out of favor, and sales are slower in consequence. We quote: Quail, \$1 @ 1.25 per dozen; Canvasbacks, \$4 @ 6; Mallard, \$3 @ 4; Widgeon, \$1; Teal, \$1 @ 1.25; Sprig, \$1.25 @ 1.50; Small Ducks, 75¢ @ \$1; Gray Geese, \$1.75 @ 2; White Geese, 75¢; Brant, \$1; English Snipe, \$1.75 @ 2 per doz.; Common Snipe, 75¢ @ \$1 per doz; Horkers, \$3 @ 3.50; Hare, \$1 @ 1.25; Rabbits, \$1 @ 1.50 per doz.

HIDES AND SKINS—Quotable as follows:

	Sound.	Culls.
Heavy Steers, 57 lbs up, lb.	5¢ @ 6¢	4¢ @ 5¢
Medium Steers, 48 to 56 lbs.	4¢ @ 5¢	3½¢ @ 4¢
Light, 42 to 47 lbs.	3¢ @ 4¢	2½¢ @ 3¢
Cows, over 50 lbs.	3¢ @ 4¢	2½¢ @ 3¢
Light Cows, 30 to 50 lbs.	3¢ @ 4¢	2½¢ @ 3¢
Stags, 100 to 150 lbs.	2½¢ @ 3¢	2¢ @ 3¢
Kips, 17 to 30 lbs.	2¢ @ 3¢	1½¢ @ 2¢
Veal Skins, 10 to 17 lbs.	5¢ @ 6¢	4¢ @ 5¢
Calf Skins, 5 to 10 lbs.	7¢ @ 8¢	6¢ @ 7¢
Dry Hides, usual selection, 7c;		
7c; Calf Skins do, 7c; Cull Hides, Kip and Calf, 4c; Pelts, Shearling, 10¢ @ 20¢ each; do, short, 25¢ @ 35¢ each; do, medium, 40¢ @ 50¢ each; do, long wool, 50¢ @ 75¢ each; Deer Skins, summer, 25¢; do, good medium, 15¢; do, winter, 5¢ per lb; Goat Skins, 25¢ @ 40¢ apiece for prime to perfect, 10¢ @ 20¢ for damaged, and 5¢ @ 10¢ each for Kids.		

TALLOW—We quote: Refined, 5½¢; rendered, 4½¢ @ 4¾¢; country Tallow, 4¢ @ 4¾¢; Grease, 3¢ @ 3½¢ per lb.

PROVISIONS—No changes. Moderate trade is reported. We quote as follows: Eastern hams, 12½¢ @ 13¢ per lb; California hams, 12¢; Bacon, Eastern, extra light, 15¢ @ 16¢; medium, 11¢ @ 11½¢; do, light, 12¢; do, light, clear, 13¢ @ 13½¢; light, medium, boneless, 12½¢; Pork, prime mess, \$14 @ 15; do, mess, \$18 @ 19; do, clear, \$21; do, family, \$24 per bbl; Pigs' Feet, \$12.50 per bbl; Beef, mess, bbls, \$7.50 @ 8; do extra mess, bbls, \$8.50 @ 9; do, family, \$9.50 @ 10; extra do, \$11 @ 11.50 per bbl; do, smoked, 10¢ @ 10½¢; Eastern lard, tierces, 8¢ @ 8½¢; do prime steam, 10½¢; Eastern pure, 10-lb pails, 11½¢; 5-lb pails 11½¢; 3 lb,

11½¢; California, 10-lb tins, 10½¢; do, 5-lb, 11¢; do, kegs, 11½¢ @ 12¢; do, 20-lb buckets, 11¢; compound, 8¢ for tierces and 8½¢ for bbls.

WOOL—Quotations mors or less nominal. No business of consequence doing. We quote spring: California, year's fleece, 7¢ @ 8¢; do 6 to 8 months, 7¢ @ 9¢; do Footbill, 10¢ @ 11¢; do Northern, 12¢ @ 13¢; do extra Humboldt and Mendocino, 11¢ @ 13¢; Nevada, choice and light, 12¢ @ 14¢; do heavy, 8¢ @ 10¢; Oregon, Eastern, choice, 10¢ @ 11¢; do Eastern, poor, 7¢ @ 9¢; do Valley, 12¢ @ 14¢. We quote fall: Free Mountain, 6¢ @ 9¢; Northern defective, 5¢ @ 8¢; Southern and San Joaquin, 3¢ @ 5¢.

San Francisco Meat Market.

Spring Lamb is making better display. Following are the rates for whole carcasses from slaughterers to dealers:

BEEF—First quality, 5½¢ @ 6¢; second quality, 4½¢ @ 5¢; third quality, 3½¢ @ 4¢ per lb.

CALVES—Quotable at 4¢ @ 5¢ for large, and 6¢ @ 7¢ per lb for small.

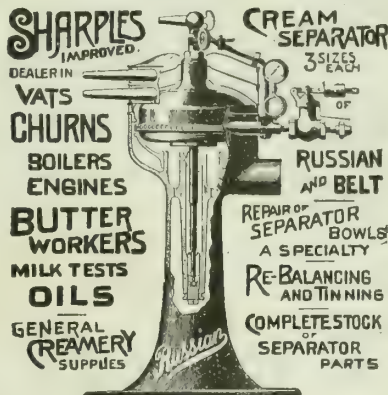
MUTTON—Quotable at 6¢ @ 7¢ per lb.

LAMB—Spring, 12½¢ per lb.

PORK—Live Hogs, on foot, grain fed, heavy and medium, 5¢; small Hogs, 5½¢ @ 5¾¢; stock Hogs, 4½¢ @ 4¾¢; dressed Hogs, 7¢ @ 7½¢ per lb.

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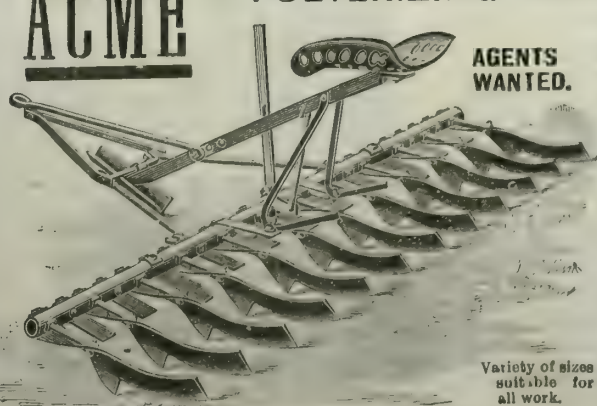
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Lecturer's Notes.

(Continued from page 112.)

I have spoken of money of redemption. That implies the existence of "credit money." Such is the fact. It consists principally of "greenbacks" and national bank notes. This paper is made redeemable in gold.

There are grave doubts as to the necessity or expediency of this arrangement. This brings me to the remaining portion of our February topic: *The duty of Government to provide an ample legal tender medium of exchange.*

Of course, we want none but good money. What is "good" money? Money that will discharge all financial obligations; money that no one can refuse, not even the Government. At present gold only possesses that character. Up to 1873 silver possessed it in equal degree, but was then robbed of it by Congressional enactment. It is instantly perceived that it is the full legal tender character of money which makes it good money. This is imparted by Government. At present gold only is endowed with it. It could bestow the same character upon silver with equal facility, and did so for more than 70 years. It could even bestow it upon its issues of paper. It may not be generally known that it did so in one instance.

In 1861, when war's dread alarms affrighted the nation, and when money, the "sinews of war," became a supreme desideratum, the enactment of July 17th was adopted, supplemented by that of Feb. 12, 1862, authorizing the issue of \$60,000,000 of treasury notes, without interest, and legal tender for all debts, public and private. They contained no "exception clause," and consequently were always at par with gold, and could do whatever gold could do. This issue never suffered the slightest depreciation. The shynocks of the country took instant alarm. They knew that if Government continued to supply itself with this kind of money there would be no demand for their hoarded gold. So they mustered their forces—more dangerous to the nation than were ever the brave battalions of the South—and took effectual measures to prevent the issue of treasury notes that ignored gold and carried full legal tender character. A Bankers' Convention was called, and Congress was so manipulated that a fatal "exception clause" was inserted in all subsequent issues which robbed them of their full legal tender character; hence when, at a later period, it required \$2.50 of any of the subsequent issues to obtain a dollar in gold, any person who had a dollar of the original issue of \$60,000,000 could always exchange it even for a dollar in gold.

If it is the duty of the Government to provide an ample legal tender medium of exchange, it is a duty which can be easily performed. The above incident assures us of that fact. If the gold and silver coin now in circulation in the United States, amounting to about \$18 per capita, is insufficient as a medium of exchange, let it be supplemented by an issue of full legal tender treasury notes to an equal amount, raising the per capita circulation to \$36, or even to \$50—the per capita circulation of France and of our own country in 1866, 1867 and 1868—its most prosperous period. Is there any doubt that its legal-tender character would make it as good as gold without any redemption specification? So long as it would pay all debts, public and private, what better could be had? And so far from driving coin out of circulation, it would force it into circulation, because there would no longer be any object in hoarding it.

The single point of advantage that coin would have over such an issue has already been mentioned in the opening portion of these notes. Coin would have a value however the nation might be stricken, while its treasury notes might become valueless if it was disrupted or conquered by other nations. But such a contingency is so improbable as not to be regarded in the consideration. It would be a peculiarly pessimistic, crooked and unpatriotic man who would refuse the nation's paper on that score.

Such an issue, on the other hand, if it was considerable, might afford a stimulus to patriotism. The citizen would feel called upon at least to support and defend his country to the full amount of the money in his pocket.

There are still many points untouched that belong to the consideration of our topic, but I find it impossible to embrace them in these notes without transgressing upon the limits of space which I may presume to ask of the RURAL PRESS. S. G., Oakland, Jan. 23d. Lecturer C. S. G.

Installation in March Grange.

The editor is just now in receipt of a letter from District Deputy B. F. Frisbie, dated

January 15th, and which has been side-tracked somewhere between Yuba City and this office for nearly a month. In it Bro. Frisbie reports that himself and wife visited March Grange on the 13th of January, and that he, assisted by Sister Hedges of North Butte, conducted the services of installation. The new officers, Mr. Frisbie writes, are very earnest in the work and he looks forward to a good year in the history of March Grange.

A day or two following the date of his letter, Mr. Frisbie was to visit North Butte Grange and render them a similar service. He is, indeed, one of the faithful ones of the order and always keeps his corner of the grange field well tilled.

Sheep Dip.

"Little's Chemical Fluid Sheep Dip" has been on the market so long, and has such an established reputation for doing all that is claimed for it, that it requires but little commendation here. However, in the face of threatened competition with the cheap wool of other countries, it may be well to remind sheep-raisers of two or three of its claims, which will alike appeal to their good sense and to their pockets; viz., its non-poisonous quality, rendering its use safe and convenient, the increased weight per fleece which it produces, and its extreme cheapness. Testimonials to these qualities are numerous. Send to Catton, Bell & Co., 406 California St., San Francisco, for circulars with full particulars.



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California Agriculture in 1893.

(Continued from page 109.)

125,081 pounds, besides which there was about 7,000,000 pounds of maple and other sugars that failed to come up to the bounty standard. These figures give us a total of 4,236,086,030 pounds of sugar consumed in this country for that year, showing that we import 90 per cent of the sugar we use.

Does not this show a great field for the development of the sugar industry in this State, where we have ample lands that are not used for anything else, and would yield prodigiously in beet culture?

Hon. Richard Gird, a member of this board, entered upon experiment three years ago in the scientific cultivation of the sugar beet upon a 36,000-acre sheep pasture in San Bernardino county, and on the showing made the first year secured the introduction of capital by experienced men to assist in the building and operation of a factory in the midst of the lands set apart for beet culture, and after two years' experience in the manufacture of sugar it is pronounced an unqualified success in both consumption of beets and the production of a marketable article of sugar.

Referring to the season just closed, and the prospects ahead for the enterprise, it can best be told in Mr. Gird's own words, which we here quote:

"In the season of 1893 nearly 52,000 tons of beets were delivered at the Chino Valley Beet Sugar Factory, and were converted into 15,100,000 pounds of sugar. The average tonnage per acre was 17, and the average sugar percentage was 15. The Chino Valley Beet Sugar Company, upon the successful showing of 1892 and the improved prospects of 1893, increased the capacity of their factory from 330 to 600 tons of beets per day, and for 1894 intend to increase the capacity to 800 tons of beets per day, and which may be considered as ample proof of the success of the enterprise. This season myself and 170 farmers cultivated over 4000 acres of sugar beets, 2500 acres of which was in good condition, and the remaining 1500 acres sod land broken up for the first time, and from the latter the tonnage was necessarily light. There were distributed during the last campaign some \$350,000 for beets and labor, which would otherwise have gone out of the country to purchase foreign sugar. Upon this tract of 20,000 acres, which a little more than three years ago was an open cattle range, are located 170 industrious and intelligent farmers with their families; 395 of their children attend the common schools that have been established here. (We are just about to commence the erection of a \$10,000 school-house.) Three churches have been built, and a community organized and started out under such favorable auspices of such profitable industrial agricultural employment as to have an assured future."

And in addition to which he writes: "The establishment of a beet-sugar factory in a community means the placing of a cash market at fixed prices for the farmers' produce at their own doors; it enhances the value of the land at least threefold, by giving it an income-paying value; it means the distribution in the community of so many hundreds of thousands of dollars, and profitable and healthy employment for hundreds of families, besides the saving to the country of the value of the sugar, which would otherwise have gone abroad into the pockets of foreigners."

GOOD ROADS.

Following up the suggestion made in our last report upon good roads, we would say that the subject should not be permitted to lie dormant; that the farming community in every county in the State should continue to urge the building of a permanent roadway from all parts of their county to the county seat, to be followed by improvements of cross and branch roads, that all points of interest could be reached at any season of the year, thereby enabling the producer to market his products at will.

It is to be hoped that at the next session of the Legislature a general system of permanent road building will be made a law, and the old plan of road making be retired forever. What we want is rock-built highways that will last through this generation of people, and let them be made at such times of the year when demands for labor in other avenues is light, thereby accomplishing much good for both the land-owner and laborer.

Idaho has begun right; she has a State Wagon Road Commission that is perfecting her roadways, and we note with great satisfaction that the Commission is doing admirable work in the construction of permanent rock-built roads. A contract recently let in that young State provides for the building of a perfect roadway, forming a main trunk

line connecting the northern and southern sections of that State. They are starting properly, and the example there set could be followed with benefit by this State.

OTHER AGRICULTURAL ITEMS.

California's future depends wholly upon her soil production, and every encouragement should be given in promoting an increase of ratio. To this end diversified agriculture is most essential, and as we have both soil and climate for the successful culture of all kinds of products, we only lack soil-workers in sufficient quantity to utilize the immense acreage available.

Some may say the land is not available by reason of large holdings that now exist. But we are assured through experience of those who have sold large tracts of land by cutting it up in subdivisions that other holders of similar tracts are about ready to follow the example and dispose of their land in the same manner. These sales are made to actual settlers upon a basis that insures improvement. Some such sales have required a small proportion of the purchase price down and the remainder at intervals agreed upon to extend from five to six years, while others have been made without any payment except the first year's interest to parties giving satisfactory assurances of their intention of improving the land thus purchased and payment therefore guaranteed, by mortgage, from the earnings of the land. By this system much land has been disposed of at fair prices to both seller and buyer, and the State is steadily gaining thereby a productive population.

The fruit interest has probably progressed more by this plan than other interests, although some advancement in our dairy business has resulted under same conditions. But we have made a beginning toward a successful accomplishment of cutting up the large tracts of land for sale; the success of one sale encourages others, and the result will be in a few years just what the State needs, a population of producers.

There are yet ample opportunities for the advancement of other agricultural interests under same conditions, and we can assure those who are seeking the vocation that they can obtain the necessary land in this State upon long and easy payments.

We again call attention to the necessity of agricultural education by the use of textbooks in our public schools giving the rudiments of soil culture for the benefit of our successors in life. We believe this branch of study as essential to the students of this State as are our form of civil government or the geographical knowledge of the country.

The student can be better prepared in the art of agriculture by early study than in most any other branch of learning, that is, it will be more retentive by reason of the surroundings, should the student desire to follow it in after life, than would the first principle of any other study that might have been taken up at the same time. Facilities should certainly be given for the study of an art that is the chief resource of a State. Other professions are over crowded, so why not encourage advancement in an occupation so susceptible of extension as agriculture? It is needed, probably, more in this State than in others, and it is to be hoped the day is not far distant when it will be given equal advantages with other arts and sciences in the common schools of the State.

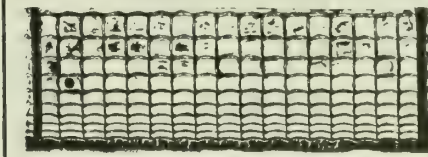
THE FAIRS.

The balance of the society's report relates to the citrus fruit fairs and State fairs held under its auspices. It is shown that the receipts at the last State fair ran behind its expenses \$5435. The report continues: Our losses clearly come from non-attendance, and not from undue extravagance. We early foresaw that retrenchment was necessary and we made marked reductions in all expenses, but, as the result shows, the falling off was greater than we provided for, and in consequence our indebtedness has been increased instead of diminished—the first time for many years the balance for a particular season appearing on the wrong side.

For many years our indebtedness, which was incurred firstly by necessary permanent improvement, has been carried upon the personal credit of the directors of this board, many of whom have devoted years of their time to the welfare of the institution and the interest it represents. Our hope is that at the next session of the Legislature the members thereof will recognize the necessity of providing sufficient funds to meet the expenses of an institution that so directly benefits the agricultural interests of the State as does this society. We have heretofore devoted almost the entire appropriation to premiums, thereby returning the money given us as aid to the people directly after having used it in encouraging the resources of the State, preferring to have the earnings

of the institution meet the necessary expenses.

As the law prohibits the use of money appropriated in the general appropriation bill for permanent improvements, we were forced to meet this expenditure likewise from our earnings, which have been insufficient for both expenses and improvements; hence our large debt of to-day. We are thus prevented from making many additional improvements to the State's property now needed. If funds were provided for this item of expense, we are confident, with proper management, that our entire indebtedness can be wiped out during the next two years. The net indebtedness February 1, 1894, was \$19,470 27.



Wire Fence Wanted.

In spite of a capacity that will soon reach 30 miles every 24 hours, we expect to run short of fence next spring. Rather than disappoint customers, we might supply some other make if up to our standard. Any one having a fence that will stand our test is invited to submit sample. Will explain test next week.

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(Successors to THOMSON & EVANS.)

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For particulars apply

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ALL WARRANTED CLEAN, TRUE TO NAME AND RAISED WITHOUT IRRIGATION.

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Seeds, Plants, Etc.

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W. W. WILL, Proprietor.

I have the following surplus stock to offer at the prices quoted:

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Foster Peach.....	3000	4 to 6	8 cts.
Early Crawford Peach.....	6000	4 to 6	8 cts.
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Muir Peach.....	1000	2 to 4	6 cts.
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French Prune on Myrobalan.....	5000	4 to 6	6 cts.
Apple.....	2000	4 to 6	6 cts.
Cherry.....	2000	4 to 6	8 cts.
Apricot.....	1000	4 to 6	8 cts.
Almond.....	2000	4 to 6	8 cts.
Sweet Seedling Orange.....	5000	3 to 5	20 cts.
Picholine Olive.....	1000	3 to 5	8 cts.
Ficogranate.....	1000	2 to 4	8 cts.

All trees warranted to be free from root knot and scale of every kind. Correspondence solicited.

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HAS A CHOICE STOCK OF

Royal Blenheim and French APRICOTS,
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FRENCH PRUNES, TRAGEDY PRUNES,
PEACHES, APPLES and PEARS
In Variety,

No. 1 Yearling Trees, also June Bud Trees
at Bedrock Prices.

For Particulars Address

JAMES A. ANDERSON,
Lodi, San Joaquin County, Cal.

IS IT POSSIBLE TO PLANT ANY FRUIT
that will yield a greater profit than the

GENUINE Tragedy Prune.

We noticed they roll in New York last June at \$6.50 per half crate, and July 5, 1893, Porter & Co., New York, sold them at \$6 per half crate, while other plums were a 1 1/2 g. at less than half. Even August 7th, when New York had in one week 72 cars C.H.F. in fruit, 300 cars Delaware peaches, 100,000 bunches of bananas and 80,000 boxes Sicily oranges, in fact a regular glut, still the Tragedy Prune from late districts was its 1 1/2 g. above all, sell at \$2.25 per half crate. We challenge anyone to name a variety of fruit that can show such a record during the financial crash of 1893. It originated in our section and we are proud of it. When you buy the GENUINE, which we can furnish at 8 cts. each. SACRAMENTO RIVER NURSERY CO., Walnut Grove, Sacramento, Co., California.

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Grown on high rolling fir land without irrigation or manure. 250,000 Prunes—French, Italian, Silver and Golden. Peaches—E. Crawford, Alexander, Amden, Foster, Muir, Malta, and 20 other kinds, including Early Charlotte, the greatest peach that Nature has yet invented. (Write to us about it.) Plums—Burbank, Satsumas, Ogon, Olyman, Tragedy, Eton, Columbia, and a dozen others. Clark's Early Strawberry. If you want the above in quantity, we will give you the finest trees grown, healthy, true to name and at unprecedentedly low prices. Address PILKINGTON & CO., Portland, Or., or Dr. J. B. Pilkington, Los Angeles, Cal.

FRUIT TREES, ROSES, PALMS

—AND—

ORNAMENTAL PLANTS.

A large and complete stock, grown on new ground, at low prices.

E. GILL,

Twenty-Eighth Street, near San Pablo Ave.,
Depot, Washington St., bet. 12th and 13th,
Oakland, Cal.

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I have a small quantity of ALMOND TREES FOR SALE THIS SEASON. The trees are budded from

MY NEW SEEDLING ALMOND

ON BITTER ALMOND STOCK. Price, Fifty Cents Each, or Five Dollars Per Dozen. Address, J. COPPIN, Loomis, Placer Co., Cal.

MARSHALL STRAWBERRY. Latest Novelty for 1894. Magnificent fruit. Largest and finest ever grown. 14 berries fill a quart. Took First Five Prizes from Mass. Hort. Society, Boston, in 1892, and again in 1893. Deep red, solid, delicious flavor. Flower perfect. \$2.50 per doz. \$15.00 per 100, postpaid. Priced Catalogue of Strawberries and all Decorative Hardy Plants, Shrubs and Trees at low rates, sent free. Large stock. B. M. WATSON, Old Colony Nurseries, PLYMOUTH, MASS.

OLIVE TREES.

Apply for Catalogue.

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I have some 15,000 Lisbon and Eureka Lemon trees, budded from my own bearing orchard, for sale cheap. NATHAN W. BLANCHARD, Santa Paula, Cal.

ROYAL ISABELLA GRAPE CUTTINGS, Rooted, for sale (quoted as Fancy Isabella or Pierce Grape). Sent by mail or express at \$2.25 per dozen.

—Address—
GEO. W. FOOTE, Santa Cruz, Cal.

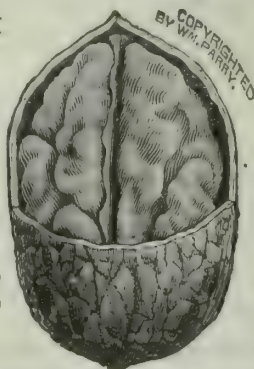
WE GIVE ESPECIAL ATTENTION TO

Fruit Trees! Deciduous Fruit Trees!**ALEXANDER & HAMMON'S**

Rio Bonito Nurseries, Biggs, Butte Co., Cal.

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**PERSIAN**

:- WALNUT! :-

Our Stock of TREES and VINES is Most Complete
in EVERY CLASS of Fruits.

A LARGE STOCK OF THOMPSON'S SEEDLESS GRAPES.

SHIPPING, CANNING and DRYING Fruits of all Kinds.

Best Assortment of RAISIN and TABLE GRAPES in California.

Early Shipping Plums a Specialty.

SPECIAL PRICES FOR TREES IN LARGE QUANTITIES.

DURING the last three years, trees grown on the FEATHER RIVER BOTTOM LANDS, at RIO BONITO, BUTTE COUNTY, have been much sought after, and the demand for them is increasing all over the State where they have been planted. Owing to the peculiar adaptability of the soil and climate of this section for growing nursery stock, the trees making a very large and well-furnished system of root growth, and maintaining a correspondingly strong and vigorous top, maturing the wood thoroughly, we are enabled to supply our patrons with the best of trees, healthy in every respect, entirely free from insect pests, and in perfect condition for transplanting.

If You Are Going To Plant Trees, It Will Pay You To Correspond With Us Before Purchasing.

ALEXANDER & HAMMON,

BIGGS, BUTTE COUNTY, CALIFORNIA.

Incorporated 1884.

500 Acres.

CALIFORNIA NURSERY COMPANY,

Niles, Alameda Co., California.

FRUIT TREES,
SHADE TREES,
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PALMS AND FLOWERING PLANTS.
SPECIALTIES: OLIVES—38 sorts, French, Italian and Spanish.
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 CLEMATIS—25 Varieties.

SEND FOR CATALOGUES.

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SPECIALTIES—OLIVES, ROSES, PALMS.

SEND FOR CATALOGUE AND PRICE LIST.

GEO. C. ROEDING, Manager.

ALOHA ORANGE NURSERIES,

PENRYN, PLACER COUNTY, CALIFORNIA.

SPECIAL OFFER.—We have a surplus in the following No. 1 Trees, and quote the low price of 8 cents each until same is sold:

300 Simon Plums on Peach Root,	175 Alexander,	100 Salway,
250 Tragedy " " "	400 Hales,	50 McDevitt,
600 Clyman " " "	500 E. Crawford,	100 Geo. Late,
150 Kelsey " " "	100 L. Crawford,	150 Levi Cline,
50 Burbank " " "	300 Foster,	150 I. X. L. Almonds,
50 Satsuma " " "	175 Ausquehanna,	60 Moorpark apricots,
400 Clyman " Almond "	100 Wager,	50 French Apricots.

ORANGE TREES lower than ever. Write to us stating your wants. We grow all our Trees, and they are harder than any others. Prices run from 10 cents to \$5 each.

PLANT MORE PALMS, they give a tropical appearance to any lawn or garden.

ORDER THE COLLECTIONS BELOW, they will be found to be just what you have wanted.

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1 Citrus Tree Collection.—1 Wash. Navel, 1 Med. Sweet, 1 Lisbon Lemon, 1 Tahiti and 1 Trifoliate Orange.
1 Palm Collection.—2 Cal. Fan Palms, 1 Chamaecyparis, 1 Dracena.
1 Chrysanthemum Collection.—25 different varieties.
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GRAPE VINES.
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Our Stock is Free From all Insect Pests and for Health and Strength of Root Growth Cannot be Excelled.

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THE FOLLOWING VALUABLE VARIETIES FOR

\$150 per 1000:

 Razza, Grossaia, Rosalina, Bellmonts, Olivastra, Lecolno,
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Trees two years old, from four to six feet high.

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H. SCHWARZ, 25th & O Sts., Sacramento, Ca
 Large quantity of Fancy Fancies, Strong Plants.
Either of the Following Collections
POST PAID for \$1:
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 door Plants, \$1.
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 FOR \$1.00.

Our Sample Collection of 20 Choice Roses, small plants, well-rooted and each labeled, mailed for \$1.00.

This offer is made to induce you to give us a trial, and it is to our interest to send you only a fine assortment of good, well rooted Roses that are sure to bloom the first year.

Illustrated Catalogue of Seeds, Plants and Fruit Trees, mailed free.

COX SEED AND PLANT CO.,

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WE SEND FREE, BY MAIL, AFTER RECEIPT OF ONE DOLLAR,
ONE OF THE FOLLOWING COLLECTIONS OF PLANTS:

- 12 Roses,
- 15 Carnations,
- 15 Chrysanthemums,
- 15 Fuchsias,
- 15 Geraniums,
- 15 Heliotropes,



- 20 Assorted Summer Flowering Plants,
- 12 Dahlias,
- 12 Coleus,
- 12 Climbing Plants,
- 10 Oleanders,
- 24 Pansies,

DISTINCT VARIETIES. ALL PLANTS LABELED. TRUE TO NAME.

Gallert & Co., Florists,
COLMA, San Mateo Co., Cal.

Send for full list of collections.

Be Sure and Give Us a Trial.

We Grow Only the Best Varieties.

FOR THE SEASON OF 1893-94.
 BUDDED ORANGE TREES, of the leading varieties, one and two-year buds; also a small lot of
 choice budded and seedling LEMON TREES. Sweet Seedling Orange, 1 to 4 years old. Shade and
 Ornamental Plants. Prices to suit the times.
ORCHARD AND NURSERY THERMALITO, BUTTE COUNTY, CAL.
For prices and terms, address
 OROVILLE CITRUS ASSOCIATION, OROVILLE, BUTTE COUNTY, CALIFORNIA.
 Correspondence Solicited.



Vol. XLVII. No. 7.

SAN FRANCISCO, SATURDAY, FEBRUARY 17, 1894.

TWENTY-FOURTH YEAR.
Office, 220 Market Street.

Brains as a Top Dressing for Wheat.

We trust the important and interesting statements on wheat-growing now appearing in our columns will excite a discussion of this leading source of wealth to our State. For so great a crop as our wheat product, it figures shamefully low in current agricultural discussion. Some may think that wheat is so old a theme that there is little to be said about it. This is a great mistake. As shown by an able article on another page of this issue, which we copy from the *Inter-Ocean*, the wheat crop of the country is most closely related to our national comfort and prosperity and much of our future will depend upon the manner in which we handle this king of cereals. Besides, we are glad to note that among Californian wheat-growers there is at present a wider disposition than ever to put more thought into wheat-growing and to make an effort to learn whether we are getting all we should from the wheat field. We do not mean from the wheat market—that is a great economic question, it is true, but are we getting all we can in the way of yield? Is our wheat-growing practice the best possible under our conditions and all that? Or have we dropped into a conventional line of policies and methods with this crop? Are we in a wheat rut, so to speak? Much would seem to indicate that we are, and yet nearly the whole world beside is putting thought into wheat farming as we put it into fruit farming, for instance. The *RURAL* is ambitious to get more thought and intelligence into wheat. Don't let it go as a perfunctory, traditional sort of a thing. Talk about it, think about it, write about it, experiment with it.

We are inclined to believe that this disposition is gaining ground in this State for one reason at least. The State University has grown new cereals and offered the seed of the most prominent new varieties for a number of years. There has been comparatively small demand for trial lots of seed until this year. This year's announcement seems to have made more impression on the wheat-growers and the demand for seed of new kinds has been greater than ever before. The result will be that many wheat-growers in widely distant parts of the State will be watching the growth of wheat more closely and intelligently than they have for years, and this will be a gain even if the new varieties do not prove better than the old.

And this is only one phase of the matter. What can wheat be produced for? What will it cost to double the average yield, and how can it be done? There is perhaps no cleaner, neater and less tiresome business in the whole line of farming than wheat-growing—when it pays well. Isn't it worth while to study it a little to see if it can be made to pay well by more intelligent and progressive policies?

The increased use of our barley last year in Great Britain was one of the interesting facts of the commerce of 1893. From exchanges we learn that English imports of barley were about two and a half times as great as in 1892, or a total of about a million and a half quarters. It seems that Persia and Russia furnished largely the common barley which England imported. There was a total of 77,930 quarters from the United States, of which 71,463 quarters were from California, as against 21,778 quarters in 1892, which completely alters the nature and importance of these receipts. The supply from the Danube is more than double that of 1892, and a large proportion of this has been for malting purposes; while the 17,455 quarters

from Denmark, against 37 quarters in 1892, shows the demand there has been for Continental malting barleys. Even Germany sent but 11,609 quarters, as against 9923 quarters in 1892, which may be taken to mean that, with an acknowledged small crop of choice qualities, she either spared very little or else found a better market than that of London. It would seem that California may have quite a future in brewing barley in Great Britain, but here comes in our stalwart young rival, Argentina, sending her first lot of brewing barley to London in 1893. The *London Agricultural Gazette* well says: "When the enormous increase in the production and exports from that country



B. F. WALTON, OF SUTTER COUNTY.

is taken into consideration—they have advanced by 'leaps and bounds'—the first little lot of barley should not pass unnoticed."

THE Santa Clara Valley Agricultural Society seems to be experiencing a change of heart and desires to turn from the evil of its former way, which has been to make its fairs nearly all race-track. It is stated that the directors, in filling a vacancy, have "endeavored to find a man devoted to horticultural and agricultural interests as well as to horse-racing, the purpose being to inaugurate the old system of holding a fair and not giving over the entire interests of the society to horse-racing. To fill this place the directorate named Philo Hersey." To which we add, that it is a consummation devoutly to be wished.

THE directors of the California Dairy Association held a meeting in this city last week and considered propositions made by owners, to grant the use of land to establish a dairy school. It is stated that two pieces of land are chosen—one near San Rafael, the other near Petaluma.

Mr. B. F. Walton, President of the State Fruit Exchange.

We take pleasure in presenting to the readers of the *RURAL* the portrait of Mr. B. F. Walton, who has been chosen to lead the movement for the direct marketing of California dried fruit in the interest of its producers. Mr. Walton is a practical farmer and fruit-grower, and has, since his arrival in California in Dec., 1859, lived continuously in the neighborhood south of Yuba City, in Sutter county. He began with youth, health and an axe, and now, after thirty-four years, his holding comprises twelve hundred acres of fine land divided between horticulture, dairying on a large scale and grain and hay farming. When Mr. Walton arrived in Sutter county, he found it sparsely settled by a roving, stock-raising population on government land; and he has been closely identified with the transactions which have replaced this condition by what we find in Sutter county to-day, namely, an organized, progressive and prosperous community, strongly united for the promotion and conservation of local interests.

The fame of Sutter county rests chiefly upon the ways in which it has fought for its life against the deluge of debris from the mines in the adjacent mountains; in the union of its people for purpose of high educational and moral consequence, and for the conspicuous success of its co-operative efforts. In all these beneficent movements Mr. Walton has borne a hard-working part; and while he has done much for them, they have in turn done much for him. He is, in his character, business training and bent and habit of mind a product of the exceptional conditions which exist in the region contiguous to Yuba City.

Our faith in the plan of co-operation projected under the State Fruit Exchange rests in large part upon confidence in the capacity and devotion of Mr. Walton. In all his business life he has made a "go" of everything he has undertaken. It was this fact, with his exceptional knowledge of fruit trade conditions both in California and in the East (gained as president of the Sutter Canning & Packing Co., a co-operative concern which markets its own product directly to the trade in Eastern cities), that led to his selection as president of the State Exchange. He will, it is promised, be no figure-head, but will take direct hold of the business of the Exchange and give it the benefit, not only of his experience and industry, but of an inspiring, personal enthusiasm in the cause of co-operation. Mr. Walton is in the 59th year of his age, having been born in Warren county, Pennsylvania, July 18th, 1835.

OUR city and suburban residents complain of flowering plants taken up by the roots by thieves, but we never heard of stealing orchard trees until this week, and the account comes from Stockton. The owner of a young orchard came to town and left his farm in charge of his young son for the day. The boy saw some men digging up fruit trees in the young orchard his father had started and went out to them to inquire what they were at. The men said they had bought all the trees from the owner and were digging them up to take them away. The boy thought, of course, it was as the men said, and that his father had really sold the trees, so he made no protest. This incident should be respectfully dedicated to the members of the State Board of Equalization who are disposed to look upon fruit trees as very stable articles and worthy of heavy taxing.

PACIFIC RURAL PRESS.

Office, 220 Market St.; Elevator, 12 Front St., San Francisco, Cal.

All subscribers paying \$3 in advance will receive 15 months' (one year and 13 weeks) credit. For \$2 in advance, 10 months. For \$1 in advance, five months.

ADVERTISING RATES.

	1 Week.	1 Month.	3 Months.	1 Year.
Per Line (agate)	\$.25	\$.50	\$ 1.20	\$ 4.00
Half inch (1 square)	1.00	2.50	6.50	22.00
One inch	1.50	5.00	13.00	42.00

Large advertisements at favorable rates. Special or reading notices, legal advertisements, notices appearing in extraordinary type, or in particular parts of the paper, at special rates. Four insertions are rated in a month.

Registered at S. F. Post Office as second-class mail matter.

Our latest forms go to press Wednesday evening.

ANY subscriber sending an inquiry on any subject to the RURAL PRESS, with a postage stamp, will receive a reply, either through the columns of the paper or by personal letter. The answer will be given as promptly as practicable.

ALFRED HOLMAN.....Editor
J. F. HALLORAN.....General Manager
E. J. WICKSON.....Special Contributor

San Francisco, February 17, 1894.

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The Week.

Since our last issue rain has fallen in the upper parts of the San Joaquin valley and given the expectant grain growers another installment of confidence in the season. Although in the upper half of the State a good amount of rain has already fallen, at the south more will be needed to ensure crops, though there is enough for present needs and plenty of time for more.

This week the usual winter contrast between the Pacific coast and the rest of the country has been observed. We have had a week of sunny days of quite sufficient warmth for the season, while eastward there has been a blizzard of pronounced type, with all its dire accompaniments of lives lost, travel impeded and loss and suffering everywhere. Reports are that families in the newly settled regions of the interior have been frozen to death in their tents, and that escape from woe has been sought through murder and suicide. It seems too bad in this age of philanthropy and progress that life should be left to such a fate. Fortunate are they who come no nearer to these things than the hearing of them.

It seems from commercial reports that the canned fruit of 1893 has not been moving as freely as was hoped. The claim is that Eastern buyers, who gave orders for much of the fruit, refused to receive and pay for it, though the date of delivery has long since passed, and it is expected that lawsuits will be brought to force the acceptance and payment for such parcels as are still left here undelivered under such contracts. Efforts to place lines of the varieties used in the United Kingdom during the past 60 days have practically failed, and canners, who have made great efforts to that end, are still holding on to their stocks without any encouragement. Altogether the situation is weaker than during the closing months of 1893. It is probable, however, that the past month was the turning point in values, and it is only fair to encourage expectation of realizing at least as good, if not better, net figures in the near future. It will be well for the grower's interest to have this matter well cleared up as soon as possible, and we expect it will be, for there should be no surplus on the reduced pack of last year.

How Much Water is Needed to Make a Crop?

Probably no question has vexed Californians more than this. It is a matter of constant anxiety to the man who farms by rainfall to know how few inches will give him a decent yield, and it is a factor of the utmost importance to the man, or company of men, who has to consider how much desert the available water supply can make into a garden. On the other hand, the individual irrigator is always in doubt whether he is running too much or too little water on his land for the good of his trees or field crops. If we could only tell just how much water is needed for best results it would be a great comfort all around.

But can the question be answered to a nicety? Can we tell of water, as the doctor does of a drug, how much is a tonic, how much more a poison? Possibly we can by sufficient experimentation, and destroy some life to learn what will save the rest, as they say the doctors have done. But it is not so easy to determine the limits of a plant, nor of all plants, nor of all plants in all soils, nor of all plants in all soils in all atmospheres. Evidently the matter is complex.

Our readers who are interested in irrigation will remember that at the irrigation congress in Los Angeles last October, Major Powell of the Geological Survey made a claim in relation to the insufficiency of the water supply of the arid region of America to moisten the soil sufficiently for crop production even with the best system of water conservation and distribution. So great was the flood of indignation on the part of the irrigation promoters that Major Powell was nearly drowned in it. He promised to present the facts and figures upon which he based his claim and his note of warning not to extend irrigation schemes too far. Major Powell is now redeeming this promise and publishing in the *Irrigation Age* an abstract of the conclusions from data gained by government surveys, which he will give in fuller form at some later time in the publications of the survey. We propose to present to our readers these statements of Major Powell, for they apply directly to many affairs which interest Californians as practical irrigators, irrespective of any share they may or may not have in large irrigation schemes and enterprises.

In this issue we give the first subdivision of Major Powell's statement. As the reader will see, it contains an attempt to fix theoretically the requirements of a crop in the matter of moisture. He does not cite the authorities for the claims which he makes as to the physical equivalents involved in plant nutrition; probably in his later treatise he will do this. It seems to us that some of his positions are rather arbitrarily taken, and that there must be something wrong in the experimental data or in the deductions therefrom.

We trust his statement will be carefully read. It will be seen that, taking all sorts of crops into account, the practical duty of water—that is, the amount of water which will carry the plant to maturity and at the same time cover the waste by evaporation from the soil surface and waste by drainage—is 24 inches. We presume it fair to translate Major Powell's terms into simply this: All things considered, it requires 24 inches of rainfall or its equivalent of irrigation to perfect a crop. This conclusion is theoretical and based upon certain tests and experiments with plant growth which are not cited.

There is something very wrong in this theoretical position as to the water requirements of a crop during growth and maturation. This fact can be best shown by reference to the total annual rainfall in various interior localities in California, as shown by the following table, which we compile from the publications of the Weather Office at Sacramento:

RAINFALL AT INTERIOR POINTS IN CALIFORNIA.

	Average.	Greatest.	Least.
Colusa.....	16.99	32.84	9.20
Willows.....	11.66	18.84	6.47
Williams.....	11.71	21.04	3.94
Chico.....	20.06	34.72	12.91
Marysville.....	16.22	26.86	6.65
Woodland.....	15.22	25.32	5.13
Sacramento.....	19.41	36.36	4.71
Antioch.....	9.73	18.36	5.69
Brentwood.....	10.76	16.76	6.77
Stockton.....	13.91	22.04	6.87
Tracy.....	8.84	14.68	2.91
Livermore.....	13.81	22.75	6.01
Modesto.....	8.80	13.64	2.25
Merced.....	11.75	30.83	3.03
Fresno.....	8.79	16.62	4.87
Tulare.....	6.64	11.05	3.07
San Jose.....	13.81	21.17	4.99
Salinas.....	13.24	23.75	3.90
San Fernando.....	15.29	18.91	7.87
Los Angeles.....	16.03	32.16	3.97
San Bernardino.....	16.17	37.51	8.98
Colton.....	9.31	23.36	5.43
Riverside.....	9.87	22.54	2.94
San Diego.....	10.26	25.97	3.71

If we consider this table in the light of Major Powell's crop requirement of 24 inches of rain, we are forced to conclude that nearly all the points named therein are located in a howling wilderness; that 14 of the localities have never (at least within the 54 years of American occupation) had rain enough to make a crop; that the ten localities, which during that period had a maximum of 24

inches or over, have not had one crop to each decade, and in some cases only one in five decades. Now the facts of common record and observation are that the localities indicated have not only produced satisfactory crops, but have never had even as many failures as Major Powell's requirements would credit them successes.

Any one acquainted with California experience or crop records could tell Major Powell that the average rainfall in most of the localities mentioned in the table is fully adequate for field crops of winter growth, and for fruit trees and vines on carefully cultivated ground. The maximum rainfall at all the points in the table came of course in flood years when immense areas were actually submerged, and even valley towns suffered from overflow. Such years, in the Sacramento valley at least, are not the best years, for there is great loss from excessive moisture even where the flood does not actually extend. And yet, even in such years, the rainfall reaches to Major Powell's requirement in only a few instances.

This matter is very suggestive and will commend itself to all readers, who can make their own comparisons and draw their own conclusions. As a matter of fact, in at least three-fourths of the localities named in the table, the average rainfall is sufficient for good field crops and successful fruiting of deciduous trees, and when the residents receive their average rainfall they count themselves fortunate and prosperous. The other one-fourth of the localities look for something above their average to make them comfortable, and either secure it by irrigation or gamble on the chances of getting enough water from the clouds.

It clearly appears, then, that, measured by the experience of Californians, farming by rainfall and under conditions which facilitate evaporation, both from soil and plant surfaces, Major Powell's requirement of water for a successful crop is altogether too high. We would not like to advance an estimate as much below the mark as his is above, but, to be safe, we will say that instead of 24 inches of water, 16 inches, distributed as California rainfall usually is, is quite enough to bring field crops and deciduous fruits to perfection, and meet the wastes of evaporation and drainage. This amounts to a reduction of one-third in Major Powell's requirement. We do not see how this conclusion can be avoided. If it so prove, what effect will it have upon Major Powell's position, that there will not be water enough to irrigate the arid region? We shall see when he gives his figures of the available water supply and the arable area of the arid region.

Victoria Challenges Our Apricots.

The apricot growers at Mildura, Victoria, are delighted over a telegram from London that their dried apricots sold for 15 per cent more than the California dried apricot, and that they secured 10½d. per pound for 800 boxes, which they count as equal to 2d. per pound for the fresh fruit. We hardly see how they can figure it that way, for they make no allowance for cost of drying, boxing, transportation and sale. If this deduction be made, the net returns would probably be less than California growers obtained for last year's crop. We do not know what California dried apricots sold for 15 per cent less than Victorian. There is, of course, great variation in our product, and we do not remember that any was sent last year as a good sample of our product. It is, of course, unfair to claim victory unless both sides agree upon terms of contest, and thus have a chance to do their best. With such a contest we are not afraid of Mildura apricots nor any other. We are glad, however, that they are opening the English market. It should take apricots enough to help all apricot countries dispose of their surplus.

Our southern friends use our experience in developing the fruit industry as an incitement to their own people to press forward. This is all right. We are glad to be a shining light to anybody. But their sketch of our disadvantages should not be allowed to go without correction, lest they deceive themselves. We read in the Melbourne *Age* as follows:

There can be no doubt that Mildura and other places along the Murray offer even greater advantages than California. We have seen that even what must be considered a merely experimental shipment of apricots obtained higher prices than their old established rivals. In California the warm and sunny days are frequently followed by foggy nights, but at Mildura and in similar localities the nights are perfectly dry, no signs of fog being known in that climate. The consequence is that the fruit to be dried can be left all night in the open air and no evaporators or artificial driers are required. This is not only a much cheaper process, but it would seem that the flavor and appearance of the fruit are improved by it.

Can it be possible that our distinguished rivals have not heard that the advantages they claim for themselves in the sun-curing of fruits are fully possessed by the chief fruit regions of California? Do they consign us to the use of "evaporators or artificial driers"? Of course, along the coast we have summer night fogs, but the immediate coast cuts no figure in our fruit-curing industries. It will be enough for the favored parts of Australia to claim that they are as good as the main fruit-curing regions of California; in the nature of things they cannot be better.

From an Independent Standpoint.

Mr. Geary and his vote in Congress against the Wilson tariff bill are the theme of very severe criticism on the part of certain partisan papers in the First Congressional District. Such journals as the *Santa Rosa Democrat* and the *Woodland Democrat* are so intemperate in their indignation as to denounce Mr. Geary as a renegade and a traitor. The tone if not the letter of this sort of talk implies the belief that obligation to party is about the highest of political if not, indeed, of moral duties; and since this belief is not uncommon among partisans—since it is, in fact, the most effective principle in party politics—it is worth while to inquire if it be in fact well founded. Let us take the Geary case as illustrating the point: Mr. Geary has long been a Democrat, and previous to his election last year, sat as a Democrat in the House of Representatives. During all the period of his political life, until last year, his party has stood for a tariff policy including Protection as an "incidental feature." Mr. Geary himself has stood with that minority of his party which has boldly claimed Protection to be an essential and vital principle of American policy. As Mr. Geary says, he believes profoundly that free trade or such degree of tariff change as the reforming wing of his party has been proposing these ten years past, would be damaging to the interests of the American people and positively fatal to the industry and prosperity of the people of his own district.

Now there arises in Congress a reforming coterie who contrive to control the party machinery, seeking to carry the party vote for a measure embodying their extreme tariff views. They bring in a proposition which to a man of Mr. Geary's observation and temper seems ruinous. He sees that it would bring disaster upon the wool-growers of his district, that it would destroy its vineyards, that it would render its orchards worthless—in short, that it would impoverish the people who have sent him to represent them. In this situation he says, and he says it plainly and boldly, I do not believe this measure is wise or right; I believe it would ruin my people; as their representative, I refuse to vote for it. I reject the authority of a party organization which seeks to force me to do what I have always opposed, what my party has until now opposed and what my judgment and my conscience condemn.

Let us ask in soberness, was there any other possible course for an honest man? We think not!

If it be the duty of a member of Congress to follow his party leader, why should we send representatives at all? Why should we maintain at vast expense a Congress of three or four hundred men to make our laws if its individual members are bound to vote as the leader directs? It would be infinitely cheaper to put the whole business of legislation in the hands of Mr. Wilson, the Democratic leader, and Mr. Reed, the Republican leader, each to play with the numbers of votes given them, than to send automatons to go through the farce of casting the votes. Of course, the whole idea is absurd. We send representatives not to play the game of "follow my leader," but to think and act for those who send them; and the more thinking and the more acting they do in the interest of their constituents, the more truly representative our Government will be. The principle of party duty, which is invoked in censure of Mr. Geary, is a principle that has already too far degraded the manhood of our public men, and which would in no long time, if allowed to harden into established practice, destroy our political system. When the party leader becomes paramount, there will be death to government of the people and by the people.

The *RURAL* has not always approved Mr. Geary. He has seemed to us at times to be a demagogue of very small type; but in this instance he has done a manly act, and he deserves the applause which is the meed of courage and fidelity exercised under trying circumstances. We have no regard or care for the "politics" of the case, for in matters of this kind—matters of purely business judgment—the less politics the better.

It doesn't seem to matter much what particular aspect of the Chinese question is uppermost, for we always have it in one annoying form or another. When the first restriction law was passed, a dozen years ago, it was thought that there would be an end to the bother, but it was soon found that any coolie who wanted to land was able to masquerade as a merchant. Then we made an absolutely restrictive law, but the wily John contrived to smuggle himself in large numbers across our borders. Then we got a registration law and found that it could not be carried out. At last we have a law acceptable all round, but still there is cause for dissatisfaction. It seems that the yellow men are not only registering promptly, as the law directs, but that, like some others of our foreign citizens, they are registering often. It is a very simple thing for a Chinese

to register a half dozen times at as many different places, and thus come into possession of a half dozen certificates, five of which he is ready to sell for the use of others who may be smuggled across the border later on. The photographic requirement is really of small value, since most Chinese of corresponding age and size look alike, and since, in any event, time will soon make the photographic feature of the certificates obsolete. It is said that when the period of registration shall be passed, every well-regulated Chinese store will keep an assortment of certificates suitable to all ages and sizes, and that a perfect "fit," with exemption from prosecution, will be guaranteed. In this, there will be an advantage, namely, the traffic in fraud will be transferred from American customs officers to the Chinese themselves, though this may in turn be cited as a new instance of "ruinous Asiatic competition."

President Boggs and the State Fruit Exchange.

Our summary of the report of the State Agricultural Society, printed last week, gave scant justice to that part of it relating to fruit growing and fruit interests; and it is therefore given below in full. It is understood that the report was written by the president of the Board, Mr. John Boggs of Colusa county, and it may be taken, therefore, as representing his personal views. It really adds nothing to the general stock of information concerning fruit subjects; and its chief interest lies in the fact that it throws cold water on the movement among the fruit-growers of California to work through combination for the marketing of their products in their own interest.

Mr. Boggs condemns the plan of the State Fruit Exchange in terms which show plainly that he does not understand either its methods or its scope. The substitute plan which he suggests recalls the wise admonition to learn to swim before going near the water. How, let us ask, is the State to be "districted" and exchanges "organized in each locality" for a certain definite purpose except through the guidance of some central agency? The central agency—or the State Exchange—is an essential preliminary to local organization, for without it local organization would never be accomplished, excepting in isolated instances here and there. When the local organizations shall be effected, as the present plan proposes, it will be very easy for them to control the central agency or to throw it over and carry on their business in absolute independence of that agency. The State Exchange has no permanent hold upon the projected local exchanges; it is simply the central figure in the business of organization, something to rally around; and if it does not fulfill the permanent objects in view it can be thrown over for some better central organization.

It is inevitable that the new movement should meet with objection and enmity. It is expected that the business interests which have lived from off the fruit-producer, and while it is its mission to antagonize, will rise in force against it. It is expected that false friends will do it every possible harm. But it is a surprise that it receives its first hard blow from the hand of a farmer. Before rendering judgment, Mr. Boggs ought in common fairness to have learned enough of the purposes and plans of the Exchange to have spoken of them without misrepresenting them; and in any event he should not have employed his official character and authority to strike a blow against the effort of his fellow-farmers to relieve themselves of an intolerable burden.

In the mass convention in which the State Fruit Exchange was organized, the plan suggested by Mr. Boggs—preliminary local organization, with State organization to follow—was elaborately talked over. It was supported by only two men, namely, Prof. Allen and Mr. McGlincey of San Jose. The utter impracticability of the plan was exposed by a dozen speakers. Mr. Motheral of Kings county expressed the general judgment by saying that if the fruit-growers waited for local organizations to come into spontaneous existence, nobody present would live to see co-operation carried into practice; that there must in the nature of things be some central figure around which the different localities could form a ring. Upon a *viva voce* vote, everybody excepting Allen and McGlincey voted to proceed to the organization of a State Exchange. Mr. Hatch, Mr. Walton, Mr. Boalt, Mr. Paige, Col. Hersey, Gen. Chipman and a hundred other well-known practical fruit-growers sat in that convention and voted for the plan now being carried into effect; and orchardists generally will, we believe, be quite as willing to accept their judgment as that of Mr. Boggs.

Following is the full text of that part of Mr. Boggs' report relating to fruit:

The great interest heretofore displayed by the State Board of Agriculture in this most prominent and successful interest of California is still inherent, and its watchful eye is ever on the alert to spy out advantages for the followers of this industry.

The question of production and quality having been long since settled, the all-absorbing topic now upon this subject is the marketing of our products. While we are not wholly wedded to the plan proposed for the formation of a State Fruit Exchange, we believe that

a plan of co-operation can be inaugurated that would insure permanency by reason of inducing a large percentage of growers to take an interest, thereby preventing dissolution after exhausting the efforts of the few, as now proposed.

A plan that will induce the masses interested in the subject to co-operate is at this particular time most necessary, and must be accomplished sooner or later.

We believe a State Exchange practicable, but differ in its manner of formation with those who have started the proposed plan. Our idea would be to district the State, and organize in each fruit-growing locality a co-operative exchange and call a general meeting of representatives selected by the local exchange. From this body select an executive committee, whose duty it shall be to locate agents in the Eastern States and direct shipments. This executive committee should be paid for their services, and should be those whose interests lie in making shipments of our fruit a success to the grower first, and not for the benefit of any person who may desire to control the business for immediate gain. The idea pre-eminent at all times should be the success of the grower, thereby insuring permanency of the business. Many growers are at the present time almost discouraged in the further following of fruit culture, and from no other reason than of the large number of others benefiting from his investment and labor. We are of the opinion that the cost of handling and marketing of our fruits under a co-operative plan would be less to the producer than under the system now in vogue, and certainly much more satisfactory. There must be, however, a large and representative following of such plan that will adhere to and build up the system, otherwise it will drift into the hands of speculators who have in the past reaped a golden harvest each season from the labor and experience of those who have risked both time and money in the culture of this rich resource for California.

The operation of a Fruit Exchange organized upon this or a similar plan, with attendant agencies throughout the Eastern market, would not only inspire confidence in those who are now interested, but induce others to follow in an industry which, if properly handled, there is but little fear of overproduction. But to make a success of the proposition, the co-operation of all growers must be had, and in no better way can this be accomplished than through a system of auxiliary Exchanges located in the many fruit-growing districts of the State.

This system perfected, the next move should be to improve our transportation facilities. Under the present system we use the refrigerator car that is cumbersome and of great weight. The weight of each car is 40,000 pounds, an excess of 16,000 pounds over an ordinary fruit car. Additional excess of weight is found in the 8,000 pounds of ice needed from Sacramento to Ogden, making an excess of 24,000 pounds of weight, an amount equaling the first contents of the car. Of course, in figuring upon carload rates this excess of weight is duly considered by the transportation companies and is paid for by the shipper. Why is not the cold-storage system now in use in France for the transportation of meat, a plan worthy of emulation by our shippers? There, by the ammonia process, any degree of cold is furnished from a machine located in one of the forward cars, motive power for which is supplied by the locomotive, and any number of cars are connected and the temperature controlled in a most simple manner. By the introduction of this plan for the shipment of our fruits, the cost of transportation could be lessened at least 25 per cent, and we believe the transportation companies would be favorable to such a plan, as its use would greatly assist in increasing the output of California fruit.

This plan would greatly reduce the weight of trains, thereby insuring better time being made by the fruit trains, another important item in this connection. It is the expenses attendant on fruit shipments East that deters many growers from taking the enormous risks in this method of marketing, so that one of the foremost objects of a State organization should be to curtail as much as possible this expense by investigating and inviting inventions of all kinds in relation to the subject of transportation of fruit. After this is accomplished the future of fruit growing in California will no longer be in doubt, but steadily increase in extent, and with profitable results.

CALIFORNIA IN A PRODUCTIVE SENSE.

With a yield of from 30,000,000 to 40,000,000 bushels of wheat annually—an amount equal to the requirements of Germany or Italy or Spain, China and Brazil combined—an annual yield of 112,000,000 pounds of green fruit, an annual yield of 59,000,000 pounds of dried fruit, an annual yield of 1,700,000 cases of canned fruit, an annual yield of 3,000,000 boxes of raisins, an annual yield of 3000 carloads of citrus fruits, an annual yield of 40,000 bales of hops, an annual yield of 37,000,000 pounds of wool, an annual yield of 18,000,000 gallons of wine—which comprises the principal export products—can California be looked upon in any sense but that of a productive country? Is there any doubt of her ability to furnish breadstuffs and kindred commodities for a great population that require her products? Can there be any doubt as to her future? Her productive interests are paramount to all others, which fact and its advantages give California the great prominence she deserves. It is her productive qualities that we desire to be kept before the public, and it is the inducement we offer to those who desire to take part in her advantages.

We do not aim to encourage the immigration to this State of an unproductive class. We are not desirous of building up the cities in advance of the country, and much less either with an idle population; but to those who have capital, and especially in a limited amount, and are seeking the vocation of soil-worker, we bespeak your attention, and can assure you that the avenues for the acquirement of a prosperous living are many in this calling, and as yet none are overdone, while on the contrary there are many undeveloped. The field is large and offers great opportunities to the right kind of people.

Our importation of canned goods, such as meats, corn, peas, beans, condensed milk, to say nothing of hams, bacon, lard, poultry and eggs and other condiments and food articles, amount annually to thousands of carloads—an occurrence like "bringing coals to Newcastle." We have the soil to produce all these articles in abundance, and nothing but a scarcity of the right kind of people causes this state of affairs. There seems to be among soil-workers a tendency to follow the line of products originally begun in certain localities. If in any particular locality wheat is the chief product in hand, the new-comer goes into wheat-growing. If it is fruit, they plant fruit. If it is stock, they follow that interest and leave the growing of vegetables almost entirely to a foreign element that have no ideas of progression in preserving products. It is a diversity of products that makes a country vigorous and its people prosperous, and while California has a country variety of products, our imports show there is ample room for manifold increase of resources that are now dormant.

THE State Prison Directors, at their meeting this week, received the report of the warden that the prison grain bags cost just 5.2744 cents apiece. It was decided to sell them for the full cent advance, which the law contemplates, viz.: \$6.27 per hundred. Last year the price was \$6.04 per hundred. The prison authorities have now on hand about 4,300 bales of raw jute, with 2,000 bales on the way and expected to arrive by sailing vessel before June. The jute mill uses about twenty-five bales a day, so that there is little likelihood of there being any shutting down because of a lack of raw material.

ALL the arrangements for the running of the Canadian Pacific trains through to Seattle over the Great Northern coast lines, which begins February 1, have been completed. Not only will Canadian Pacific cars run through to that city, but the first-class train of the Great Northern will run through Vancouver.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, February 14, 1894, are from official sources, and are furnished by the U. S. Weather Bureau expressly for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total rainfall for the week.	Total seasonal rainfall to date.	Total seasonal rainfall last year to same date.	Average seasonal rainfall to date.	Maximum temperature for the week.	Minimum temperature for the week.
Yuma.....	1.42	.07	2.78	70	30	
San Diego.....	.06	3.42	3.15	6.45	80	36
Los Angeles.....	.24	6.04	17.46	12.48	60	38
Keeler.....	1.60	2.89	2.07	52	24	
Fresno.....	.82	4.98	6.54	5.31	58	32
Sacramento.....	.28	9.48	18.31	12.96	66	32
San Francisco.....	.31	13.63	16.46	16.41	54	38
Red Bluff.....	.30	14.76	24.21	15.78	54	32
Eureka.....	1.63	38.44	27.92	29.62	52	80

The State Fruit Exchange.

An Interesting Talk by Mr. Adams Concerning Its Doings and Plans.

Mr. Edward F. Adams, manager of the State Fruit Exchange, was in the city on Tuesday, and in response to some questions made in behalf of the RURAL PRESS, he responded, in substance, as follows:

"How are the fruit-growers of the State taking hold of the State Exchange movement?"

MR. ADAMS: "I have only visited Fresno, Kings and Kern counties. The action of the Fresno convention was correctly reported in the RURAL PRESS of last week. It has been arranged that I spend a week or two in that county, my time being at the disposal of a committee appointed by the convention to see whether the growers will actually do what they resolved they would do when in convention. I have myself no doubt of it whatever, for I have never met a more united and determined body of men. Within a month I expect to see the producers of Fresno county thoroughly organized and united, through the State Exchange, with their brethren elsewhere. I visited Hanford without previous notice, but in two or three hours a conference of about 25 of their ablest business men and orchardists was gathered to talk over matters, and arrangements were made similar to those in Fresno, and the results which I expect are the same. From there I went to Kern county, where local arrangements had been made to meet me when I could come, and although but three days' notice could be given, there was a convention with all parts of the county represented, which resolved upon local organization and selected directors to incorporate and take charge of the work. There will very likely be two or three local associations formed in that county. I asked the growers and business men who could afford to do so to subscribe \$1000 to the stock of the Exchange, and pay me 25 per cent of it to take away with me, and they did it, and the money is now in bank to the credit of the State Exchange. That is Kern county's full proportion of the capital required by the State Exchange, and they never made a wry face. As I find all other counties talking the same, I expect them to do the same when I see them, but it happened to come to Kern county to take the lead."

"What is the greatest difficulty you expect in connection with State organization?"

MR. ADAMS: "To prevent people from expecting too much, and expecting it all at once. There are certain things which we know we can do by co-operation; there are also certain things which we know we cannot do, and still others as to which we do not know whether we can or cannot accomplish them. But it takes time to do anything of consequence, which some do not realize. I yesterday learned of a man who was very enthusiastic about the State Exchange, but became almost disgusted when told that the Exchange could not right now take his unsold crop of raisins and get him a big price for them."

"Such impressions are very unfortunate, because if impossibilities are expected disappointment is inevitable, and there will then be danger of discrediting all co-operation."

"What are some of the things you know co-operation cannot do?"

MR. ADAMS: "We cannot find customers for any product without expense, nor can we get high prices for any product of which more is produced than those accustomed to use it can consume."

"What are some of the things you know you can do by co-operation?"

MR. ADAMS: "We can ascertain the facts about crops and markets better than it has ever been done, and so put the smallest grower on an equality, in that respect, with the largest buyer; we can study where new markets can be created, and we can develop those markets; we can buy the most important supplies from first hands, and resell to growers at cost and expense; we can establish official grades for products and certify to honest packing. There are other things, but the above are enough to illustrate. All of the foregoing refers to State co-operation. Local co-operation works on other lines, doing, for the most part, in a better manner and with more profitable results, the things which growers now do for themselves singly."

"What is the first thing necessary to effective State co-operation?"

MR. ADAMS: "Local co-operation. State co-operation on the above lines is impossible without that, because the

necessary revenue will not be pledged by nor can it be collected from individuals. The cost of securing the pledges, even if they were possible, and of making collections would be prohibitory."

"Why not, then, encourage local co-operation, first in a general way and wait for State co-operation until sufficient local organizations are formed to sustain it?"

"MR. ADAMS: 'Who is to 'encourage' local co-operation, and what kind of co-operation is to be 'encouraged'? There is, of course, now a strong movement among producers toward co-operative effort, which, if left to itself, would produce results of some kind, but much of this is blind reaching in the dark for an unknown object. Too much energy has already been wasted in this way. Those who have been in a position to study the most successful societies and note results, know very much more about the matter than those who have not been so situated. It is foolish to allow those now beginning co-operation to struggle through all the quagmires which the pioneers have learned how to bridge over or avoid. Local co-operation promoted from a well-informed central head, will have the advantage of all the experience now available, and the further and immense advantage of starting with a definite purpose of co-operating from the start with others organized on the same plan for wider operations not practicable for local societies, and yet essential to their highest success."

"Is it not the general understanding that the State Exchange is to fix prices and control the sale of all the fruit of the State?"

MR. ADAMS: "I hope not, and I don't think it is, but there are doubtless some very intelligent farmers so entirely unfamiliar with the conditions and necessary operations of trade as not to realize the impossibility of such a thing. The Exchange, of course, could do this perfectly, if the growers of the State would first comply with three prerequisite conditions. These are: First—That they should produce only so much fruit as the Exchange should direct. Second—That they should deliver the entire product to the Exchange for sale. Third—That they should arrange that the market should not be bothered with competing fruit from other parts of the world. As things stand now, we have a very lively competition in nearly all the fruits peculiar to California, from populations subsisting largely on black bread, olives and cheese, with household accommodations to correspond, which waste little time on books and schools, and put every man, woman and child to productive work in the field, and which can deliver their product in our own principal markets at less expense than we can put ours there. The problem is to meet this competition with our own product, produced mostly by men's labor, and continue to maintain our present standard of comfort and civilization. We do not yet know whether this problem can be solved by co-operation or not. I believe it can be. Certainly it can be solved in no other way. We shall undoubtedly hold our market, for our natural conditions are the best, and our energy and intelligence incomparably superior. But if, while holding it, we compete among ourselves as we have been doing, there are great numbers now in the fight who will not be in the procession of victors at the end. What the State Exchange can do is, by wise and thoughtful leadership on the lines above indicated, to put all growers on the same level of advantage in methods of production and marketing, and save to all, on various items of expense, what in many cases will make the difference between a profit and a loss on their crop. Doubtless, for the present at least, the State Exchange must maintain a selling department for the benefit of those not otherwise well served, but a good selling department in a fiercely contested market cannot be created on a large scale in a moment. To undertake too much of this at first would result in unsatisfactory work, and growers would lose confidence. The Exchange should undertake nothing which it does not see its way to do well."

"Will the Exchange put traveling agents in the field at the East?"

MR. ADAMS: "Who can tell? A traveling man, with a thorough knowledge of the fruit trade, could sell goods if he were a good salesman; if he were not a good salesman, some one else would get the orders. His salary and expenses would have to be paid anyhow. These could not be less than \$300 per month. Half a dozen of them, which is the number most frequently suggested, would cost \$1800 per month, exclusive of telegraphic correspondence. When the Exchange is endowed with that income, in addition to the amount required in other ways, the directors will be ready to decide how much of it to use in that way. Doubtless they would use some of it. To earn salary and expense at that rate, as compared with usual brokerage charges, the traveler would have to sell, on an average, a car of dried fruit every other day from the time he left home until his return. I don't know enough about the trade to be able to judge how likely he would be to do it. But that is the way to figure on it. It is true, however, that the right sort of men could do us more good than brokers can, and we could afford to pay them more. Meantime, the first thing is to get the income. When any one proposes such things to me, I always ask how much he is ready to put up for it. Coin is required to do business."

"Have you any doubt that the fruit industry of California will continue to increase, or that it will finally be carried on at a fair average profit to those engaged in it?"

MR. ADAMS: "No."

The Petaluma Poultry Show.

The Petaluma poultry show closed on Monday night of this week. It was a successful exhibition.

At a meeting of the California Poultry Association the following officers were elected for the ensuing year: President, L. S. Byce of Petaluma; vice-president, C. R. Harker of San Jose; secretary, A. Armstrong of Petaluma; treasurer, O. J. Albee of Lawrence; board of directors, J. W. Forgeus of Santa Cruz, E. H. Noyes of West Butte, George H. Croly of San Francisco, E. H. Freeman of Santa Clara, E. C. Thurber of Alhambra, S. A. Wells of Alameda, James Quick of Patterson, J. A. Schofield of

Hollister, William A. French of Stockton, J. A. Noon of San Francisco. It was arranged to hold the next meeting at San Francisco.

Sutter County Fruit-Growers.

The State Fruit Exchange Endorsed and a Local Exchange Favored.

The largest and most enthusiastic meeting of fruit men ever held in Sutter county convened at the court-house in Yuba City at 10 A. M. Saturday, February 10, 1894, to discuss the advisability of organizing a local fruit exchange.

B. F. Walton, president of the Sutter Horticultural Society and also president of the State Fruit Exchange, called the meeting to order and stated its objects. H. P. Stabler acted as secretary.

Mrs. W. T. Phipps of Yuba City rendered a vocal solo that well merited the hearty encore with which it was received.

The secretary read an article from the RURAL PRESS of February 10th on "Marketing Fruit." The article referred to the so-called Johnson plan of handling the raisin product as it was explained at a recent meeting of fruit men in Fresno.

Chairman Walton then introduced Col. Philo Hersey of San Jose, president of the Santa Clara County Fruit Exchange and vice-president of the State Fruit Exchange. Col. Hersey said he was one of the organizers of the West Side Co-operative Fruit Association of Santa Clara county, one of the first co-operative movements among fruit men in California. Many of the prune-growers of that district believed it would be cheaper and more satisfactory to conduct one extensive drying plant, than for each individual grower to maintain and operate an outfit of graders, dippers, etc. The plan was tried, with some misgivings at first, but it proved a great success, and the result is to-day that the West Side Association is a model institution of its kind. The success of this venture led to the organization of the Santa Clara County Fruit Exchange.

The exchange is a selling agency, and by its operation each prune-grower in the district is enabled to receive the highest market price for his product, and by having his goods pooled with the product of his neighbors he has the advantage of being able to ship in car lots, thus securing an advantage in freight rates.

The colonel believed that the system of securing information in regard to the fruit crop in California and other States, for the benefit of the growers, had been a great success, and had saved thousands of dollars to the patrons of the exchange. Correspondents were selected early in the season throughout the country and reports were received every week, showing the crop prospects and sales of fruit made in the district of the correspondent. Bulletins containing a summary of the information thus obtained were regularly mailed to the stock-holders.

Col. Hersey believed that what Santa Clara county had done in the way of co-operative fruit-drying and fruit-marketing should be emulated by every fruit-growing locality in the State.

At 12 o'clock, after the speaker had concluded his remarks, Chairman Walton announced that the ladies of Yuba City Grange had prepared a banquet for the fruit-growers and the visitors.

Recess was taken, and the meeting adjourned to the banquet-hall of the Masonic lodge, where full justice was done to a most sumptuous repast.

On reconvening at 2 P. M., the proceedings were most delightfully resumed with a vocal solo by Mrs. Gibbons-Williams of Yuba City.

Col. Hersey again took the floor and answered many questions relating to the details of operating co-operative drying associations and local fruit exchanges. Many points, touched on during his address of the morning, were more clearly explained in answer to the numerous questions of the various members present.

B. F. Walton said that by a thorough system of local fruit exchanges, in constant touch with a central or State Exchange, the growers would not in the future, as in the past, be at the mercy of unscrupulous middlemen. While it was not the purpose of these organizations to do away entirely with the middleman, the grower would be put on a footing that would make him independent. Many advantages of exchanges were cited, and one of the greatest was the fact that when the State is thoroughly organized, a grower will not be compelled to at once put his goods on the market when they are dried, thus entirely demoralizing prices; but if he needs money, will be enabled to warehouse his product and be accommodated by his banker on presentation of his warehouse receipt. This plan will prevent a glut of fruit and will facilitate a more even distribution during the season.

Joseph Wells, of Wells & Small, dried-fruit brokers of Chicago, was present, and on being called upon made a few remarks.

Messrs. G. W. Hutchins, John C. White, R. C. Kells and others addressed the meeting.

The growers present fully indorsed the co-operative plan of marketing fruit, as was evidenced by the unanimous adoption of the following resolution offered by J. J. Pratt:

Resolved, That we indorse the plan of a State Fruit Exchange, and that we believe that it is to the best interests of our fruit industry that we organize a local Fruit Exchange, and that the committee appointed to draft a plan of organization report at the next regular meeting of the Sutter Horticultural Society.

This meeting attracted the attention of fruit men of other counties, and we noticed, among others, H. C. Howard of Woodland, Eben Boalt of Palermo, J. H. Boalt of San Francisco, W. P. Hammon of Biggs, George Thresher, C. W. Thresher and T. B. Hutchins of Gridley.

A vote of thanks was extended to Col. Hersey for his able address, and to Mrs. Gibbons-Williams and Mrs. W. T. Phipps, the ladies who favored the meeting with music.

THE FIELD.

Beet Sugar at Watsonville.

The long season's run at the Watsonville beet factory closed some weeks ago, as noted at the time in the *RURAL*. The *Pajaronian* says men have been at work cleaning up machinery and getting things in shape for the enlargement of the factory, which is to be completed before the opening of the next campaign. When the whistle next blows for beets the Watsonville factory will have the capacity to handle 1000 tons of beets per day, and will be one of the largest beet factories in the world. The factory has just commenced to grow; the beet business is getting out of long clothes. During the past season the factory handled 65,396½ tons of beets, from which 7768½ tons of sugar were made. There is yet a large supply of syrup on hand, which may be processed next year. This is the largest tonnage of beets handled and the greatest production of sugar of any beet factory on the continent.

The season of 1894 promises to far surpass that of 1893. Already the contracted acreage has reached 12,000 acres, and the enlargement of the beet factory was a necessity. Under the new contract better results in tonnage per acre are expected, and an effort will be made to have the run commence sooner. We trust that the acreage demands will annually increase, and that the Watsonville beet sugarie will become the largest in the world. It has been of incalculable value to this town and the valleys of the Pajaro and Salinas.

The *Pajaronian* gives the contract form for the present year as follows:

"This agreement made and entered into between the Western Beet Sugar Company, a corporation duly incorporated under the laws of the State of California, parties of the first part, and John Doe, of Santa Cruz county, State of California, party of the second part,

"Witnesseth, That for and in consideration of the covenants herein contained on the part of the parties of the first part, that the party of the second part shall and will plant, cultivate, harvest and deliver to said parties of the first part, at their sugar works, at Watsonville, Santa Cruz county, California, during the current planting and harvesting season of eighteen hundred and ninety-four (A. D. 1894), sugar beets of the seed to be furnished for that purpose by the said parties of the first part, to the extent of _____ acres of land in Santa Cruz county; the particular tract to be so cultivated being now selected and agreed upon between the parties thereto.

"The parties of the first part hereby agree to furnish the necessary beet seed at ten (10) cents per pound, which alone shall be employed in raising said crop; the cost of said seed to be deducted from the price of beets first delivered under this contract, until the parties of the first part shall be reimbursed.

"It is also agreed that if, upon once sowing, the beets upon the above-mentioned tract of land or upon any part of it do not come up evenly and regularly and to the satisfaction of the agent of the parties of the first part, the party of the second part shall cultivate up the land or any part of it upon which the beets do not satisfy the said agent, and this contract shall then be void so far as such land or part of land is concerned.

"When directed by the parties of the first part, the said party of the second part is to commence and proceed with the harvesting and gathering of the crop, and to continue the delivery thereof in the beet bins at the factory of the Western Beet Sugar Company at Watsonville, Santa Cruz county, California, clean and in good condition, and with the tops closely and squarely cut off at the base or bottom of the green or sunburned part, until the said crop shall be exhausted. The date of delivery and the amount to be delivered each day shall be determined by the parties of the first part, and shall be increased or diminished to meet the requirements of the factory as they may direct.

"Beets weighing above five pounds, or grown mostly above ground, or defective and unfit to be manufactured into sugar, will not be received.

"From all beets delivered the parties of the first part shall have the right to deduct five per cent for earth and sunburned tops; but, if a trial washing shall show more than five per cent of earth and sunburned tops, all amount in excess of five per cent shall also be deducted.

"The party of the second part further agrees that he will keep his beets protected from sun and frost after removal of said beets from the ground.

"Should the party of the second part neglect or refuse to comply with the above conditions, the parties of the first part have the right, at their option, to cancel this contract.

"It is further agreed that the parties of the first part or their agent shall at all times have access to the tract of land cultivated under this contract by the party of the second part.

"In consideration whereof, the parties of the first part agree to pay five (\$5) dollars in gold coin, or its equivalent, per ton, for all beets cultivated and delivered in accordance with the terms of this agreement. It is, however, agreed that if the United States Government shall remove more than one cent (1 cent) per pound of bounty without imposing an equivalent amount of duty upon foreign sugar, then the price of beets shall be four dollars and fifty cents (\$4.50) per ton instead of five (\$5) dollars as aforesaid. Beets shall be paid for at the office of the Western Beet Sugar Company, at Watsonville, on the fifteenth day of the next following month after the beets are delivered."

The contract varies in two particulars from that of 1893. Heretofore there has been no limitation on the number of times for seeding, providing a good stand was not obtained, and since the percentage system of valuation was dropped the fixed price has been \$5 per ton.

These changes in the contract have caused much discussion among growers. The probable change in price was

not surprising. The growers recognize that if Congress removes the bounty and at the same time leaves foreign sugar on the free list, the manufacturer will not be able to pay as much for beets as in the past. The Watsonville factory is the only one that has paid above \$4.50 per ton. It is considered probable that the needs of revenue will compel a tariff of at least one cent per pound on foreign sugar; and in such event \$5 per ton would remain the price of beets. There will be a long and bitter fight over the tariff. The sugar interests of the South and West are marshaling their forces to secure a duty if the bounty has to go—and the pressing needs of our Government for a greater revenue will aid the fight for a duty. The price provision is put in the contract to prevent the factory from loss. It is generally believed that Congressional legislation will not injure the beet-sugar business.

The main objection that has been expressed against the contract is on single planting. W. C. Waters, superintendent of the Western Beet Sugar Co., informs us that the factory put in this provision to insure more careful planting, to the end that a more even stand of beets could be secured. Given good land, with careful planting, and a plentiful allowance of seed per acre, the factory believes that even stands of good beets can be secured. The experience of the past has shown the management where the best beet land is located, and the factory wants the best land. It is not after tonnage of beets entirely; it is also after sugar, and to secure the latter they have introduced the seeding provision, to the end that more careful planting and more uniform results can be obtained. A reading of the clause shows that only the poor parts of a tract are to be cut out.

The section of the contract in reference to the maximum weight of beets (five pounds) will be strictly enforced in the future.

When the beet business was commenced here there were numerous objections to the contracts, but time showed that many of them had no ground for existence. In making the new contract the company has put in the objectionable provision for its protection from overgrown sugarless beets produced on land where the stand was poor. In the handling of this matter, as in the relations between the farmers and the factory in the past, conservative judgment will be exercised by the management.

TRACK AND HARM.

Shall the Gambler Destroy the Breeder?

John H. Wallace writes pointedly in the *Kentucky Stock Farm* concerning the evil course of affairs on the race grounds, which many Californians will understand and appreciate. Mr. Wallace says there seems to be a general awakening among honest people everywhere to the destructive evils of gambling on the race-track. This does not seem to be confined to the moral and better class of society, but it is being considered by the race-track people themselves in a kind of non-committal way. Some turf writers have designated certain forms or methods of gambling on the race-track that are more vicious, in their opinion, than others, and insist that these forms should be banished while the others should be retained. Mutual pools, auction pools and book-making are the methods in general use. The first is French in its origin, the second seems to be American, and the third is English of not many years' standing in this country. The first is, probably, the most dangerous, for it is intended to catch office boys and all that class who can steal postage stamps and other little things that go to make up the price of a ticket in the mutuels. Thus the source of useful and manly lives is corrupted, and if any one will look around him he will see many bright and promising youths on the high road to infamy and ruin, and all originated in the temptations of the race-track and the poolroom. The other methods of gambling are perhaps less destructive because they are less well adapted to the resources of the young and inexperienced. The one central idea in all the methods is to try to get something for nothing, which is simply one form of stealing, when reduced to its legitimate elements.

But it is not my purpose now to write a homily on the evils of gambling in the abstract, but to consider the imminent danger with which the various gambling elements threaten the breeding interests, to the creation and building up of which I have devoted a lifetime. This gambling interest is now in a great measure divorced from the breeders themselves and from the people. The building and management of race-tracks, dependent almost wholly for profits upon the amount of money won and lost by gambling, has become a great and generally successful business. True, some shares of these properties may be owned by a few breeders; but whether they are or not, they are conducted uniformly and always in such a manner as will produce the largest income for the gamblers. No other reason can be assigned for the cruel and barbarous prolongation of races than that it brings money to the track through the gamblers. This is what the stubborn retention of "best three-in-five" means. If you cut down the number of heats required of the winner, you cut down the receipts from the pool-box in the same proportion. Thus the interests of the breeder have become subservient in a great degree to the owners and managers of race-tracks, with all their trickery and dishonesty.

The fact that practically all public contests of speed are directed and controlled in the interests of gambling is more clearly manifest on the running than on the trotting turf, but in completeness the latter is a good second to the former. The running horse has become simply a gambling machine and nothing more, as everybody knows, and the whole world is running after him. As Gen. Tracy once remarked: "We are fast becoming a nation of gamblers." A few reputable gentlemen still breed and run their horses, but they are always competing with the professional black-leg and gambler of the most dishonest and disreputable

type. The fact cannot be successfully denied that the clientele of the running turf is composed chiefly of the scum and off-scourings of society, both male and female. The idle and dissipated lives of a few accredited as fashionable people do not redeem the vast crowds in attendance from the general classifications as dirty and dishonest. As it is on the running turf, so it is becoming more and more on the trotting turf; and, it seems to me, they must stand or fall together.

It is not to be expected that any well-ordered or law-abiding people will tolerate such a great moral retrogression in violation of law. Public attention is now aroused and thousands of victims are crying out from behind prison bars against race-track gambling as the cause that has placed them where they are. The fight is on, and the law-abiding people of the country have tasted blood. The State of New Jersey has become the dumping-ground of the moral filth of all the race-tracks in the country. The issue was squarely made against all race-tracks last November, and after a terrific fight it won. Political lines were shattered and the gamblers went under, carrying many hundreds of thousands in race-track investments with them. Then the Supreme Court has decided, unanimously, that racing in that State was unlawful. This settles the question, both by the people and by the courts, and there will be no more racing in the State of New Jersey.

In the State of New York I understand a decision has been rendered by one of the courts against the constitutionality of the race-track gambling law, on the grounds that such gambling is essentially a lottery in all its elements, and, as the constitution especially forbids lotteries, the law is unconstitutional. This case will be carried to the Court of Appeals, and the decision can hardly fail to be sustained. It is especially apropos that this point should be passed upon by the court of highest jurisdiction in the State, for, as the State of Louisiana was bribed by great sums of money by the "Louisiana Lottery," so the great State of New York has been bribed by the promise of five per cent of the gate receipts of the race-tracks and cheated out of most of it. To make this bait as palatable and effective as possible, it was enacted that this "five per cent" should be distributed among the agricultural societies, and used by them for the purpose of "improving the breed of horses."

The same causes will produce the same effects in New York as in New Jersey, and it makes no difference what the decision of the Court of Appeals may be on the point that gambling on a race-track is a lottery, the moral sense of the people, when once aroused, will soon make short work with "The Ives Pool Law" as it now stands on the statute books. A law which makes it a crime to gamble anywhere and everywhere outside of a race-track and not inside of it is simply providing and protecting a cess-pool of vice. Aside from the vice which it encourages, it is repugnant to all our ideas of equal rights and justice, and should have no place among the statutes of an enlightened State and a decency-loving people. If a farmer, standing in his own field, makes a bet with his neighbor on a horse-race about to take place right across the fence and within 20 yards of where they are, he is guilty of a felony under the express terms of the statute, and both he and his neighbor may be imprisoned for that act. Why should it be a felony on one side of the intervening board fence six feet high and perfectly lawful on the other? Is there anything in the board fence that determines the criminality of the act? No; they must pay 50 cents each, go inside and invest their money with the gamblers, and that is the last they ever see of it. They can congratulate themselves, however, with the consoling thought that between them they have contributed five cents to the great State of New York "for the improvement of the breed of horses." It is true that this is an age of monopolies and trusts, but where in the wide earth can you find such a monopoly of gambling as is set up by this "Ives cess-pool law"? It is safe to say that just as soon as the moral sense of the public is called to this glaring iniquity it will be wiped from the statute book.

There is no use in trying to comfort ourselves with the idea that running races may be wiped out, but that trotting will still remain. They are "both tarred with the same stick," and if one goes the other will go. There is just as much immorality and dishonesty in the one as in the other, and the public conscience will not discriminate between gamblers. When the mandate goes forth it will be, "No more horse-racing." This is the complexion to which the control of the gamblers has brought and is bringing the breeding interests of the country. To meet and combat this disastrous condition successfully, there must be unity of purpose, and, withal, unflinching honesty. The breeders must themselves organize and control their own meetings, and there must not be a pool sold nor a bet made. There must be no hypocritical pretenses to superior sanctity in refusing to start a colt against another colt because that be "horse-racing," and then quietly pocket his "divy" of a big gambler's meeting. There is no wrong nor moral delinquency in testing a field of colts, one against another, any more than there is in testing a field of bulls in the show ring. The evil, if there be an evil, is in the management and the surroundings. Take the county fair in your own town and compare it with the so-called "Breeders' Meeting" held later in the season, and you have an object-lesson of what the two meetings mean. At the former you have thousands and thousands of the best people of Kentucky, and all the people from a wide region of country. No gambling is permitted. Take the other meeting, and you have only a few Kentuckians, but a perfect carnival of gamblers from all parts of the Union, and all striving to get something for nothing. It is evident, therefore, that the breeders can successfully organize and conduct meetings of their own, and, with all gambling excluded, receive the liberal and hearty support of the best people of every community. Will they do it and thus save their great interest from ruin? Now is the time for a strong and united effort to secure such legislation in the different States as will protect and encourage breeders' meetings, with every form of gambling rigidly excluded.

THE DAIRY.

About "Handling" Cows.

Among the lectures delivered at the late meeting of the New Jersey Board of Agriculture at Trenton, was one on the above topic, by ex-Gov. W. D. Hoard of Wisconsin, in substance as follows:

I place handling a cow before feeding her. I use the term to cover the whole arrangement of her environment, and will treat first of the cow's pasture. A good pasture is one that yields an abundance of sweet, nutritious grass with the least possible exertion on the part of the cow. Too great pains cannot be taken to secure these qualities. Hiram Smith kept 100 cows on 200 acres successfully, and said his pasture cost him more per dried pound than did his winter feed. The less exertion required, the better, for too much exercise causes a shrinkage of milk. There is an intimate connection between bodily ease and milk production. Division of pasture (part used at one time and part at another) is good, but grass must not be allowed to grow too long in the unused pasture, for cows will not crop it above a certain length; they have the same aversion to blue grass. Hasty driving to and from the barn causes much harm in diminished milk giving. Each owner should have a Babcock tester. A small feed of bran at the milk stalls will bring up the cows quickly enough from pasture, and render driving with a stick or dog unnecessary.

Cows need shelter in summer more often than is generally supposed. A long rain even in hot weather decreases the fat in the milk. After a cold storm a summer or two ago, the Babcock tester showed a marked decrease in butter-fat in the milk of one of the herds which was under the charge of an Irishman. "Pat," said I, "you've been leaving your cows out in the rain." "And who told you that now?" he asked. "Mr. Babcock," said I. "Mr. Babcock? Did he now? Let him but show himself in my parts again and I'll make him sorry for snooping round my cows." When I showed him the tester he was greatly overawed, and said at last: "And can ye tell all about what a man's doin' behind his back with that machine?"

To protect cows from flies some advocate keeping them in during the day and letting them graze at night. But the horn fly works as well by night as by day. It appeared in the West three years ago. [Prof. Smith remarked that the horn fly is decreasing in New Jersey.] A silo should be put in, especially for summer, the year before. A summer silo should differ from a winter one in this respect—it should be deep and narrow, for when opened it will of course ferment quicker in summer than in winter, and as small a space as possible should be exposed to the air. Summer stabling requires extra care, to keep down odor. Sprinkle the floor with land-plaster, to absorb ammoniacal gas and to keep the floor from growing slippery. This gas is really very harmful; people have suffered ammoniacal poison from it, and the lungs of animals have been injured. Besides, we buy ammonia. Now, a little land-plaster (sulphate of lime) will absorb this, and we are saved the purchase. Acid phosphate and kainit will answer the same purpose; pure lime will not do, as it doesn't absorb ammonia.

My second main point is winter shelter. This implies first of all a good barn. I have been amazed at the wastefulness of dairy farmers about New York and in New Jersey. Cows often wander all day in the snow, and are sometimes fed in the snow. This is perhaps due to the mistaken idea that a cow must have exercise. I am convinced that exercise beyond what is necessary for the maintenance of health is injurious to the cow as a milk producer. The production of milk presupposes a relaxed condition of the system; warmth is needed to produce this, and any lowering of the temperature will take so much energy away from milk production. I am therefore in favor of keeping cows under cover through the entire winter, *provided* one has the proper sort of barn—well ventilated, lighted and not overcrowded. Ventilation is a hard problem. Each animal requires from 800 to 1000 cubic feet of air; the animal warmth must heat the stable, and if you ventilate you chill the air. The question is often asked as to whether the stable is rendered less healthful by keeping the fodder over the animals. The finest barn I ever saw was built in the form of an L, in the short end of which the feed was kept; it was rolled to the long end (where the cattle were kept) on a car which ran overhead on a small track. In this way the fodder was well separated from the cows. There should be in every stable box stalls where cows can be put just before calving and when sick; they should be able to see the other cows, so as to insure contentment.

With regard to light, the underground plan of building stables furnishes excellent opportunities for the culture of tuberculosis. The need of light is shown by the fact that butter is yellow in summer and white in winter. Of course green feed partly produces this difference, but sunlight has more to do with it than most people suppose. The old methods of dairying were mostly arranged to save trouble and expense to the owner. What we should strive for is to promote the cow's comfort, and the greater her comfort, the better she will pay us. The improved methods are a thousand per cent more economical than those in vogue 20 years ago. I consider the rigid stanchion barbarous—made for the convenience of the milker, not of the cow.

With respect to watering, a man should find how much his individual cow needs; it will generally be between 80 and 150 pounds a day. He will also find that the effect of cold water on the milk supply is bad. In winter, let the water be raised, if possible, to the temperature of the indoor air. Given first-class stable conditions, cows need little exercise. The natural method for a cow is to eat her feed, and then lie down and digest it. The male, it is true, needs exercise to produce the physical tone necessary for surety in the getting of offspring; but the law that governs

the health of the male is not the same as that which governs the health of the female.

Milk is a highly nitrogenous compound, and its composition should teach us how to feed. The ration must be balanced; you can't feed for cream. No horse has two running and two trotting legs—you must feed for all four. Even the hog who is fattening must be fed a balanced ration until he grows up. Milk is not made for your use or mine, and nature's purpose is not changed a whit if you put yourself in the calf's place. Feeding will not make a butter cow. Breed is a great factor, but individuality is also important. I had a fine Jersey that never produced more than 3.60 butter-fat. The feed should be muscle-and-nerve restoring. The cow that produces a pound of butter a day has used more nerve force than an ox that has hauled the heaviest load. This nervous strain considered, great care should be taken in handling a cow not to excite her.

German experimenters say that the relative proportion of the solid constituents in milk is fixed by the cow herself and cannot be changed. Every cow may be said, however, to have a maximum of production, and while she cannot go above this, she may fall below it; indeed, without proper feed and handling she may never reach it. The object of all our care is to bring out what is in the cow, to give her the most favorable conditions and let her show what she is good for. If you want better than her best, you'll have to get another cow; and, as Sancho Panza put it, "It's a great waste of lather to shave an ass." Nancy Hanks trots 2:04 on 12 quarts of oats; that speed is her food value. But can you measure the problem of producing a trotter by 12 quarts of oats? Imagine trying to make a trotter of a French coach horse by pouring oats down him! And many seem to have a Norman-horse understanding when they try to get milk.

Because a man keeps cows is not proof that he's a successful dairyman. In eight creameries about Fort Atkinson, Wis., are nearly 600 patrons. Every man has an equal chance, for all are paid for their milk by the test value. The butter all sells for the same price, yet there is a wonderful difference in the result per cow and per 100 pounds of milk, and finally per pocket. Here is one man with an average of 19 cows, 9 of them two-year-old heifers, whose average yield of milk per cow at the creamery was 4796 pounds, producing 289.53 pounds of butter per cow, and for which the creamery paid him for the year an average dividend of \$1.36 per 100 pounds. Here is another man who is contented with less milk per cow, and an average annual dividend of 97 cents; another with less milk and a dividend of 96 cents; another with less milk and a dividend of 93 cents; another with less milk and a dividend of 91 cents. The first man is a dairy student; he reads and studies the experience of other men; he realizes that success with the cow is very largely a matter of judgment, and that to exercise judgment he must study and exercise himself in dairy questions. You can judge for yourself whether it pays or not. Two years ago I visited the milk-condensing factory at Dixon, Ill. The superintendent had the figures per cow concerning every patron. A few will serve to illustrate the point. One herd of 45 cows gave an average of 4055 pounds per cow, the owner receiving therefor \$42.39 per cow. Another of 46 cows gave 5630 pounds per cow, returning \$60.56 per cow. A number of other herds averaged over \$70 per cow. The price of milk was uniform to all, being 90 cents a hundred in summer and \$1.30 in winter.

POULTRY YARD.

Hints on Ducks.

James Rankin recently read a paper to the Rhode Island Poultry Institute, from which we take the following:

The breeder should exercise the most careful handling and feeding of his birds, and, when necessary, handle gently, always taking the bird by the neck. This is essential, as the bones of a well-fed, well-fatted duck seem wholly disproportioned to the size and weight of his body, and the limbs may be broken in an attempt to escape when being caught. Move quietly among the layers, if you would have them thrive. I have known a pair of heavy exhibition birds to lose a pound per day during their confinement the first four days of exhibition, and to be eight pounds lighter than they were ten days before they were started for the show. Their recuperative powers are equally wonderful. The majority of people believe water is necessary to bathe in to secure fertility of duck eggs. My ducks never see water, except to drink, the year round. They are confined in these yards for nine months, or until Aug. 1st, when they are removed in order that the land may be disinfected. This is done by plowing and growing a crop of barley or rye, when the land is ready for the ducks again. During the autumn and early winter months feed twice each day about equal quantities of corn meal, wheat bran and boiled turnips and potatoes, with about ten per cent of ground beef scrap thrown in. At noon give a small amount of dry food, composed of equal quantities of cracked corn, oats and wheat. When the birds commence laying, as they will about Jan. 1st, gradually increase the quantity of meal and animal food, proportionally decreasing the amount of bran. I like the Pekin duck, as it lays earliest and will grow the largest number of pounds of flesh in the shortest time. It also matures earlier, is more hardy and domestic in its habits, never wandering far, and always returning to the coops at night. They are not mischievous and require less water than either of the other breeds.

The beginner with ducks and chicks in starting in should recollect that this is a business of detail and that small things must be taken into account. The best breeding stock must be selected, as well as the color of the feathers. The feathers of white birds command nearly double the price of colored ones, and are always more salable. The early maturity of birds is of vital importance. Many think it makes no difference if birds are three or four weeks longer in maturing. Let us see. If it takes ten weeks to

grow five pounds of flesh on one bird and 14 weeks on another, the one must necessarily cost more than the other per pound, simply because you have to sustain life longer in one base than in the other, and that cannot be done for nothing. That is why, though I can easily grow a pound of duck for five cents, I must have eight cents to grow a pound of chicken, because the ducks will take on five pounds of flesh in ten weeks, while the chicken requires 20 weeks to obtain the same size. To begin, the breeder must secure his stock, erect his buildings, and is then ready for business. The next thing is to feed them well, keep them warm and comfortable, giving them as great a variety of green food as is obtainable during the winter months, in order to induce early laying and insure fertility of the eggs. This matter requires close attention, because the profits in one week of the early market will always equal the profits in four or five of the late. In the spring there should be one drake to five or six ducks, and later in the season one drake to ten ducks. The feeding boxes should be long and roomy; mine are 6x7 feet long 8 inches wide and 3 inches deep. Do not keep food by them, as it will clog their appetites, affect the egg production as well as the condition of the birds. The natural food of the duck is principally vegetable and animal food which is obtained in brooks, puddles, swales, etc. Unlike the hen, the duck has no crop; consequently it does not assimilate or thrive on hard food. In March and April, if the ducks refuse to lay when being fed a hard food such as corn, try a soft food and they will invariably resume flesh and begin laying.

How Good Stock Pays.

I was visiting a farm recently where I saw 1000 chickens of all sizes, grades and lineal descent. Anything was a chicken and so much per pound. I asked the farmer why he did not raise thoroughbreds and thus have two strings to his bow and work up to a fancier's position? He replied that the sales of thoroughbreds were so few that it would not pay. But, I remarked, there is not a bird on your place that will sell for \$1.50, while nine out of ten will not sell for \$1 each. Suppose you sell only ten per cent of those you raised for \$30 per dozen, the balance, though they were thoroughbred, would bring you as much per pound as those you now have. Would not this item furnish you a nucleus for a bank account? You say by hard work they pay you as you are now running it. He was silent a few seconds and finally said, "I reckon we are not getting all out of this thing that we might." That man is surely at the foot of the ladder, doing the very largest amount of labor for a dollar.

Poultry culture is a means of converting one's labor into cash; he who labors in the right direction and with the best breeds secures the highest price for such labor.

Again we see the poultry-raiser who acknowledges the fact that the product from crossing thoroughbreds pays a larger profit, and he it is who purchases eggs and stock of the fancier to produce his workers. They grow quicker to a salable size and are better producers of eggs, which are his staple product and find a daily market the year round. He disposes of one-half of his product for poultry and sells for breeding and show purposes only those of the highest merit. We see him enjoying the best of reputations as a fancier, his pockets well filled, and ever alive to the interest of his calling.—I. K. Felch.

The Hen and Family Rations.

Too many farmers depend too much on the village grocer for their table supplies, which exhaust the profits of the farm. This is a great mistake. A good vegetable garden, a variety of small fruits and an orchard with plenty of fruit for the table, and some to sell, are much more satisfactory than what you are able to buy at the store. A well-kept poultry yard with eggs the year round, and fowl for the roast or stew as often as desired, affords a family an independence not found elsewhere.

Every farmer who knows what he is about keeps a few hens, as there is no other product on the farm that pays better profit on money and labor than a flock of hens well attended, especially in the winter season. We do not mean to say that there is more profit in winter, but that they need more care, as in summer they will, with freedom, mostly look out for themselves. Some will say: "My hens do not pay for their keeping." This is true in many cases, but it is always the fault of the man and not the hens. Those of you who are blaming your hens because they do not lay should consider the reasons. Have they warm quarters? They cannot lay in winter unless they have green food, such as cabbage and the like, and plenty of shells, ground or powdered bones, and gravel. Give them warm water for drink. Give them a warm mash in the morning made of wheat bran and corn meal, or corn meal and ground oats. If you do this, and your hens do not lay, then you may blame your hens.

Oregon Poultry Association.

The object of the Oregon State Poultry Association, organized at Portland, Jan. 15, 1894, is to consolidate the interests of Oregon poultrymen and to so concentrate their efforts in behalf of the poultry industry as to make them effective. The idea will be to hold exhibitions, shows, etc., and to disseminate as thoroughly as possible any knowledge that may be of practical benefit to those engaged in rearing and selling poultry and pet stock. The idea is to so improve and cultivate the poultry of this State as to effectually bar out the surplus stock of other States. The membership fee is \$1; annual dues, \$1. The officers are as follows: E. J. Ladd, Portland, president; E. Dixon, Ely, vice-president; H. S. Hudson, Gaston, secretary; C. Kocher, Aurora, treasurer.

CEREAL CROPS.

The Future of Wheat.

An Able Essay by a Prominent Statistician.

Wheat culture in this country has been primitive in its methods, and somewhat migratory in its movement, in its western march gradually yielding to the operations of mixed agriculture and the semblance of rotation practiced by the better class of American farmers. As it gains prominence and dominates cropping, in this movement, it is not abandoned, but diffused in Eastern practice, and ceases to be a commercial or shipping product, but is absorbed instead into local home consumption.

There are anomalies in wheat culture. An average acre of the poor soils of New England makes a larger yield than the States of the northwest. The naturally poor soils of other countries make the largest products. The hard and relatively intractable though strong soils of England give the largest national yield, while the sea sands of Holland and Belgium come next. Cultivation and fertilization account for these results, which average twice as much as those of wheat growing in the United States. Yet the average here is about the same as that of Europe. Russia, with the richest soils, gives seven or eight bushels per acre, and India nine bushels. As a rule the countries with the richest soils give the poorest yields.

The crop is a favorite with the immigrants, because our free prairies can be broken at small expense and cultivated with little labor; it is salable for ready cash, and necessary to provide resources for buildings or fences, or farm stock or implements, and is also depended on for deferred payments on purchase. Cultivated year after year it declines in rate of yield, not so much from loss of fertility as from the crowding of weeds. The very fertility of the soil is the means of deteriorating and almost destroying the crop. It is one of the compensations of nature to make it impossible for one to get something for nothing. Sometimes the avenger comes in to execute a wholesale destruction, as is now threatened by the Russian thistle. Only labor can be depended on to conquer all things.

FIFTY YEARS AGO.

Fifty years ago five-eighths of the crop was produced in four States—Ohio, Pennsylvania, New York and Virginia. In 1850 Pennsylvania held the first rank, with 15,367,691 bushels. In 1860 Illinois had advanced to the front, with 23,837,023 bushels, with Indiana and Wisconsin next, the three producing nearly one-third of the crop. Another ten years found Illinois still first, with Iowa a close second, followed by Ohio, Wisconsin, Pennsylvania, Michigan and California, thus spanning the continent with wheat fields, these seven States producing nearly six-tenths of the crop. In 1880 Illinois remained at the head of the list with 51,110,562 bushels, followed by Indiana, Ohio, Michigan, Minnesota and Iowa, none with less than 30,000,000 bushels. Since, by turns, Minnesota, Dakota and California have taken first rank, each for a year at least, in the course of crop extension and product fluctuation. There has always been a tendency to local concentration and to local changes of area.

The supply of wheat per head of population has nearly doubled in fifty years. This is a remarkable fact in view of the phenomenal increase in population. Taking the census statements, that supply was 4.96 in 1840, 4.33 in 1850, 5.5 in 1860, 7.46 in 1870, 9.16 in 1880. In 1890 the supply was about the same as in 1870, but the crop of 1891 gave a supply of at least ten bushels to each inhabitant.

INCREASE OF PRODUCTION.

Twenty years ago France stood at the head of the wheat-producing nations. In 1874 the United States took first rank. At that time the area of wheat here was nearly 20,000,000 acres. Its largest breadth since has been about 40,000,000. Now it is less by perhaps 4,000,000 acres, though some estimates are lower. During these 20 years, in which we have grown two bushels for every one grown before, France has changed very little in area or production, in the average the product fluctuating with good or bad seasons, the breadth practically remaining stationary—not far from 17,000,000 acres. India has now about the same breadth as 20 years ago. The normal wheat area for years prior to 1874, as stated by the most reliable statistical writers upon India, was 26,000,000. About that time, in the progress of commercial enterprise following railway extension, there was a revival of interest in wheat growing, and in the course of ten years the conservatism of growers did yield sufficient to add 2,000,000 to the normal aggregate. Then many of the commercial journals of this country became alarmed at the prospect of the loss of our wheat trade. I saw that the Indian wheat movement had reached its limit and prophesied a reduction of both acreage and exports, and was criticised in some quarters for the opinion, but the decline promptly set in. In 1887 I discussed Indian wheat prospects with Sir James Caird at his residence in London. He had been Indian Famine Commissioner, and was an eminent agricultural expert. He endorsed fully my views as to Indian wheat growing, as did Professor Wallace, of Edinburgh, afterward. The present acreage is reduced to the normal breadth of long ago, and there is no immediate danger of further Indian competition. At the same time I suggested that the Argentines and Chile, then scarcely known in wheat production, would greatly increase their production, and might in time contribute materially to the European deficiency. In 11 months of last year the Argentine Republic sent to Great Britain 7,442,836 cwt. of wheat, and India only 5,466,419. Ten years ago this South American domain of unlimited prairie was almost a nonentity in the wheat market, but now comes close to Russia, which in the same period sent 8,311,200 cwt. to British markets. To be sure the United States stands proudly alone in its supremacy, having contributed

30,825,427 of the aggregate of 60,402,665 cwt., as well as 16,871,588 of the total of 19,023,885 cwt. of flour, altogether about five-eighths of the British imports, and representing but little short of 100,000,000 bushels of our wheat in the trade of 11 months.

DOUBLING THE ACREAGE.

This doubling in the acreage in little more than two decades, advancing more in 25 years than in two and a half centuries preceding, was a marvelous performance, which set thoughtless people to imagining that the business of wheat production was being abandoned elsewhere, that the rye-eaters had all come over to wheat, and the world's markets were all depending upon America for bread. There was a cause for this remarkable extension. In the first place, the population had nearly doubled. After the Civil War was over, and the news of our progress and prosperity spread through the world, millions of immigrants swarmed upon our shores, filled our cities, and sought our public lands for farms and homes. Our exports of wheat and flour, which averaged for the five years ended in 1875 61,601,559 bushels, rose to an annual average of 140,025,954 bushels in the quinquennial period ended in 1885. A series of unfavorable seasons in northern Europe reduced heavily the production and increased proportionately the deficiency. The increased requirements were, therefore, much greater than the crop of 1859 and nearly as much as the entire crop of 1869. Notwithstanding the phenomenal increase of exports, the enlargement of the home demand was a far greater stimulus to production, as it ever will be. A comparison of the annual averages for two decades is as follows:

	1870-1879.	1880-1889.
Bushels.....	312,152,728	449,696,359
Acres.....	25,187,414	37,279,162
Value.....	\$327,407,258	\$371,899,604

The official estimate of three years since—1890-1892—make annual averages of production 508,997,000 bushels, 38,186,160 acres, and the average value \$390,119,423. The most noticeable point in this statement, next to the large increase of area and product, is the very small increase in value. The values per bushel are respectively 104.9 cents, 82.7 and 76.6, a sliding scale inviting to serious discussion of the causes of decline. The average value per acre fell from \$13 to \$9.97, and rose in the three years' period to \$10.21, mainly from increase of yield. This is the redeeming feature of the statement.

THE WORST WHEAT SEASON.

The year 1881 was the worst wheat season, with the lowest production, of recent times. That of 1891 was the best of which there is any record, and the largest crop ever grown in this or any other country. A statement of official estimates of production for this period, with the amount exported and the total distribution, which includes with exports the seed wheat and estimated home consumption, shows that from an average production of 455,404,150 bushels there was exported as wheat and flour an average of 128,334,791 bushels, or 28.18 per cent, and the entire distribution was 454,427,951. As the difference is less than a million bushels, the closeness of the calculation seems almost incredible. Of course, production and consumption are estimated, but the latter is always on the basis of 4½ bushels per head, fixed 15 years ago after extensive investigation, and the annual estimates of production are made nearly a year before the exports are fully known from original returns of local estimates. While the production is not quite accounted for, it is known that the amount annually burned or sunk in the lakes, or fed to stock, is not included, and also that a considerable surplus of the crop of 1891 was held over. If from these causes we allow 200,000,000 bushels—which seems an excessive allowance—to be added to the record of distribution for those 11 years, the total would exceed estimated production by less than two per cent. So the basis of consumption must be proved to be too high, as the estimates will stand proved to be not only conservative, but marvelously close—not overestimates, as has been charged, but underestimates by 1 or 2 per cent. The record is as follows:

	Production.	Exportation.	Total dist.
1881.....	383,280,000	121,892,389	420,107,962
1882.....	504,189,470	147,811,316	450,581,628
1883.....	421,086,160	111,534,182	422,217,571
1884.....	512,765,000	132,670,867	448,836,606
1885.....	357,112,000	94,566,794	413,040,700
1886.....	457,212,000	153,804,970	476,333,628
1887.....	457,320,000	119,625,344	499,686,326
1888.....	418,368,000	88,600,743	425,012,445
1889.....	490,560,000	109,430,467	452,403,467
1890.....	399,282,000	106,181,316	457,763,316
1891.....	611,780,000	225,665,812	582,173,812
Totals.....	5,069,445,720	1,411,682,700	4,998,707,461
Average.....	455,404,156	128,334,791	454,427,951

These figures represent a wide fluctuation in annual production, caused far more by difference in rate of yield than by changes in area. And it is a serious consideration that climatic conditions are by no means the sole cause of fluctuation in yield, for the well-cultivated areas do not exhibit so wide a variation in yield, showing that a portion of such loss is avoidable and that rotation and high culture tend to modify and control injurious climatic influences. Two crops have been harvested since the great yield of 1891. The official returns of 1892, like those of the preceding year, were affected by the organized efforts of many ill-advised farmers, aided by the bulls of the market, to underestimate the crops, so that the very slight and almost inappreciable underestimation of previous years became so manifest as for the first time to become somewhat misleading. A similar underestimate of the crop of 1893 has undoubtedly occurred. It is not probable that the product is less than 440,000,000 bushels.

THE SURPLUS.

Wheat has been exported, since the establishment of the Government, in small quantities for many years, and mostly in the form of flour. In the ten years from 1825 to 1835, the exports were equivalent to 50,209,212 bushels, of which 29,469,520 was the equivalent of wheat in flour. In the next ten years there was little increase, the exports amount-

ing to only 56,627,847 bushels. For these 20 years scarcely more than five millions per annum was exported, yet this was about six per cent of the production.

Then the movement began to accelerate. In five years more, to 1850, the exports were 71,608,785; to 1855, 82,194,545; to 1860, 117,699,913. In 35 years the aggregate was only 378,340,302 bushels, or less than has been exported in two and a half years of the present quinquennial period. Then followed a movement of greatly increased volume, and in five years, under the stimulus of war, there was sent abroad 237,095,572 bushels. A change also occurred in the form of shipment, for 138,306,907 was in grain and 98,788,665 in flour, but in 1875, when the volume of exportation for 50 years was 1,062,425,747 bushels, more than half of it, or 547,311,535, had been in the manufactured form.

Thus the surplus increased from five per cent up to about three-eighths of a crop for a single year, fluctuating with a varying rate of production, and for twelve years past averaging about 28 per cent. The record can be more easily studied if placed in graphic form. The following diagram illustrates the rate of advance since 1850, and to eliminate the distracting annual fluctuations it is made to exhibit successive periods of five years. The progress has been practically continuous, broken only twice by retrograde. The figures give the annual average of exportation in each of the periods:

Period Ended	Average Annual Export. Bushels.	FLUCTUATIONS.
1855	16,438,909	—
1860	28,639,985	—
1865	47,456,018	—
1870	77,816,458	—
1875	61,601,559	—
1880	109,262,964	—
1885	140,025,954	—
1890	113,216,463	—
1893	174,826,242	—

The last is a half period of two and one-half years, to Jan. 1, 1893. The exports of the past year slightly exceed the rate named. The period will be completed in eighteen months. The exports of the fifth year will be less than those just proceeding, but the average for the period will be reduced very little, if any, from the above average of 174,826,242 bushels. This quantity is greater than is annually produced by any other nation except France, Russia and India, and is more than half as much as the total production of France, two-thirds as much as that of India, and quite as large a proportion of the product of Russia.

Will this exportation continue? If farmers are wise it will not; with increase of home population, it is improbable. Many have been looking heretofore for a decline only to find increase. Diversion of labor to other crops has been hindered by the conservatism that avoids new paths and the inexperience which dreads the first steps. In the present status of our agriculture, in the present prominence of wheat in crop distribution, there will be a surplus for urgent foreign deficiency for a long time to come.

WHY IS WHEAT SO CHEAP?

In former days, before the advent of railroads, the local price of wheat depended on the local demand; with plethoric harvests it was very low, with a poor crop it was high. In one case there were few buyers, in the other few sellers, as there was no surplus to sell. A record of "farm prices for two centuries," in the Wyoming valley of Pennsylvania, illustrates the situation elsewhere. In seasons of usual abundance a common price was 60 to 67 cents, in times of scarcity 87 cents to \$1 per bushel was charged, and in the frosty year, 1816, the price went to \$2 per bushel. In the West, before the days of railroads, wheat was often sold as low as 37 cents in abundant seasons, and at two and three times that price in the same localities when the local supply was insufficient. The extension of railroad mileage has been an equalizer of prices.

In the same way the world's wheat values have been equalized. The surplus of India was formerly placed in pits to equalize somewhat the wide fluctuations of "bumper" crops and those of famine years, but scarcely any was exported. In Russia the local surplus was heaped up, but could not be distributed for want of railroads, and was used freely, sometimes in place of other grain, or became damaged and was fed to cattle. Within 20 years railway and steamship communication has been so extended and cheapened that the hidden surplus of old lands has been brought out and distributed, giving the impression of an immense enlargement of area, when in some countries there was little of such extension, in others the stimulus of outside demand had somewhat broadened the fields, and in others better prices had induced greater care and better culture and larger returns.

So the great markets were able to keep up good stocks, the elevators were filled, the people fed at a lower price, and few appeared to know where so much grain came from.

These facts suggest the answer to the query, Why is wheat so cheap? It is a matter of free trade. The wheat-grower of Dakota is in competition with the ryot of India, the ex-serf of Russia, the Italian immigrant of the Argentine Republic, and these cheap competitors all have inexpensive water communication with European markets. They have not hitherto been permitted to send their grain to this country, but our wheat-growers voluntarily elect to produce a surplus, and then of their own free will ship it to Liverpool and offer it at the same price that the Russian or India grower will furnish it, and by the enormous quantity sent actually force down the price of foreign wheat to a still lower level. The worst of it is this very procedure reduces, usually to the same level, all our home consumption, a quantity three or four times as great. Ordinarily foreign markets will take a large quantity without reducing prices to a low level, but any excess so reduces value that it is virtually thrown away, and the aggregate value of a

year's production may be actually less than it would be were such excess burned or sunk in lake or ocean.

THE REASON WHY.

Why was the price of wheat 90 cents in December of 1892 in Georgia when it was 51 cents in South Dakota? Because the Georgia grower has a quick market at home and the Dakotan has to take Liverpool prices minus charges and costs of transportation 5000 miles. A small deficiency in Georgia, made up by Northwestern wheat, adds the cost of transportation a thousand miles to the price of Georgian home-grown wheat and protects the grower. Thus one class of growers has protection and another free trade by their own choice and without the intervention of law.

This free competition with the world has reduced the value of English farm lands and rents, as estimated by their own publicists, fully one-third in 20 years, and some say one-half, and has bankrupted or depleted the capital of English working farmers almost without exception.

Some attribute low prices to option selling; others claim that it is beneficial rather than otherwise. Whatever its effect, it is slight compared with the causes indicated above and need not be discussed in this article.

It is not necessary to raise the question of overproduction except incidentally as above, or array statistics to show relative increase or decrease in different countries. It is sufficient to glance at the receipts and stocks in Chicago and elsewhere in this country, at the exports of surplus countries, at the stocks on hand in principal foreign markets, at the net consumption of different countries, and at the prices corresponding with the pressure of accumulation, to prove that there is no lack of breadstuffs. Not that there is everywhere a large accumulation. It is not necessary. With free and full international communication and national harvests of summer and fall and winter overlapping, supplies are equalized; and while there is enough in sight for current wants, no buyer cares for threats of impending deficiency; he deems it ample time to raise the price when visible supply begins to fail. "Sufficient to the day is the evil thereof" is his motto. If the price is to go up, so much the more need of getting bargains now, he thinks.

This unprecedented cheapness will cure itself. It will reduce area, and, if low yield should also deplete production in any considerable part of the international breadth, prices must advance, and if wars should intervene, making it necessary to accumulate and use extra supplies, the upward movement of values would be accelerated. Our wheat-growers, however, are too humane to wish to fatten on human misery, or live by the death of others.

EXCLUSIVE WHEAT CULTURE.

Primitive and exclusive wheat culture has been pushed westward beyond the Mississippi, beyond the Red, and is destined to go beyond the Missouri to the mountain valleys and the western slopes that descend to the wooded valley of the Pacific coast. The sooner it goes, and the farther, the better. So long as it continues there will be no direction or wise control of the wheat breadth. The incoming of diversified cropping, having a scientific basis, and conducted systematically and on business principles, and not as a haphazard speculation, will regulate the area of wheat and all other products, reduce the cost of production by increasing the yield, modify the losses from insect depredations and incursions of weeds, and reduce agricultural production to an equilibrium, at the same time increasing materially the margin of profit. There is an infancy in the growth of every industry, and wheat culture has had its mumps and measles, its whooping cough, and should now be ready to cut its eye teeth and enter upon a season of judicious and prosperous activity in the maturity of its development. Then wheat will be worth growing, the country will be well supplied, a moderate surplus will find a remunerative foreign market, and the yield will be 15 to 20, and eventually 25, bushels per acre, and a population of a hundred, even two hundred, millions will feel no lack of bread within the boundaries of our own nationality.

J. R. DODGE.

THE IRRIGATIONIST.

The Water Supplies in the Arid Regions.

Part I.

By J. W. Powell, Director of the U. S. Geological Survey.

In the western half of the United States agriculture is in part dependent upon irrigation, or the artificial supply of water. The extent to which such agriculture can be carried on depends, first, upon the amount of water which a growing crop requires, and, second, upon the amount of water which can be artificially supplied. In considering these questions it is necessary to use some unit for the measurement of water, and for this purpose one that is simple and practical is readily found. Land is usually cultivated by acres, and water can be measured in terms of acres. An acre of water one inch deep may be known as an *acre-inch*, and an acre of water one foot deep may be known as an *acre-foot*. The first problem to be solved is this: How many acre-inches of water are necessary for the adequate supply of an acre of growing crop for one year? There are two methods by which this can be determined, and it is found that substantially the same conclusion is reached by either method.

I. THE AMOUNT OF WATER REQUIRED.

1. For more than a century scientific men have been engaged in determining the amount of water which various plants will consume through their roots and exhale through their leaves, the process being known as transpiration. This investigation has been pursued by various methods and by different men, and a common general result has been obtained. It has been found that different kinds of

plants require varying amounts of water. Deciduous trees require more than coniferous trees with needle-shaped leaves. In general, grasses, vegetables, cereals and fruits require a relatively large amount of water, as will be seen by the following statements:

Grass growing in turf will transpire in one day a weight of water a little greater than the weight of the dried grass.

Many vegetables will exhale in one day an amount of water as great or greater in weight than the dried plants.

Cereals, such as wheat, oats, barley and corn, will exhale their dry weight in water every day.

Perennial vines and trees that bear fruit, such as the grape and the apple, will exhale every day a weight of water equaling the weight of the dry growth of the year.

Assembling these facts, the following general statement can be made: All average cultivated plants will daily exhale an amount of water equal to the dry growth of the plant for the year. This growth is effected in varying times with different plants. Some plants continue their growth for 75 days, others for 150, or even longer; but in general the plant requires for good growth water amounting to about 100 times the weight of its yearly growth when dried. Thus, a ton of hay requires 100 tons of water for its growth. The hay is not perfectly dry, but the loss by complete drying about equals the weight of the dry stubble and roots. An acre-inch of water weighs 226,600 pounds, or about 11½ short tons. Two tons of hay require 200 tons of water, which is about 18 acre-inches. If the crop of hay on an acre is two tons the grass will transpire 18 acre-inches of water.

The Duty of Water.—We thus turn proportions into measured quantities by acres of crop and acre-inches of water, and we have a statement of the acre-inches of water which it is necessary to supply to an acre of growing crops for one year, which may be called the "duty of water." This duty of water, then, as here defined, is the amount of water in acre-inches which will be required by an acre of growing crop for one year. In stating this duty of water it will be given for an average growth, not for the maximum growth, as will afterward be explained.

When There Is Variation.—There are variables to be considered in this problem; that is, the duty of water will depend upon latitude, altitude, humidity of the air with clearness of sky and kind of crop. In northern latitudes plants need less water than in southern; in higher altitudes plants need less water than in lower; in more humid conditions of the air plants exhale less water than in arid conditions, though there seem to be some curious exceptions to this; and, finally, some plants require more water than others. But these variations are not so great but that they may be safely neglected for the general statements herein proposed, and it may be stated that an acre of average growing crop will require a mean supply of water of 18 acre-inches. This will be called the absolute duty of water.

Absolute and Possible Duty.—When water is applied to the land by pipes and all possible precautions against evaporation are taken—the ground well prepared and the water applied in such a manner that there is no loss by overflow, no loss by seepage, and a minimum loss by evaporation either by reason of mulching or shallow surface cultivation—at least two acre-inches of water will be lost by evaporation from the soil. We have, then, the absolute duty of water as 18 acre-inches and the possible duty of water as 20 acre-inches.

The Practical Duty.—For average crops, all water given to the land in excess of this amount evaporates from the surface of the land or runs away over the surface and underground, and is therefore wasted. But all such waste of water cannot be avoided except at an impracticable cost. In putting the water on the land some amount must necessarily be evaporated. Under good conditions of cultivation, therefore, it is believed that six acre-inches of water must be added to the 18 inches; so that, in the western half of the United States, the mean absolute duty of water, plus the practically unavoidable evaporation, is 24 acre-inches for every average acre of crop. Otherwise stated, an acre of growing crop will drink up by its roots and exhale by its leaves an acre of water 18 inches deep during one season, and in applying this water under economic conditions an acre of water six inches deep must be wasted by evaporation. The absolute duty of water is 18 inches; the possible duty, 20 inches; the practical duty, 24 inches.

EXPERIENCE SUSTAINS SCIENTIFIC INDUCTION.

2. When the last census was taken it was found that an area of about four million acres of land was cultivated by irrigation in the western half of the United States. These lands were scattered widely over the whole region in small tracts; so that the experience of irrigators in this country is already extensive and highly diversified in relation to latitude, altitude, atmospheric humidity and crop. In taking the census many other facts were collected, and among these were the amounts of water actually supplied to the lands by the farmers themselves. It was generally found that the farmers are putting more water on the land than is really necessary, and that this extra amount is usually recognized by irrigators as excessive. The excess occurs in part through evaporation and in part by overflow onto other lands not irrigated, and still another part is lost underground by seepage. The general average in practice was found to be about 30 inches. It was further found, however, that in a few places, where for economic considerations great care was demanded, the duty of water was actually brought down to nearly 20 inches. Thus the widely diversified experience of the farmer is a reasonably approximate confirmation of scientific induction. But this 20 acre-inches is sufficient only when the water is carried in watertight canals or in pipes, and the ground is thoroughly prepared for its reception, and the most advantageous methods of applying the water are used. Excluding the very exceptional cases, good practical irrigation requires 24 acre-inches of water. Any amount additional to 24 inches put upon the land is not only wasteful of water, but injurious to the crop, as will hereafter be shown.

The conclusion is thus reached that the mean absolute

duty of water for the arid region of the United States is 18 inches, the mean possible duty 20 inches, and the mean practical duty 24 inches; and all water put upon the land in excess of 24 inches is an injurious duty.

Important Qualifications.—With regard to the duty of water, as heretofore set forth, some very interesting and important qualifications should be made. The quantity of water which has been given as necessary for growing crops is for average crops, not for maximum crops. It has been found by numerous experiments that the growth of most crops can be greatly increased by providing conditions for the utilization of a greater amount of water. If the soil is underdrained and properly prepared, and the water supplied with the proper fertilizers, a much larger production can be realized than that which our farming usually secures. The water supplied to the plant is the vehicle of the materials wrought into the plant. Those who have studied this subject with great care state that the crop can be doubled, or even multiplied five-fold, by properly supplying it with water and plant food. But, under these circumstances, water supply must be increased proportionately. Suppose the farmer could control all the conditions, as the gardener can in his hothouse covered with glass, then 150 or more bushels of wheat, barley or corn could be raised on an acre of land. But 60 to 100 inches or more of water would be necessary. Again, it is found that in order to secure the maximum growth of plants, certain careful conditions of supply must be observed. Some plants will grow in water; a few cultivated plants will grow in marshes; but dry land crops will be injured by an excess of water. To such plants water must be supplied in minutely divided quantities and thoroughly aired. Soil will often contain 30 per cent or more of its weight if completely saturated, but in this condition dry-land plants do not flourish. It is found that about 60 per cent of saturation gives the best results for dry-land plants. This is the reason why over-irrigation is injurious.

Again, it is found by experiment that the growth of the plant will be checked by checking the water supply, which must be continuous to the most successful; that if checked the plant adapts itself to the new conditions, and, if afterward the normal supply is given, the plant will not avail itself of the better condition. It is also found that if the plant is urged to its greatest capacity by the best conditions during the early part of its growth, and until the grain or fruit has nearly attained its full size, and the water supply is then diminished, the yield will usually be increased and improved in quality; if the leaf growth is then checked, the fruitage is increased.

On Pruning.

We recently gave the methods now on trial in Tulare county, which amount almost to non-pruning after the second year in the orchard. The following well-known fruitmen prescribe other practices:

Mr. J. H. Flickinger of San Jose says: "I commence pruning immediately after gathering my last fruit—that is the Salway peaches, which is about the 20th of October. I prune my apricot trees first, then the prunes, and follow with the peaches. My gang of pruners generally finish their work by March 1st, and the pruning, together with my winter irrigation and thorough cultivation up to June, have so far insured me a crop each year. I have no experience in pruning apricots immediately after the fruit is harvested, but some of my neighbors who have, claim it is beneficial to do so in order to be certain of a crop for the ensuing year.

"I find that the average fruit-grower wants to produce all the fruit possible on his trees regardless of the preservation of the trees and of future crops. To illustrate: I bought of one grower 100 tons of peaches for canning, to measure 2½ inches in diameter. During the season I advised him to go over the trees once more and thin out the fruit, taking off at least one-half of it. The reply was that the trees were all right and were thinned out sufficiently. Now how many tons of peaches do you think he delivered at my factory? Only eight tons out of the one hundred tons contracted for!

"Prune trees in the Santa Clara valley will in a few years be in a bad condition if not more carefully trimmed. In my travels I find many of them that have been overloaded and whose branches are very unbalanced until some of them lie flat on the ground, and many are badly broken. If persisted in, this course will certainly damage, if not ruin, the trees for future crops, while exhausting the fertility of the soil in the production of crops of small and unsalable fruit. I contend that all fruit trees must be pruned each year to keep the trees in proper condition to bear good fruit."

Mr. John Rock of Niles, an extensive orchardist and nurseryman, gives his methods as follows: "We never prune until the leaves are nearly all off. As long as the leaves are on a tree, the sap is still active. Removing large limbs may be done during summer as soon as the fruit is gathered, but the shortening in is better done during winter when trees are dormant. Large limbs removed in spring when the tree is full of sap will show decay quicker on cuts than if this work be done during summer. We never pinch back except when there is danger of too rapid growth so the wind will blow limbs off. Apricots are more subject to it in the second or third year after planting. Newly set grafts on old trees make so strong a growth that they break down from this overweight. These should be topped as soon as they attain about two feet of growth; the cutting back will make them branch out and balance themselves.

"Opinions differ about early and late pruning. Any time from December 1st to March 1st will not affect trees much either way. Many growers in Alameda county prune their apricots and cherries during summer and think this treatment will keep such trees from gumming during the following year."

SHEEP AND WOOL.

The Shropshires Again.

As California is sharing to some extent in the growing fame of the Shropshires, readers will be interested in a paper recently read at the annual meeting of the New York Shropshire Association by the Hon. John Dryden, president of the American Shropshire Association, and Minister of Agriculture of Ontario. We give it (somewhat condensed) below:

It is plain to be seen that tastes have considerably changed. The article that was required years ago, and which at that time perfectly satisfied the demand, will not answer the purpose now. Time was when the larger the carcass, and the more lard or tallow it contained, the better it seemed to suit. One particular quality of wool has suited in times past, and now it is practically unsalable. Wherefore wisdom on the part of the producer requires that he shall continually study what is the particular quality of the article he seeks to supply, which the markets demand.

In the years that are past, when the people had no choice, the inferior article might be sold to all purchasers alike; but when such inferior article is placed in competition with better, it can have no chance for successful sale.

In sheep production we have two elements that come into our calculations—the carcass and the fleece. In years gone by, thousands and thousands of sheep have been kept in America for the fleece alone. In Canada this has never been the case, and during all the years of its history the carcass has always been considered. To-day it is practically the same the world over—both carcass and fleece must now be considered if a suitable return is to be obtained from this industry.

The question, therefore, that must be considered by every man who engages in this business is: What breed will give me in combination the best carcass and the best

fleece? Two things are to be considered in both these elements of profit. In the carcass we shall need as many pounds as we can secure of the best quality of meat that can be produced for the least outlay. For the fleece, either extreme in the quality, whether it be toward long and coarse wool, or short and finer wool, will be found to lead at one time or another to more or less reduction in profit. That quality of wool which is required for goods to be used by the masses will always have a demand, and will average the greatest profit in any given number of years.

Where can such a carcass and such a fleece be found in combination? I am not here to say that it can be found only in one particular breed. I believe there is more than one breed that can furnish exactly what I have depicted, but no breed can furnish both carcass and fleece of better quality and greater weight in proportion to food consumed than the class that this association represents.

The fact that Shropshire sheep have rapidly spread in every sheep-producing country, and are to-day holding their own against all comers among the men who breed for profit only, is in itself proof that this value actually exists in this breed.

The popularity of the Shropshire may be accounted for by two reasons. First, these sheep are found to have every desirable quality as a pure breed in that the mutton has all the qualities that the taste of the present day demands. The carcass is not noted for a large quantity of tallow, but for a large proportion of lean meat of the very best flavor. Other breeds may produce the same quality of meat of equally good flavor, but no breed will give so large a carcass possessed of these qualities in proportion to the amount of food consumed as will the Shropshire. Second, the wool is of that medium quality in demand for the production of the goods used by the masses of our people, and in the case of the fleece also the weight is greater when quality is considered than that produced by any other breed.

These are the special qualities that make this breed so desirable from a consumer's standpoint. But their excellence does not end here. The breed is equally useful when used for grading purposes on the inferior mutton-producing sheep of America.

But again. This breed might be found good in the

mutton market and good in the wool market, but if they were difficult to produce—if they must be produced at too great a cost—the producer would be inclined after all to discard them. The opposite of all this is seen to be true in the practical experience of those who have used this breed for many years. Their hardiness, their ability to stand rough treatment in almost any climate, gives them a prestige unknown to other breeds in every country where they are now raised. Their prolificacy adds greatly to the profit. Their symmetry of form and noble appearance make a flock so pleasing to the eye of their owner as to form for them an additional attraction.

Whether these sheep will continue to bear their present characteristics in the coming century will depend upon the skill of their present owners to breed them to the type that has secured for them their enviable position. It will be easy in the future to undo all this work unless the breeders of to-day seek to maintain the type that has brought these sheep into prominence.

A demand is frequently made among purchasers for a larger sheep than the original type will admit of. To meet this demand, the breeders must sacrifice, to some extent, quality for increased quantity. If this clamor is acceded to, coarseness will become prominent, and little by little the prime qualities of the Shropshire of to-day will be lost. Again, these sheep of coarser quality will undoubtedly consume much more food in proportion to the weight of carcass than the animal that is true to type; and in so doing, the profit of the producer must be reduced.

There are to-day in this breed of sheep fancy points that indicate pure breeding, and yet are of little practical value. We all like to see a head well covered with wool, and yet wool on this particular portion of the sheep is not of any great value. We all like to see a sheep having a fair degree of what we call style, and yet style may be manifest without the qualities of flesh that cause a sheep to command the best of our markets when killed. No breeder need ignore these fancy points, as to color of ear, face or legs, covering of head, etc.; but he should not, while paying attention to them, ignore the prime characteristics and essential qualities that go to make the Shropshire the foremost sheep of to-day.

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THE HOME CIRCLE.

Give the Boys a Choice.

There was John, the eldest, a noble boy,
So thoughtful and true and kind;
"A trifle too serious," his teacher said,
"For one of his brilliant mind."
But his hand was not a ready hand
To plow or scatter the seed;
Yet John must follow a farmer's life,
As 't was long before decreed!

There was Davy, the very opposite—
A lad with a merry eye,
Who hated his books and hated his school,
And thought all study dry,
Except to read of the rover's life—
A life that he fain would lead;
Yet Dave must hang up his lawyer's sign,
As 't was long before decreed!

Our farmer, he raised but sorry crops,
Our lawyer lost his fees,
And while one took to his books again,
The other took to the seas.
Now, John, he fills a parson's desk,
And his work is not in vain;
While Davy sails in as fine a ship
As ever went over the main!

Then give the boys a choice, my friend,
And let nature take the lead;
"As the twig is bent the tree's inclined,"
Has been long ago decreed.
Strong youthful blood cries out, my friend,
In one united voice,
For a right to make a way in life;
Then "give the boys a choice!"

—M. A. Kidder.

The Old Meetin' House.

We don't git out to meetin' much, we're gittin' old
an' lame,
But when we hear the old church bell a-soundin'
jest the same

As in the days when we were young, myself an' Sary
Ann,
We set out on the doorstep an' we listen all we can.

An' when it stops a-ringin' out an' all is soft and
still,

We look up to the old white church a-standin' on
the hill,

An' pretty soon like heav'nly strains above the holy
calm,

We faintly hear the organ an' the singin' of the
psalm.

The church has seen its better days, like Sary Ann
an' me;

Like us it's lost its vigor an' ain't what it used to be.
The winds that sweep across the hill have swept its
strength away;

An' now it's old an' rickerty an' fallin' to decay.

The last time we were in it, 'twas quite a spell ago,
When'er the sexton pulled the pull the house
rocked to an' fro

An' creaked in all its jints; the seat it jolted 'gin
my back,

An' once I dropped my hymn book an' it landed
with a whack

Right on to Sary's corn. "My! now," thought I,
"I'm booked."

But Sary Ann she never lisped; she only sat an'
looked.

The parson then came up the aisle, the organ 'gun
to play,

An' soon we had a sermon on the everlastin' day.

When the sun sets behind the hill an' makes the sky
all gold,

An' right thar stands the meetin' house a-loomin'
up so bold

An' lookin' like a portal to a land beyond the skies,
I sometimes feel almost 's if heaven lay right before
our eyes.

Sary an' I hev most got through an' soon will come
the day

When out beside the meetin' house we'll both be
laid away,

But oft I think, when Sary 'n I hev climbed the
heav'nly stairs,

We'll want to look down on the church where once
we jined in prayers.

—Mayme Isham.

How No. 99 Won the Record.

DON'T believe in record-breakin' runs with steamships or steam engines. It's dangerous work, and some day there'll be such big explosions on land and sea that'll cure people of this craze.

Dan Martin, the old engineer, rubbed the shining brass connecting rods of No. 99 vigorously, until they looked like a strong reflecting mirror.

"I've al'us refused to run my engines at a dangerous pace just to nake a record for the company," he continued after a pause. "I have the name of bein' the most careful engineer in the West, an' I consider that a bigger honor than if I had the reputation of bein' the one that could drive his engine the fastest. The superintendent has hinted to me more'n once that he'd like to see me break the record with old 99, but I al'us shrugged my shoulders, and told 'em that I war'n't goin' to risk the lives of the passengers for any foolish advertisin' of the road. No, sir, I wouldn't do it."

Another vigorous rub of the polished brass rod.

"Yes, No. 99 holds the record now," he

added, in reply to a query, "an' she will for some time, too, I guess. But I was speakin' of things afore she made that big run from Ellinwood to Great Bend in middle Kansas.

"Was I engineer at that time? Of course I was, an' No. 99 never put in better work. I didn't believe in record smashin' then any more than now, but I had to break the record that time or lose my life and 99, too. It was a forced trip that I took, an' I don't want to make it ag'in. No, sir, once is enough for me.

"I was ordered to take No. 99 from McPherson to Great Bend one mornin' to meet the superintendent of the road, an' he wired me to hurry up a bit. He wanted to make a quick trip down to Dodge City, where there was some trouble with railroad robbers. After he finished the orders he added over the wires, 'You'll be alone, and will have a good chance to make 99 break the record.' I smiled at this, but didn't intend to push her beyond the safety point one bit. My life and reputation was just as important whether I was alone or with a whole train-load of people behind me.

"I started out of McPherson on a gentle trot, so to speak, and when I was clear of everythin' I put on more speed. I love to ride rapidly across the country when there ain't no cars danglin' behind, an' I just let old 99 skip lively. I was goin' as fast as I thought she ought to go without runnin' any risk. It was midsummer then, and the day was pretty warm and sultry. We hardly made a breeze in our rapid flight. Jim Watson, my fireman, said he thought the air was feverish hot, an' that's just what it was. The sun seemed to glare at us like a ball of fire, and the heat appeared to be risin' from the landscape all around. There wasn't a cloud in the sky, an' it just hurt our eyes to look outside of the caboose. The long stretch of rails ahead listened like silver.

"We'll have a storm or somethin' before long," Jim says as he looked at the sky. "This heat won't last."

"I thought so, too, but I didn't give words to my ideas. We were approachin' Lyons at a swingin' gait, when a few clouds suddenly rose up in the east. They looked black in the center, and seemed to increase in size as they approached. In a short time they were joined by others, and their looks were threatenin'. They were wind clouds, and probably the beginning of a bad windstorm. When we rushed through Lyons the flagman waved his hand at us, and pointed toward the east.

"The clouds had now become more threatenin' than ever, and Jim muttered, 'A tornado, I'll bet.'"

"Shouldn't wonder," was all the reply I made.

"We swept on a little faster. I thought we might be safer to get into port before the tornado struck us. Then it occurred to me that we would be better off probably runnin' than standin' still. So I slackened speed a little an' watched the sky anxiously.

"Suddenly from the very middle of the black cloud somethin' seemed to extend way down to the earth. It looked as if the cloud had burst, an' was trailin' along the track right behind us. It was a tornado and no mistake. I knew that sight only too well. It was rushin' down upon us like a fiend. The sun was still shinin', but the fleecy clouds around it made it flood the landscape with a sickly glare.

"Say, Jim, that fellow is after us," I said as quietly as possible.

"Yes, an' it's a regular twister."

"Now, when a tornado is rushin' down upon you at the rate of 80 or 90 miles an hour, you forget all about the danger there is in record-smashin'. At least I did. There was that big, ugly-looking cloud following us with a fearful noise. It was so close that we could hear the rush and roar of it. I gave one frightened glance at its terrible center, an' then I opened the throttle of old 99. Jim began to pile coal on and shake up the fires. We were directly in the path of the tornado, and unless it veered to one side or the other, or we could succeed in outrunnin' it, we were doomed.

"But 99 responded to my touch like a horse. She snorted and puffed away as if aware of the danger behind. The wheels revolved so fast that it seemed as if they could not keep on the track. In another moment we were speedin' along at a rate that would have made me sick at any other time. But we weren't goin' fast enough yet. The horrible cloud was still gainin' on us.

"More coal, Jim, more coal!" I shouted. "We must go faster."

"Well, he knew the danger too, an' he perspired like a porpoise as he tried to get up more steam. Faster an' faster we flew. The strain on the engine was severe, but I never thought of that. I just put on all the steam we could get. We were now holding our own with the tornado, but it was still a

race for life or death. If anythin' should give way the storm would be down upon us in an instant. We were really balanced between two great dangers.

"If we can reach Great Bend we'll be all right," I said to Jim, as we both looked anxiously at the pursuin' cloud. "There's a turn in the road, an' we'll get out of the path of the tornado."

"But we must cross the bridge first," Jim said in reply.

"Yes, but we can't slacken our speed."

"I knew what he was thinkin' of. The bridge across a large arm of the Arkansas was only a wooden structure then, and it was not over-strong. To rush across it at our present tremendous speed might cause a catastrophe. But the bend in the road did not occur until after the bridge was crossed. Until we reached that point the road was as straight as a bee-line.

"Neither one spoke after that. We alternately watched the pursuin' tornado and the track ahead. We just held our own and had no time to spare. If we lost one minute the horrible fiend would be down upon us.

"The bridge! the bridge is ahead!" suddenly shouted Jim, and I thought his face turned a shade paler.

"I could not believe it at first. I thought that the bridge was miles beyond, and it was hard work to realize the distance we had covered since the tornado first alarmed us.

"Now for it," I muttered to Jim. "Here goes!"

"I opened the throttle. Then No. 99 gave a loud, prolonged, shrill screech that might have been her death-knell. The next instant she reached the wooden bridge, and thundered upon it like the rumblin' of thunder. The structure swayed and trembled under the weight. When we reached the middle it creaked and cracked, and seemed ready to give way at any moment. But we passed the middle safely, and the other shore was almost reached.

"See! see!" Jim shouted.

"I looked behind and shuddered at the sight. The tornado had reached the other end of the bridge, and, as if angered at the prospect of our escape, the mighty wind was rippin' and tearin' up the wooden structure as if it was made of straw. We touched the other side none too soon, for the whole bridge began to sway, and then toppled over before the furious onslaught of the wind.

"But in another moment we reached the bend in the road and rushed out of the path of the tornado. We slowed up a little then and watched the baffled fiend hurry past us, carryin' death and destruction with it. We both gave a sigh of relief, and then turned to check the terrible speed of our iron horse.

"We brought her to a standstill at Great Bend station with difficulty. It seemed as if she hated to stop, and she puffed and panted like a living creature. On the platform stood the superintendent.

"Why, hurrah, Martin, you've broken the record all to pieces," he said, slappin' me on the shoulder. "Since the agent reported you at Lyons, why, you've averaged eighty-two and a half miles. Great Scott! man, that's a wonderful run!"

"Yes, it was," I said.

"I was too tired and nervous to explain further then. I was satisfied to think that we were home safe. It was the most wonderful run I ever made, and that's how old 99 hold's the record.—George Ethelbert Walsh in Home and Country.

The Name of California.

Thomas E. Slevin, LL. D., recently delivered an unusually interesting lecture on the "Origin of the Name California" before the Geographical Society of the Pacific at Union-square Hall. Mr. Slevin first proceeded to explain the various alleged origins of the word California. These he divided into three classes, the most plausible of which was the supposition that the name was derived from a misunderstanding of some words used by the natives when first addressed by Cortez or one of his followers. This was satisfactorily explained away and the speaker then told in a pleasant manner what he conceived to be the only legitimate conclusion to be drawn from the various explanations of the origin of our State's name.

The word California was first used in a work on Spanish chivalry published in 1510. This work was an alleged history of the adventures of "Amadis of Gaul and his son Esplandian." It was of great length and divided into a large number of short stories, one of which was the manner in which "Callia, the Queen of the island of California, a country inhabited only by women, who lived as Amazons and had gold without end," saved Constantinople from an attack by the Persians. This story, as well as others, was widely read by the people of Spain, and by many regard-

ed as fact. Among the staunch believers were the members of the Cortez expedition, who, upon landing upon the peninsula of Lower California, imagined they were on an island which, owing to its apparent riches, they named after the fable isle, and Cortez himself called the new country "California."

Wooded Four Sisters.

Living in the mountains of Tennessee, near Umfreesboro, is a family which has a singular history in a matrimonial way. The father owns a little farm and four daughters, or did own the latter. A man named Phillips about fifteen years ago married the eldest of these daughters, and, after a few years of married life, the lady ran away with the husband's sworn enemy. He procured a divorce from her and wooed the second sister and took her home, but the next day the woman turned up at home and said she wouldn't live with Phillips, and after a time succeeded in getting free from him.

Then the third sister, according to the story which has just been published, undaunted by what had gone before, married the husband of her two sisters. Soon after this the fellow was sent to the penitentiary for an offense that kept him there three years, and when he came out he found that his wife's fickle fancy had strayed while he was absent and had fixed itself upon a neighbor, John Callahan. By law she was entitled to a divorce from her husband, as he was a convicted felon, so, getting it, she married her lover.

In the meantime the first wife had found that the man with whom she had eloped would not marry her after Phillips had divorced her, and returned home. Then Mrs. Callahan wandered back to her father, for her husband No. 2 could not or would not support her. So in this way the old man had once more his four daughters on his hands and Phillips was still free.

The youngest daughter was now about 18, and she also fell a victim to the fascination the man Phillips appears to have exerted over them all at first, and, becoming infatuated with him, consented to marry him. Phillips went to the father for the fourth time to ask for a daughter's hand, and was told that he might have her on condition that he kept her.

Phillips promised and the ceremony was to take place the following night, when the ex-wives growing jealous, armed themselves and swore the ceremony should never take place, so that Phillips rode to town and swore out a warrant for the sisters, telling of their threats. The women were sworn then to keep the peace, but Phillips thought it prudent, however, to run away with his bride to Kentucky and marry her there. This time his matrimonial venture seems to have terminated happily, for he has three children and is prospering.

Gems.

No man who needs a monument ever ought to have one.—Hawthorne.

Be thou the first true merit to befriend;
His praise is lost who waits till all commend.

—Pope.

Everybody likes and respects self-made men. It is a great deal better to be made in that way than not to be made at all.—Holmes.

There is a care for trifles which proceeds from love of conscience and is most holy, and a care for trifles which comes of idleness and frivolity and is most base.—Ruskin.

Have you ever observed that we pay much more attention to a wise passage when it is quoted than when we read it in the original author?—Hamerton.

There is this important difference between love and friendship—while the former delights in extremes and opposites, the latter demands equalities.—Mme. de Maintenon.

One of the most important, but one of the most difficult, things for a powerful mind is to be its own master. A pond may lie quiet in a plain; but a lake wants mountains to compass and hold it in.—Addison.

Let man but speak forth with genuine earnestness the thought, the emotion, the actual condition of his own heart, and other men—so strangely are we all knit together by the tie of sympathy—must and will give heed to him.—Carlyle.

Be very slow to believe that you are wiser than all others. It is a fatal but common error. Where one has been saved by a true estimation of another's weakness, thousands have been destroyed by a false appreciation of their own strength.—Colton.

In vain do they talk of happiness who never subdued an impulse in obedience to a principle. He who never sacrificed a present to a future good, or a personal to a general one, can speak of happiness only as the blind speak of color.—H. Mann.

Hints to Housekeepers.

Clean piano keys with a soft rag dipped in alcohol.

Salt fish are quickest and best freshened by soaking in sour milk.

Warm milk used as a wash at night makes hard, coarse or rough skin soft.

Ripe tomatoes will remove ink and other stains from white cloth; also from the hands.

Take egg stains from silver by rubbing with a wet rag which has been dipped in common table salt.

To beat the white of eggs stiff with ease, they should be cold, with a very small pinch of salt added.

Cut a piece from the top of old kid shoes and insert it inside the iron-holder you are going to make.

Add two tablespoonfuls of kerosene to the pail of water with which you wash grained or other varnished furniture.

Make boiled starch with a weak soapsuds made of white soap instead of with clear water, and you will have no difficulty with its sticking.

All floor and whisk brooms should be thoroughly wet in scalding hot brine before using them. It will effectually prevent the straw from breaking.

Egg shells are somewhat porous, and, like butter and cheese, absorb unpleasant odors. Therefore, eggs should be kept in a sweet, clean, cool place.

Beat an egg thoroughly in a bowl and add one teacup of cold water to it. Use enough of this to thoroughly moisten coffee when making it. Keep in a cold place and waste no more eggs by drying.

Do not wring wool underwear through a wringer. Use the hands and shake it thoroughly before drying. When perfectly dry, fold it smoothly, but do not iron. See if the odor is not more agreeable than when a hot sad iron has passed over them.

Granulated sugar is the purest brand, consequently the cheapest. Do not use quite as much as of other kinds—one-half inch less for a cupful. Cake batter made with granulated sugar requires longer beating than usual, as the sugar is longer in dissolving.

Belting cloth is a most charming material for table mats, runners and doilies. They will not be durable, but, with proper care, they will last a reasonable period, and embroidered with white floss they are a thing of beauty and a joy—not, indeed, forever, but as long as they do endure.

Baby flannels, to rid them of the sulphur smell, and also to give them their first shrinkage before they are put on the bands, should be put into a basin and have boiling water poured over them, and should be allowed to lie in it undisturbed until it is quite cold. Then shake, stretch and fold smoothly to make them straight and even and hang them out. Take them in while still damp, then smooth, and in half an hour iron with a nearly cold iron.

Historic Battlefields.

At Cannae, where the Romans sustained the worst defeat they ever experienced, there were 140,000 men on the field, of whom 52,000 were killed.

At the battle on the Thrasymene, where Hannibal defeated the Romans, there were 65,000 men engaged, of whom 17,000 were killed.

At Gettysburg 140,000 men fought on the Union and Confederate sides, of whom 8000 were placed hors de combat.

After the surrender of the Turks at Plevna the Russians took possession of \$17,000,000 worth of arms.

At Borodino 250,000 French and Russians fought, and the dead and wounded numbered 78,000.

During the retreat from Moscow the French lost or threw away over 600,000 muskets.

At Waterloo there were 145,000 men on both sides, of whom 51,000 were killed or disabled.

There were 402,000 men on the field of Sadowa, of whom 33,000 were killed or disabled.

At Austerlitz 170,000 were engaged and the dead and wounded numbered 38,000.

At Gravelotte 320,000 men were engaged, of whom 48,000 were killed or wounded.

Morengo called 58,000 men into action, of whom 13,000 were killed or crippled.

At Bannockburn 135,000 men fought, and 38,000 were killed or wounded.

"Go get me some matches," the Baron ordered his valet, "and see you try them before you bring them. The last were no good." The valet goes and returns. "Well?" "They are all good, sir; I tried them every one."—Boston Transcript.

Do Not Cough.

In all bronchial affections the paroxysms of the cough should be placed as far as possible under control of the will, says the *Youth's Companion*. The old idea that disagreeable sensations in the throat indicate the presence "something there which ought to come up" has been entirely displaced by the more rational view that the continued and prolonged efforts to expel that "something" are often productive of more mischief than would result from its being allowed to remain.

There is attendant upon every disease of the bronchial tubes a greater or less amount of mucus, which exudes from the membranous lining of the tube. Of course, there are the accompanying signs of inflammation—heat, pain, swelling and redness; but it is the mucus exudation which is for the most part responsible for the disagreeable sensation which we instinctively attempt to alleviate by coughing.

Now it is certain that, in a great majority of instances, where the general health of the patient is not attacked, this exudation undergoes what is called resolution; that is, it is re-absorbed through the fine network of the blood, where it is taken care of, and complete recovery is effected. On the other hand, let us suppose that we do not wait for the resolution to take place; but that, on the theory that every part of the exudation should be expelled as being of a poisonous nature, we strain to exhaustion every muscle of expiration, and, in fact the whole system. What follows?

We may have accomplished our immediate object, or the seat of the inflammation may have been out of reach. In either event, if we could see the point at which our efforts had been directed, we should discover that they had not been productive of the results anticipated. Instead of the inflammation being in any way allayed, we should find that an effect had been produced similar to that which follows scratching an itching sore. The irritation has for a moment been relieved, but it is only a question of time when it will return with renewed energy.

The habit of endeavoring to expel more of the exudation than will come away with gentle and infrequent coughing is an exhausting and idle one.

A Speedy Cure Promised.

Betty—George intends to have his own way in everything when we are married.

Grace—Why are you going to marry him, then?

Betty—Just to relieve his mind of a false impression.—Brooklyn Life.

The Children's Thought.

The lesson hour was nearly past
When I asked of my scholars seven:
"Now tell me, each one please, in turn,
What sort of a place is Heaven?"

"Oh, meadows, flowers and lovely trees!"
Cried poor little North street Kitty;
While Dorothy, fresh from country lanes,
Was sure 'twas "a great big city."

"Bessy, it seemed, had never thought
Of the home beyond the river;
She simply took each perfect gift,
And trusted the loving Giver."

Then up spoke Edith, tall and fair,
Her voice was clear and ringing,
And led the Easter anthem choir:
"In Heaven they're always singing."

To Esther, clad in richest furs,
'Twas a place for out-door playing;
But Bridget drew her thin shawl close,
For "warmth and food" she was praying.

The desk-bell rang. But one child left.
My sober, thoughtful Florry;
"Why, Heaven just seemed to me a place—
A place where you're never sorry."

—Willis Boyd Allen.

Bits of Fun.

"Did you ever get back the umbrella you lent Robinson?" "Yes." "How." "I borrowed it again." "From Robinson?" "No; from the man he lent it to."—Amusing Jour.

A good old lady said to her nephew, a poor preacher, "James, why did you enter the ministry?" "Because I was called," he answered. "James," said the old lady anxiously, as she looked up from wiping her spectacles, "are you sure it wasn't some other noise you heard?"—Lynn Item.

Wife (drearily): "Ah, me! The days of chivalry are past." Husband: "What's the matter now?" "Sir Raleigh laid his cloak on the ground for Queen Elizabeth to walk over, but you get mad simply because poor, dear mother sat down on your hat."—New York Weekly.

One of Washington's bright women was present while her husband discussed the financial situation. "I must confess," said he, "that the money market has worried me a great deal." "It wasn't the money market that worried me," observed his wife. "What was it?" "It was the market money."—Washington Star.

"What did the United States Senate meet to do?" he asked of the audience in the corner grocery store, while a wave of wrath rushed into his face; "what did they meet to do?" "To chin," said a little lame man, who sat away back on a soap box. And there was no more said.—N. Y. Press.

DOMESTIC ECONOMY.

THIN BISCUIT.—One pint of flour, one wineglass of milk, one tablespoonful of lard and butter mixed and one egg. Beat the egg lightly and pour it on the flour, then the milk and, lastly, the butter and lard. Work it well. Break off small pieces the size of a marble, roll it out as thin as a sheet of paper and sprinkle with dry flour as you roll them, which will make them crisp. Stick with a fork and bake in a quick oven.

APPLE SNOW.—Three large tart apples, the whites of three eggs, half a cup of powdered sugar and one-half a cup of jelly. Wash, core and quarter the apples and stew them until tender; then drain them and rub them through a fine sieve. Beat the whites of the eggs to a stiff froth, add the sugar, and beat until the sugar is thoroughly incorporated; then add the strained apple and beat until it is like drifted snow. Pile lightly on a glass dish, garnish with the jelly and pour over it a boiled custard, which you make from the yolks of the three eggs and a pint of milk.

FRIED TOAST (A DESSERT).—Cut a loaf of baker's bread into slices an inch thick and toast them a light brown. Pour over them a rich custard seasoned with wine, nutmeg and cinnamon, and let them soak in the custard three or four hours, then take them out and fry them in hot butter a nice brown. Take what is left of the custard and add to it wine and melted butter sufficient to make a rich sauce. Put into it a pound of stoned raisins. Let it stew some time, and just before sending it to the table pour it hot over the toast. Instead of custard, a pint of cream, highly seasoned with nutmeg, cinnamon and sugar, may be used.

BOILED CABBAGE.—Remove the waste leaves, divide the cabbage into quarters, wash in cold water, drain and throw into fast-boiling water, add a pinch of soda to remove the odor, and boil rapidly until done, which will take an hour or an hour and a half, according to the size. Add salt to the water. When done, drain it thoroughly in a colander, pressing it to remove every drop of water. Chop it fine. Put into a saucepan a lump of butter, let it melt, and add a little flour (about a teaspoonful); stir till smooth. Add the chopped cabbage, season with salt and pepper, stir all together over the fire until hot, then add a little vinegar and serve.

Rivals: "The last thing Fred did was to kiss me." "I should think it would be!"—Life.



DURING hard times consumers cannot afford to experiment with inferior, cheap brands of baking powder. It is NOW that the great strength and purity of the ROYAL stand out as a friend in need to those who desire to practise Econ-

omy in the Kitchen: Each spoonful does its perfect work. Its increasing sale bears witness that it is a necessity to the prudent—it goes further.

N. B. Grocers say that every dollar invested in Royal Baking Powder is worth a dollar the world over, that it does not consume their capital in dead stock, because it is the great favorite, and sells through all times and seasons.

PATRONS OF HUSBANDRY.

Random Thoughts.

By A. P. ROACHE, W. M. S. G. of California.

Charity and parity are what the people hold,
But the chap who has the chink, you know, is never
in the cold.

The Patrons of Husbandry from all quarters are waking up in earnest. Hard times and fleeting profits have fully convinced them that fraternal unity is their only safeguard if they would protect themselves from the rapacity of powerful organizations of vast capital and small principles.

Partisanship and fraternity can never make peaceful yoke-mates any more than can church and State. A knowledge of these facts should impel farmers to unite with the grange—the only exclusively farmers' non-partisan, non-sectarian organization with a national head in existence, one which deals directly and specifically with all business connected with the farm, and which leaves every one free to worship his God in accordance with the dictates of his conscience and to vote with the party that suits him best.

How to revive a grange is a question that is being asked by many enthusiastic sisters and brothers who are anxious and eager to lend a helping hand in the great work of advancing the grange cause, but are undecided as to how or where to begin. Of course, circumstances alter cases, but the following will usually bring success: First revive yourself thoroughly and determine not to be disappointed at any failures, for you will meet many of them. Call on the few members of your grange, or, if that is not feasible, write them a personal letter, telling them that a very important matter affecting the life or death of the grange, all other farmers, and especially themselves and family individually, demands that a meeting be held on a certain date.

You are pretty sure to get a quorum if the grange possesses one, if not go on just the same. Tell the few members who appear that the tillers of the soil are in great danger, that ignorance and isolation mean ruin, and that you appear before them to apprise them of their danger and afford them means of escape. Tell them that you have taken a solemn oath before God and man to sustain, support and maintain that which can alone save them from misfortune and loss, the grange; and that, while they have taken the same obligation, you ask their assistance and best efforts in its behalf; but that if they will not assist, you will go out single handed and fight the good fight alone, and that particular grange should not die as long as you could raise voice or hand to defend it. Nine times out of ten your enthusiasm will be contagious and result in obtaining offers of help. Then call a meeting for some early date, get a promise from each one present that at the next meeting they will do or say something, and that they will try to get another member to come with them. By this time your own mind will be full of suggestions which you can work out at the next and subsequent meetings. Now call on your local editor, or if you have several, on all of them, for you must treat all fairly and alike; tell them you are about to engage in something mutually beneficial to yourself and them—the upbuilding of the cause of agriculture, through its sole representative, the grange; that you ask their moral support, and that they assist you to the extent of publishing some short articles you will send them. If approached in this manner 99 out of 100 will meet you half way. Now comes a test of your mettle. Be particularly careful not to abuse your privilege. Don't send in advertisements, political speeches, religious or national controversies, or long articles of any kind, especially on grange subjects. You have no more right to ask that the editor give you his time, space and paper, not to mention labor of his employees—those things by which he usually makes a living—without remuneration, than he has to ask for your farm and implements, without paying for them, in furtherance of some plan he desires to execute. Write short, well-bolled-down articles on any subject of general interest in your community, always weaving the grange into them somewhere. Avoid sameness, though that is hard to do; pay for your advertising and your articles will never be refused. If you have intelligently proceeded along this line it will soon create a healthy inquiry in regard to the grange and its purposes. Meet the demand by sending to headquarters for the necessary documents; select the names of a number of the best farmers and mail them one of these papers with a short, polite note asking them to examine it fully. By this time your grange will have met and arrived at the conclusion that it is waking up, if you

are there to inspire it. Now secure a few candidates (four or five will answer) for initiation. In doing this get the best names; don't make any promises you can't fulfill. The grange has accomplished good things enough to induce any farmer to join it, and these you must truthfully point out without inventing anything extraordinary. When your class is ready, send for any State or county deputy, or any officer of the State Grange you prefer, to initiate the class; all it will cost you is a postal card. Previous to conferring the fourth degree notify all eligible farmers that at a certain date there will be an open meeting of your grange, to which they and their families are invited—a Harvest Feast, or, better, a literary entertainment.

Have your deputy present, to explain the aims and objects of the order. Don't have your programme too long; an hour and a half is plenty. Have a good committee posted through the assembly, with pencils and applications ready, and the moment the last song is sung let them politely and firmly, yet with importunity, request the signature of names, and the payment of fees, if possible. This will usually result in obtaining a goodly number of names and widely advertise the affair, after which we consider that the fire is well kindled and only needs a little more draft, in the way of time, to make it fairly blaze. Don't forget that on the committee to secure names, one bright good-looking sister is worth ten ugly burly brothers. Leaving the grange at this stage, if it has been formed of the proper material, it is prepared to go ahead and prosper.

There will be a special meeting of the Executive Committee of the State Grange on February 20th, at 10:30 o'clock, in San Francisco, for the purpose of arranging for the "California Grange Congress" which meets on the 13th and 14th of April, and other important business.

A Threat or a Text.

TO THE EDITOR:—In the RURAL of February 3d the worthy master of the State Grange threatens to expose me if I remain silent. Now, every modest man dislikes an expose and will make an effort to prevent it. He says I have been telling what the grange has done for me, but that I fail to tell what I have done for the grange. In the famous speech of Lord Clive when being tried for robbing the Indian princess, he said: "When I remember my opportunities I marvel at my moderation."

Those are my sentiments with a slight alteration. When I recall the fact that I served two years as master and four years as lecturer of the State Grange of California, remembering my opportunities, instead of receiving more I marvel that I did not give more. When we go to a tailor for a suit of clothes we let him take the measurements, then if there is a poor fit we hold him responsible. When I was elected master of Santa Rosa Grange I let them take my measure for a grange suit. I accepted the suit, but thought at first that it illly become me. I have worn it out and would much rather some one else would tell how it wore and looked than myself.

In the New England States they have guide boards at the crossing of nearly every road, and I have seen one about fifteen miles from Boston that has stood there 100 years. It was a granite slab, and the letters and date were as clear as they were when first cut. On the boards are painted the name, the miles, and a hand pointing the direction. The passing traveler does not criticize the board for its architectural beauty or design, but simply looks for the information contained thereon. We look upon the State master as a sort of rural guide board; the more crossings the more boards and the plainer the direction.

There is one place in St. Paul where there are seven corners, and it requires seven guide boards.

I fear that I used skim milk or white chalk in lettering some of the guide boards that I set up, therefore I want to urge our present master to use the best of boiled oil and white lead in doing his lettering.

It would be egotistical on my part to attempt to tell what I have done for the grange. I have traveled over a good many fertile fields and have dropped seed here and there, but what quantity and quality was the crop I cannot say.

Most every one has influence in society for better or for worse. We are forming opinions and moulding character when we least expect. The argus eyes of our little ones are ever upon us, and their plastic natures are susceptible of indelible impressions, that will come forth in the future for evil or for good. The widow's mite was appreciated just as much as that from he who gave in abundance. I think nothing more

is asked of us than to give according to our means and ability.

I have no regrets for the time and means that I have devoted to the grange. The only regret that I could possibly have is that I have not accomplished as much for the order as I would have liked to. No order could be more charitable for my short-comings than the grange has been to me; none could be more harmonious; and I shall ever be grateful for the valuable assistance that the members rendered me in my official capacity.

DANIEL FLINT.

Are Farmers Farmed?

TO THE EDITOR:—When Secretary Morton in his Chicago speech gratuitously insulted the farmers of the country by his petty sneers and insinuations, that portion belonging to the Grange fairly bristled with indignation, and many mounted the rostrum and not only successfully refuted his charges but carried the war into Africa and fairly convicted the Honorable Secretary with having used the Government franking privilege in sending through the United States mails personal circulars.

They placed the Honorable Secretary on a spit and not only roasted him, but unless he possesses the fabled characteristics of the salamander he must be pretty well cooked. Then there were other grangers less gifted in oratory who took up their pens and proceeded to lift the scalp (metaphorically speaking) of the Honorable Secretary, that the light of truth might enter his brain uncontaminated with the virus of a disease which, when found among cattle, is commonly called "big head." It has been ascertained that this complaint is found to be quite as incurable in the biped as in the quadruped, and the only relief the farmers may hope for is the official demise of the one and the natural taking off of the other.

Before following the footsteps of my predecessors of the pen, and hang the Secretary's scalp to my belt, it occurs to me that it would be well to examine for a moment one of the charges the Secretary made, that the farmers were being farmed, and if found wholly or only partially true, credit should be given where credit is due.

The writer has heretofore had occasion to call the attention of grangers to the shortcomings of the National Grange, to show that through its extreme conservatism it had fallen into a rut, and, like the horse attached to a lever constantly going round and round, in a well beaten rut.

Wedded wholly, as it is, to the formality of meeting annually, appointing committees, reading reports and adjourning without taking a step in advance of the preceding meeting, has filled the hearts of thousands of grangers with discouragement and disgust, as is evidenced by the fact that nine States which had heretofore been represented in the National Grange were without representation at the last meeting.

The last session of the National Grange was no improvement on its predecessors. Like them, long reports were read, mostly on subjects as foreign to the vocation of the farmer as would be the deciphering of the hieroglyphics taken from an Egyptian obelisk.

The most vicious of all schemes presented was one called "The Investment and Loan Association," advising farmers to become bankers, with, in most farming communities, the important factor, money, left out, if it depended on surplus cash in farmers' pockets. The report is filled with sophistry, delusion and false hopes, and heaven help those farmers who attempt to put the scheme into practice.

We have had an abundance of experience in California in efforts to transform the average farmer into bankers and merchants, and out of possibly 100 of such experiments not a single one was successful. In each case where banks and mercantile establishments are owned by farmers they were compelled to employ expert bankers and qualified merchants to win success. In holding out these delusive hopes is it an effort to "farm the farmers"?

For some years past the National Grange has made many efforts to collect by voluntary subscription twenty or thirty thousand dollars to build a grange temple in Washington. The object is a worthy one, but the manner of raising the funds, when the National Grange has an abundance of money at its disposal for that purpose, may be susceptible of various constructions. Could this be construed into an attempt to "farm the farmers"?

If, as is charged through the newspapers, the defeat of Leonard Rhom for master and Mortimer Whitehead for lecturer was purely on the ground of their being bimetalists, it marks the beginning of the end, for while it is possible for the single-standard gold men

to capture the National Grange and make it subservient to their ends of making money dear and the products of the soil cheap, they never can control the people of the United States, who will triumph in the near future, with gold, silver and treasury notes floating at the masthead. No; nobody suspects this to be an effort to "farm the farmers."

The National Grange is the head of the order and to it we have been accustomed to look for recommendations and suggestions of a practical kind—something the average farmer can grasp and utilize; but, instead, we have been fed on taffy, on visionary and impractical schemes, on long and (sometimes) able reports from committees, and on all sorts of subjects for all sorts of people.

Our National Grange is capable of doing better. Why don't they? Gentlemen of the National Grange, get down off of your hobby-horses. Stop blowing soap-bubbles for grangers to grasp at. Pull yourselves out of the deep rut of decay and death; you have been too long submerged in it. Get in touch, yea, in sympathy with the toiling, horny-fisted granger, and, our word for it, there will be no dormant State Granges nor will the charge again be made that "the farmers were being farmed."

AMOS ADAMS.

San Jose, Feb. 10, 1894.

From Pescadero.

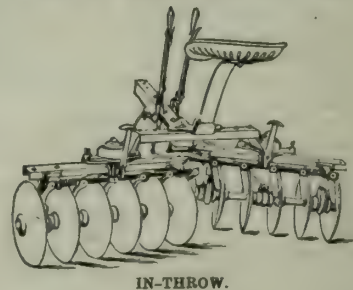
Emily A. Leighton, the regular correspondent of Pescadero Grange, writes under date of the 11th inst. that storms have interfered somewhat with Grange meetings during the past month, but this indicates no lack of interest, for on the 3d inst. there was the usual full attendance. The chief interest of that meeting was a discussion of the question, "Does Industry Need Protection?" The correspondent says:

The discussion was taken part in by Bros. Smith, Hayward, Taylor, Leighton, Sister Stimpson and the worthy master. It was plainly to be seen that there was a difference of opinion among those who spoke on the subject, but the final conclusion was the adoption of a resolution that "It is the sense of Pescadero Grange that the protection of industries should be encouraged so far as it protected labor."

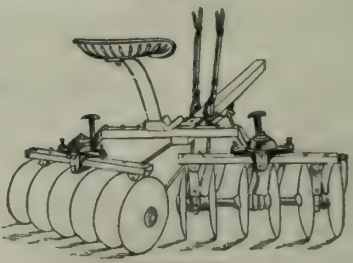
A communication from the secretary of the State Grange was read by our secretary in reference to the Grange Congress to be held the 13th and 14th of April at the Midwinter Fair. I have no doubt but what several of our members will be present on that occasion.

We are having a great deal of rain. The ground is thoroughly soaked, consequently farmers are waiting for fair weather to enable them to finish their seeding. The Pescadero Creamery Company is now making 2500 pounds of butter per week. A creamery was built at San Gregorio, six miles north of Pescadero, last fall, and another one at Half Moon Bay, farther up the coast. This part of San Mateo county is now prepared to furnish Eastern visitors to the Midwinter Fair with good, wholesome, sweet butter that cannot be excelled anywhere in the State.

LION REVERSIBLE Steel Frame DISC HARROW.



IN-THROW.



OUT-THROW.

BAKER & HAMILTON,

SAN FRANCISCO.....SACRAMENTO
Sole Agent for California, Arizona and Nevada.
Write for Special Circular.

AGRICULTURAL NOTES.

CALIFORNIA.

Butte.

Oroville Register: We understand that it is the intention of the owners of the Parrott grant to plant 140 acres to fruit this winter. The whole tract will be planted to olives, but the trees will be set 50 feet apart and shorter lived trees will be planted between the olives, so that some use will be had of the ground until the olive trees come into bearing. Peaches, cherries, apricots, prunes, etc., will be planted for the purpose named.

The **Palermo Progress** says that Mrs. Dr. Benjamin of this town has 240 varieties of roses.

Fresno.

Reedley Exponent: I. H. Thomas of Visalia, by invitation, gave a brief account of a method of handling deciduous fruit trees in Tulare county, which is being widely experimented with. Mr. Thomas cuts back at planting to about eight or ten inches from the ground; when the shoots of the first summer's growth reach a length of about 14 inches, he pinches off the terminal buds. The after growth of the same summer he allows to run out as far as it will and the following winter cuts it back rather short. After that the tree is allowed to throw out as long shoots as it likes, and no more pruning is given except to thin shoots; no cutting back or shortening in are practiced. The result is that the tree goes early into fruit, the wood growth is checked, the long willowy limbs arch outward, somewhat in umbrella form, and are liable to sustain their weight of fruit by touching the tops of their limbs upon the ground. Mr. Thomas Jacob of Visalia was also called upon, and he stated that some such practice as adopted by Mr. Thomas and others seemed well adapted to the conditions in this part of the State. He does not pinch the first summer, but cuts back in two winters and then lets the tree have its own way. The orchards handled on this system are still young—not old enough to demonstrate the value of the method in the long run, but for early and effective fruiting the method is effective. The future must demonstrate whether trees thus treated will be long lived and satisfactory during a term of years. The method is followed with prunes especially, although to some extent with peaches also.

Kern.

Bakersfield Californian: A. N. Towne owns two sections, comprising in all 1280 acres, of land out on the Weed Patch, which he is improving regardless of expense. The land was originally as level as a floor. It has been cleared of all sage brush and weeds and now stretches out as handsomely as any piece of land under the sun. The system of canals, distributing ditches, drops and head gates is simply perfect and now water can be carried upon or withheld from any part of it at will. Quite a force of men have been employed upon the job during the winter and now the land is all ready for productive crops.

Kings.

Hanford Journal: Wheat is now worth 77 cents in this market. Notwithstanding this fact, a large acreage is being sown this winter. The Grangers' warehouse is now shipping out a considerable quantity. The writer was shown the returns from a shipment of 9300 pounds of wool to San Francisco last week. The selling price was five cents a pound, and the expense of sale, including the agent's commission of ten per cent, was \$113.

Orange.

Anaheim Gazette: About one year ago the well-known firm of W. H. Maule of Philadelphia offered a premium of \$100 for the largest and best onion grown from a particular variety of seed which it was selling. Mr. James Moss of Westminster bought some of the seed and raised some very handsome onions. When he harvested his crop he selected, not the largest, but the most perfect one, and forwarded it to Mr. Maule, who sent Mr. Moss a draft for \$100 as the premium for the largest and best onion grown in the United States. This onion weighed 4 pounds and 13 ounces. This speaks volumes for the soil of our sister town.

Placer.

Newcastle News: The Newcastle Fruit-Growers' Union has perfected its organization. It consists of J. A. Robinson, Geo. L. Threlkel, W. R. Fountain, J. G. Boggs, Geo. W. Threlkel, J. Holbrook, J. M. Francis, N. T. Smith, Chas. Carlson, and P. Halborn, all prominent and successful fruit-growers in this district, and combined make a very strong company. The officers of the new union are as follows: Geo. L. Threlkel, president; J. G. Boggs, vice-president; J. Holbrook, treasurer; J. M. Francis, secretary. The directors are Geo. L. Threlkel, J. G. Boggs, J. Holbrook, J. A. Robinson, and W. R. Fountain. The fruit house will be located in Newcastle, and they will do exclusively a wholesale business. They will be ready for this year's trade.

San Diego.

The Chula Vista Fruit Association has been organized to promote the interests of its members as fruit-growers; to cure, buy, pack, store, ship, sell and market fruits and products of fruits; to secure the benefits of system and organization in the prosecution of the said business, and to participate with other similar corporations, if necessary, with that object in view. The capital stock is \$1000 in shares of \$1 each. The five directors are Henry Gulick, Jr., J. E. Boal, Payne Brown, Frank Madison and William Funk.

San Diego Union: A delicious pineapple has been presented to the Union by Riley R. Morris-

son, grown in his experimental garden in this city. Mr. Morrison has experimented with growing the pineapple in the open air in this climate, and has demonstrated that the hardy varieties of the fruit are as much at home here as anywhere. He urges fruit-growers to study the fruit and plant it here, giving figures showing the large profit to be derived from it. Several fine plants are now in bloom in Mr. Morrison's gardens.

San Bernardino.

Ontario Record: The following returns on several crops of potatoes in this section will prove of interest as showing what can be raised while waiting for the orchard to come into bearing. Cucamonga is a famous potato country, and one of the largest growers is H. L. Salsburg, whose crop this year will be nearly 8000 sacks from 75 acres. Dr. E. W. Reid will net about \$125 per acre from his crop this year. W. B. Ewing of Rochester reports 160 bushels of potatoes from 1½ acres, and several others will do as well. The ruling price is 90 cents a sack.

San Joaquin.

Lodi Sentinel: Messrs. Burr and Atkinson of Pleasanton, managers of the Alvarado Beet Sugar Factory, were in Lodi this week for the purpose of seeing what the prospects are for raising the sugar beet here. * * * These men say that if the bounty-destroying law becomes a law absolute, it will ultimately destroy the entire industry in this State, and that they cannot take any contracts for beets to be raised here, for fear that the bounty law will be annulled. They would gladly let go the contracts they now have in other places if they could do so. They were well pleased with our county, and say it is just the place for sugar beets; and but for the impending blow at the sugar bounty, they would have contracted for several hundred acres of beets here, which would have netted our farmers from \$50 to \$150 per acre if the yield should be equal to that of other places. These men are going to send up a lot of beet seed to Mr. Peach, and desire that the farmers shall plant very liberally of them, so that if the bounty should remain, there will be no need of experiments next year. The beets will not come amiss to the farmers whether the factory wants them or not, for they are good for cattle and hog feed. All who desire seed should call at once on Mr. Peach and get it, for the seed must be planted in this month. One of the gentlemen will be back in about two weeks to give instructions and to see how planters are getting along.

San Luis Obispo.

Shandon letter in San Luis Tribune: Plowing has been good and more work has been done with less rainfall this winter than ever before. Just think of it! Only a little over two inches of rain, and that in half-inch showers, and the whole country seems to have been turned over for seeding, and still the good work goes on; but in some localities rain is needed before much more can be done. As it is, there is a vast amount of land scattered from here to Carissa plowed and seeded that was never cultivated before, and, with what has been in cultivation, makes a crop of immense proportions, and we can only hope that the yield will be satisfactory. At present it looks favorable.

Santa Barbara.

Argus: A. M. Boyd, of the Rancho Los Olivos, has just finished picking the last of his olives, the choicest ones of this year's crop. Mr. Boyd's trees produced this year several tons of olives of a splendid size and quality, and provided he has his usual success in pickling (his pickled olives last year being by far the finest in the county and unsurpassed in the State), he will indeed have reason to expect a great future for the olive industry. Mr. Boyd has already had several offers from Santa Barbara and San Francisco houses to handle his crop this season.

The Santa Maria Times reports an interview with Mr. Harry Marsh, who is in a close relationship to the creamery business in that neighborhood. Mr. Marsh says that creameries are of much more benefit to a small dairy than a large one; that is, it is expensive for large dairies to haul so much milk to and from the creamery, and that they will eventually have either a private creamery of their own, or at least a separator, and will haul only the cream to the creamery. The private creameries already introduced are giving perfect satisfaction so far, and many dairymen are only waiting to be convinced that they are a success before purchasing for themselves. It is estimated that a separator will save every year from \$12 to \$17 from each cow's milk more than the old pan method. Public creameries will continue to grow in favor among small dairies, and as they increase in numbers more cows will be kept by farmers. Milk pans have served their time and are doomed to go.

Santa Clara.

Col. Philo Hersey has been elected president of the Santa Clara Agricultural Society, and C. F. Bunch has been elected superintendent of the grounds and track.

The Los Gatos News adds the following to the current discussion concerning the horticultural quarantine: The task of the State and County Boards of Horticulture in keeping out the fruit pests that ignorant or unscrupulous dealers and shippers have been trying to introduce was well set forth in a recent interview with the State Quarantine Officer. The protection of our orchards has been a battle from the start. The Eastern nurserymen have fought the quarantine laws fiercely. It may not be a fact that most of the Eastern stock is diseased, but the Eastern nurserymen have given ground for such an accusation. They have objected in and out of the courts to giving guarantees that their stock is free from pests. With fruit-growing one of the most im-

portant industries in the State, California cannot afford to risk the loss or injury of her orchards by imported tree diseases or pests. The fruit-growers have learned a lesson from their experience with the cottony cushion scale, the codlin moth and the other imported pests. They have paid dearly for that experience, and they know that their interest lies in rigidly enforcing the quarantine and disinfection laws.

Santa Cruz.

Pajaronian: The beet-growers of the Salinas have been taking steps to get the cultivation and handling of their crops at reduced prices for the coming campaign. There has been a gradual dropping of prices for this work each year, and at the lowest figures paid the Chinese have been able to make gilt-edged wages wherever there was a fair crop. Some of the growers of the Salinas think that all of the work from the time of planting to delivery in the freight cars should be done for \$1 per ton. Last year the average was near \$1.40. We are informed that an offer has been made to furnish white labor for the work at \$1.15 per ton. If the party making this offer can guarantee sufficient labor to handle the crop, he should be given the preference even if the Chinese offer to do the work at a lower price. The offer of \$1.15 is the lowest ever made, and gives assurance to the grower of a better margin for profits.

Sonoma.

Santa Rosa Democrat: The owners of the Litton Springs property have planted several acres of flax, by way of experiment. If the crop does well, a large acreage will be put to this crop next season.

Petaluma Argus: The Poultry Show, which commenced in this city Tuesday and was held over to Saturday, was a success so far as relates to exhibits made, but was not so largely attended as it should have been. The birds exhibited numbered about 1200, and came from all parts of California, Oregon and some from British Columbia. It was a grand showing of the domestic feathered tribe. The following officers for the coming year were elected by the society: Pres., L. C. Byce, Petaluma; Vice-Pres., C. R. Harker, San Jose; Sec., A. Armstrong, Petaluma; Treas., O. J. Albee, Lawrence. Board of Directors—J. W. Forgeus, Santa Cruz; E. H. Noyes, West Butte; George H. Croly, San Francisco; E. H. Freeman, Santa Clara; E. C. Thurber, Alhambra; S. A. Wells, Alameda; Jas. Quick, Patterson; J. A. Schofield, Hollister; Wm. A. French, Stockton; J. A. Noonan, San Francisco. It was decided to hold the next poultry show in San Francisco.

Tulare.

Armona letter: The better pruning this year on trees is noticeable, also taking up those of an inferior quality and replacing them with a better kind. A great many trees are being put out this winter. Several are putting out all their vineyards or a part of them to trees. There is more spraying done than ever before. The person who has his pruning done right from year to year soon gets the whole neighborhood trying to do the same.

Tulare Citizen: The matter of irrigation taxes has brought to the surface numerous facts about the relative merits of dry farming and farming in a district where you have to pay a tax for water. Many examples are given of the irrigated land, but not many of the dry farming. T. E. Fosdic, who lives nine miles west of Tulare on the Packwood, furnishes a very good example of irrigated farming. In 1892, his farm consisted of 18 acres. From this he sold \$160 worth of hay, \$65 worth of hogs and cattle, corn to the amount of \$14 and received \$52 for pasture, making a total of \$296, besides keeping a cow, three horses and raising a garden that furnished much of their living. It will be noticed that fruits cut no figure in his returns; it was simply farming. We understand that the average water tax was about \$1.35 per acre, making \$22.50 for this tract. Deduct that from the returns, and it still leaves dry farming a long way in the rear.

Yolo.

Guinda letter: Tree-planting has been in progress about three weeks. The principal varieties set out are prunes, peaches, apricots and almonds. About 500 acres of the Hambleton tract, 200 acres on J. B. Everett's farm and a like amount on Lou Everett's farm will be set to trees. Besides, other parties whose names I do not now recall are increasing the acreage.

"There's an item in this paper," said Mr. Chugwater, buttering a biscuit, "about a farmer in Tennessee that raised a gourd six feet long. I don't believe there ever was a gourd as big as that."

"I don't know," replied Mrs. Chugwater, sipping her coffee abstractedly; "I don't know. . . Six feet, did you say? . . . How tall are you, Josiah?" — Chicago Tribune.

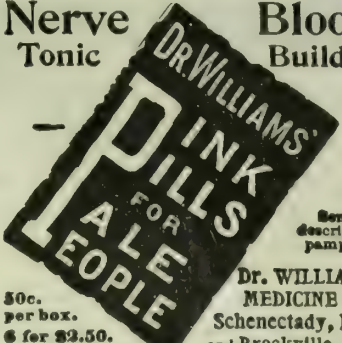
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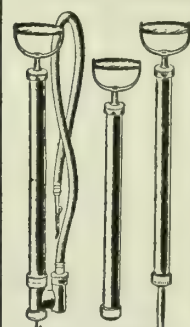
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They are Stronger, Handsomer
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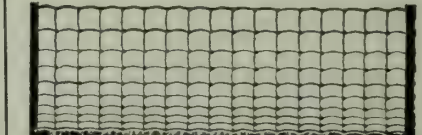
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of any fence can be made in small lot, with a
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Let two strong men pull back and "bang" the
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Cherries, Peaches, Apricots, Apple, Almond
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5 2 Geraniums

6 1 Heliotrope

7 2 Pelargoniums

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2 Chrysanthemums

3 2 Cannas

4 1 Tuberosa

5 1 Artillery Plant

6 3 Single Geraniums

7 2 Scented Geraniums

8 2 Double Geraniums

9 3 Fuchsias

10 1 Begonia

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Fruit is round, of medium size, VERY HIGHLY COLORED, flesh firm and sweet.
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Missions and Nevadillos.
A NO. 1 TREES,

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	Number.	Feet.	Price.
Foster Peach	3000	4 to 6	8 cts.
Early Crawford Peach	6000	4 to 6	8 cts.
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French Prune on Almond	8000	6 to 8	6 cts.
French Prune on Myrobalan	5000	4 to 6	6 cts.
Apple	2000	4 to 6	6 cts.
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All trees warranted to be free from root knot and
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ESTABLISHED IN 1858.

For Sale at Low Rates, a General Assort-
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I do not buy trees to sell; what is offered is grown in
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No. 1—6 to 8 ft. \$25 00 per 1000

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First class stock. Free from insect pest. Samples

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I have a small quantity of ALMOND TREES FOR
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EVERYTHING IN THE SEED LINE.

Our Specialties: Onion Seed and Sets; Alfalfa,
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and timber claims. Have also a limited supply of
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New Catalogue mailed free on application.

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The Humming Bird at Home.

While spending the winter in California, I made my first acquaintance with Madam Hummingbird "at home." In the first place the location could not have been improved upon. Just picture in your mind a lawn dotted with orange, lemon, fig and palm trees, with here and there a giant century plant, or bunch of pampas grass, and no end of flowers. While a cypress hedge, overshadowed by stately eucalyptus and pepper trees, separated the lawn from the street. One day while gathering oranges, I was startled by the rapid and angry darting of a humming bird near my face, which led me to look closely in that part of the tree, which resulted after a little search in the discovery of my first humming bird's nest. It was placed on a twig not as large as a lead pencil, on one of the lower limbs of the orange tree, and it was so colored with lichens the same color as the bark of the tree that it was difficult to find it again even after I knew about where it was. The nest is about the size of the burr oak acorn cup, built almost entirely of the feathery plumes of the pampas grass, covered with green lichens, and all held together, and to the limb, with something greatly resembling spider web. Within this "marvel of construction" were two semi-transparent eggs, almost too small to describe, and my efforts to use the blowpipe on them blew them all to smithereens.

Before taking the nest, I visited Madam Hummingbird several times, and nearly always found her at home. She never left the nest but a few minutes at a time.—Frank Ford, Mag. of Nat. Sci.

Variability of the Wind.

Dr. Langley of the Smithsonian Institution advances a new theory as to the nature of wind which he thinks goes a long way toward determining the ultimate possibility of mechanical flight. The wind is not, the doctor says, even an approximately uniform moving mass of air, but consists of a succession of very brief pulsations, varying in amplitude, and, relatively to the mean movement of the wind, in direction also. Once launched into the mean velocity of the wind a flying machine, therefore, if it had the power to vary its inclination, could take advantage of the varying velocity and direction of the wind. Falling with the slower wind it would accumulate the energy which it would have to expend in rising with the higher, and thus become capable of indefinite sustenance or advance. It would require, however, an even more intimate knowledge and quick perception of the currents of the air than a mariner possesses as to the currents of the sea.

How to Mend Crockery.

A correspondent of the *Scientific American* says. Before being allowed to get dirty or greasy tie all the broken pieces in their places nicely with any kind of string that suits, then put in an iron or tin dish that can be put on the fire, pour in as much milk as will cover the fractures well, put on the fire and boil for say ten minutes, and the whole operation is complete. Don't undo the wrapping until the dish is completely cold, and if yours hold as ours do you will call it a success.

Artificial Ice.

The Massachusetts State Board of Health concludes, from investigations of artificial ice, that artificial processes of freezing concentrate the impurities of the water in the inner core or the portion last frozen; that the impurities are least if distilled water is used; that the number of bacteria in artificial ice is insignificant, under the prevailing methods of manufacture; and that the amount of zinc found in ice is insufficient to cause injury from its use.

STATE OF OHIO, CITY OF TOLEDO, } ss.
LUCAS COUNTY.

FRANK J. CHENEY makes oath that he is the senior partner of the firm of F. J. CHENEY & Co., doing business in the City of Toledo, County and State aforesaid, and that said firm will pay the sum of ONE HUNDRED DOLLARS for each and every case of Catarrh that cannot be cured by the use of HALL'S CATARRH CURE.

FRANK J. CHENEY.

Sworn to before me and subscribed in my presence, this 6th day of December, A. D., 1893.

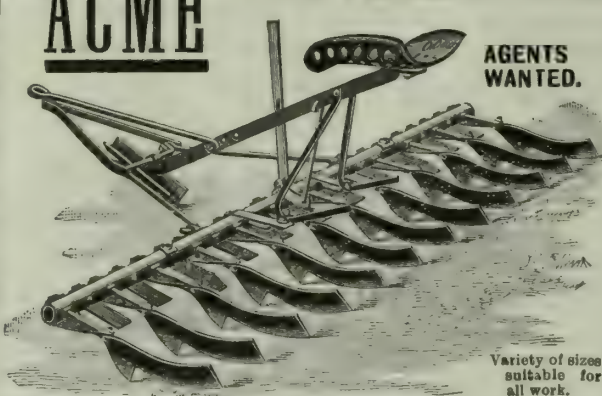
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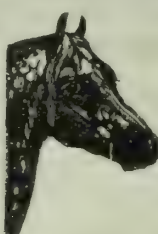
Flat crushing spurs pulverize lumps, level and smooth the ground, while at the same time curved coulters cultivate, cut, lift and turn the entire surface of the soil. The backward slant of the coulters prevents tearing up rubbish and reduces the draft.

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will plant Corn, Beans, Peas and Beet Seed in hills drills and checks, in distances desired. It is the only Planter that will distribute all fertilizers, wet as well as dry, with a certainty, in different amounts, each side of seed. Send for circulars.

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Dividends paid to Stockholders.... 832,000

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Pumps fitted up for all depths of wells, ready to put in.

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S. H. MARKET REPORT

Market Review.

SAN FRANCISCO, Feb. 14, 1894.

The slump in wheat during the past week has been the worst in the history of the grain trade. Without there being any apparent reason for it, the price in the foreign markets has dropped down, down until all previous low records have been surpassed. Local buyers appear to be partly in the dark as to the causes, and, when asked to explain, only point to the reports from abroad and from the Eastern markets. The outlook affords no encouragement. Spot wheat is not wanted at the moment, and the demand is not likely to be urgent until there is improvement at foreign centers. Yesterday, No. 1 Shipping Wheat was quoted at 90¢ per cwt., with 92½¢ for choice as an extreme figure. Parcels suitable for milling purposes are held at a range of \$1.05 to \$1.10 per cwt. In speculative circles there have been some lively operations, and the Call Board record shows a large volume of business for the past few days.

BARLEY—The market is not an active one. In fact, the present situation partakes largely of a sleepy character, while dealers are hoping for something to occur that will create a quickening movement. Prices have an easy tone. We quote: Feed, 71½¢ to 72½¢ per cwt for fair to good quality; 73½¢ to 75¢ for choice bright; brewing, 80¢ to 90¢ per cwt.

Dried Fruits.

Some inquiry is beginning to develop, and dealers are hopeful of a little activity in the near future. Nectarines and Apples are both higher, while Prunes remain weak under liberal offerings. We quote prices as follows: Apples, 5½¢ @ 6¢ per lb for quartered, 5½¢ @ 6¢ for sliced, and 8½¢ @ 9¢ for evaporated; Pears, 4¢ @ 8¢ per lb for bleached halves, and 3¢ @ 5¢ for quarters; bleached Peaches, 6¢ @ 8¢; sun-dried peaches, 4¢ @ 5¢; Apricots, Moorpark, 11½¢ @ 13¢; do Royals, 10¢ @ 11¢ for bleached and 6¢ @ 7½¢ for sun-dried; Prunes, 4½¢ @ 5½¢ per lb for the four sizes, 4½¢ @ 4¾¢ for the five sizes, and 2½¢ @ 4¢ for ungraded; Plums, 5¢ @ 5½¢ for pitted and 1½¢ to 2¢ for unpitted; Figs, 3¢ to 4¢ for pressed and 1½¢ to 2¢ for unpressed; White Nectarines, 7¢ to 8¢; Red Nectarines, 6¢ to 7¢ per lb.

RAISINS—Stocks are large, with poor demand, and the market drags badly. Prices are still lower. London Layers, 75¢ to \$1.15; loose Muscatels, in boxes, 50¢ @ 85¢; clusters, \$1.50 to \$1.75; loose Muscatels, in sacks, 2½¢ to 2¾¢ per pound for 3 crown, and 2¢ for 2 crown; Dried Grapes, ¾¢ to 1¼¢ per pound.

General Produce Market.

OATS—Offerings are in excess of the demand, and yet lower prices would likely prevail if stocks were not fairly well concentrated. We quote: Milling, \$1.12½¢ @ 1.20¢; Surprise, \$1.20¢ @ 1.30¢; fancy feed, \$1.17½¢ @ 1.20¢; good to choice, \$1.10¢ @ 1.15¢; poor to fair, 90¢ @ \$1.05; Black, 82½¢ @ \$1.20; Gray, \$1.02½¢ @ 1.12½¢ per cwt.

CORN—There is an improving tone to the market. Large Yellow is steadier, while the quotation for White has been advanced, owing to stocks cleaning up somewhat. Quotable at 82½¢ @ 85¢ per cwt. for large Yellow, 86½¢ @ 87½¢ for small Yellow, and 92½¢ @ 95¢ for White.

CRACKED CORN—Quotable at \$20.50 @ 21.50 per ton.

CORNMEAL—Millers quote feed at \$20 to \$21 per ton; fine kinds for the table, in large and small packages, 2½¢ @ 3½¢ per pound.

OILCAKE MEAL—Quotable at \$37.50 per ton from the mill.

SEEDS—We quote: Mustard, brown, \$2.50 @ 2.75; Yellow, \$3 @ 3.50; Canary, imported, \$4 @ 4.25; do, California, —; Hemp, 3½¢ @ 4¢ per lb; Rape, 1½¢ @ 2½¢; Timothy, 6½¢ per lb; Alfalfa, 7¢ per lb for California and 8¢ @ 8½¢ for Utah; Flax, \$2.25 @ 2.50 per cwt.

CHOPPED FEED—Quotable at \$17.50 @ 18.50 per ton.

MIDDLINGS—Quotable at \$17 @ 18 per ton. **MILLSTUFFS**—We quote: Rye Flour, 3½¢; Rye Meal, 3¢; Graham Flour, 3¢; Oatmeal, 4½¢; Oat Groats, 5¢; Cracked Wheat, 3½¢; Buckwheat Flour, 5¢ @ 5½¢; Pearl Barley, 4¢ @ 4½¢ per lb; Normal Nutrient, \$3 per case of 1 dozen cans; Breakfast Delight, \$3.25 per case of 2 dozen packages.

BRAN—Quotable at \$16 @ 16.50 per ton.

HAY—The market is in fairly good shape, considering all incidental circumstances. Moderate demand prevails for the several descriptions, though the better qualities attract the bulk of custom. Wire-bound hay sells at \$1 per ton less than rope-bound hay. Following are wholesale city prices for rope-bound hay: Wheat, \$9½¢ @ 13½¢; Wheat and Oat, \$9½¢ @ 12½¢; Wild Oat, \$9½¢ @ 11½¢; Alfalfa, \$8 @ 10; Barley, \$9 @ 10½; Compressed, \$10 @ 12; Stock, \$8 @ 10 per ton.

HOPS—No improvement in prices. Trade is slow. Quotable at 15¢ @ 18¢ per lb.

RYE—Quotable at 87½¢ @ 90¢ per cwt.

BUCKWHEAT—Quotable at \$1.20 @ \$1.30 per cwt.

GROUND BARLEY—Quotable at \$16.50 @ 17.50 per ton.

POTATOES—Supplies continue liberal, causing easy tone to prices. We quote: New Potatoes, — per lb; Sweet, 75¢ @ \$1 per cwt; Garnet Chiles, 45¢ @ 55¢; Early Rose, 40¢ @ 50¢; River Burbanks, 30¢ @ 40¢; River Red, 30¢ @ 35¢; Salinas Burbanks, 65¢ @ 85¢ per cwt.

NUTS—Very little doing either in Almonds or Walnuts. For Peanuts there is fair inquiry. We quote as follows: Chestnuts, 6¢ @ 8¢ per lb; Walnuts, 6¢ @ 7½¢ for hard shell, 8¢ @ 9¢ for soft shell and 8¢ @ 9¢ for paper shell; Chile Walnuts 8¢ @ 9¢; California Almonds, 10¢ @ 11¢ for soft shell, 6¢ @ 7¢ for hard shell and 11½¢ @ 12½¢ for paper shell; Peanuts, 3¢ @ 4¢; Hickory Nuts, 5¢ @ 6¢; Filberts, 10¢ @ 10½¢; Pecans, 5¢ @ 8¢ for rough and 8¢ @ 10¢ for polished; Brazil Nuts, 10¢ @ 11¢; Coconut, \$4 @ 5 per 100.

HONEY—Market quiet and easy, supplies being liberal. Comb, 10½¢ @ 11½¢ per lb for bright, and 8¢ @ 10¢ for dark to light amber; water white extracted, 5¢ @ 5½¢; amber extracted, 4½¢ @ 5¢; dark, 4½¢ @ 4¾¢ per lb.

BUTTER—Of the better grades of fresh Butter the supply is not in excess of trade wants, and prices for such stock continue steady and firm. Ordinary qualities are in liberal receipt at easy

figures. We quote as follows: Fancy Creamery, 28¢ @ 30¢; fancy dairy, 25¢ @ 27½¢; good to choice, 21¢ @ 24¢; common grades, 17¢ @ 20¢ per lb; store lots, 11¢ @ 15¢; pickled roll, 14¢ @ 18¢; firkin, 14¢ @ 17¢.

CHEESE—Is in fairly good demand. We quote: Choice fancy to new, 12¢ @ 13¢; fair to good, 9¢ @ 11¢; Eastern, ordinary to fine, 11¢ @ 14¢ per lb.

EGGS—The market is still largely overstocked and prices are altogether favorable for consumers. We quote: California ranch, 17¢ @ 20¢; store lots, 14¢ @ 16¢; Eastern Eggs, cold storage, 10¢ @ 13¢, Oregon Eggs, 12¢ to 14¢ per dozen.

ONIONS—Choice Onions have been in demand for shipping purposes, and some sales were made above quoted figures. Quotable at \$1 @ 1.60 per cwt.

DRIED PEAS—We quote: Green, \$1.40 @ 1.50; Blackeye, \$1.60 @ 1.70; Niles, \$1.50 @ 1.75 per cwt.

BEANS—Trade is of very slow order and the market does not show much strength. We quote: Bayos, \$1.90 @ 2¢; Butter, \$1.75 @ 1.90 for small and \$2 @ 2.25 for large; Pink, \$1.50 @ 1.62½; Red, \$1.75 @ 1.95; Lima, \$1.90 @ 2.10; Pea, \$2.15 @ 2.30; Small White, \$2 @ 2.15; Large White, \$2 @ 2.12½ per cwt.

VEGETABLES—Supplies are very limited, and will likely continue so until warmer weather comes along. We quote as follows: Asparagus, 10¢ @ 20¢ per lb; Mushrooms, 8¢ @ 10¢ per lb for common and 15¢ @ 20¢ per lb for good to choice; Rhubarb, 7¢ @ 8¢ per lb; Green Peas, 8¢ @ 10¢; String Beans, 20¢ @ 25¢ per lb; Marrowfat Squash, \$1.50 per ton; Green Peppers, 20¢ @ 25¢ per lb; Tomatoes, 75¢ @ \$1.25 per box; Turnips, 75¢ per cwt; Beets, 75¢ per sack; Parsnips, \$1.25 per cwt; Carrots, 40¢ @ 50¢; Cabbage, 50¢ @ 55¢; Garlic, 1½¢ @ 3¢ per lb; Cauliflower, 60¢ @ 70¢ per dozen; Dry Peppers, 10¢ @ 15¢ per lb; Dry Okra, 15¢ per lb.

FRESH FRUIT—Apples of strictly choice quality are not plentiful, but stocks of common grades are heavy. We quote: Apples, \$1 @ 1.25 per box for good to choice, and 35¢ @ 75¢ for common to fair; Choice Mountain Apples, \$1.25 @ 1.50 per box.

CITRUS FRUIT—Trade is quiet and slow, with prices ruling against sellers. Buyers are cautious, and scrutinize offerings very closely, as there is much stock on the market that is more or less damaged by frost. Domestic Lemons are in fair request, and quotations for a desirable article are steady. Shipments of California Lemons are reported to have been made to Minneapolis this season with good results. We quote: Fair to choice Navel Oranges, \$1 @ 2.85 per box; Seedlings, 75¢ @ \$1; Mandarin Oranges, 65¢ @ 90¢ per box; Mexican Limes, \$5 @ 7 per box; California Limes, \$1 @ 1.50 per box; Lemons, Sicily, \$4 @ 5; California Lemons, \$1 @ 2 for common and \$2.25 @ 3 for good to choice; Bananas, \$1.50 @ 2.50 per bunch; Hawaiian Pineapples, \$2.50 @ 3; Mexican Pineapples, \$3 @ 4 per dozen.

POULTRY—The market is in a demoralized condition, supplies of Eastern having been large within the past few days, while the demand is of limited proportions. We quote as follows: Live Turkeys—Gobblers, 9¢ @ 10¢; Hens, 11¢ @ 12¢; dressed Turkeys, 10¢ @ 13¢ per lb; Roosters, \$3.50 @ 4 for old and \$3.50 @ 5 for young; Fryers, \$4 @ 4.50; Broilers, \$3 @ 4; Hens, \$4 @ 5; Ducks, \$3.50 @ 4.50; Geese, \$1.50 @ 1.75 per pair; Pigeons, \$1 @ 1.25 per doz for old and \$1.25 @ 1.50 for young.

GAME—Finds but limited custom. We quote: Quail, \$1 per dozen; Canvasbacks, \$3 @ 4; Mallard, \$2.50 @ 3; Widgeon, 75¢ @ \$1; Teal, 75¢ @ \$1; Sprig, \$1 @ 1.25; Small Ducks, 50¢ @ 75¢; Gray Geese, \$2 @ 2.50; White Geese, 50¢ @ 75¢; Brant, \$1 @ 1.25; English Snipe, \$1.75 @ 2 per doz.; Common Snipe, 75¢ @ \$1 per doz.; Honkers, \$3 @ 3.50; Hare, 75¢ @ \$1; Rabbits, \$1 @ 1.50 per doz.

PROVISIONS—We quote as follows: Eastern hams, 12½¢ @ 13¢ per lb; California hams, 12¢; Bacon, Eastern, extra light, 15¢ @ 16¢; medium, 11¢ @ 11½¢; do, light, 12¢; do, light, clear, 13¢ @ 13½¢; light, medium, boneless, 12½¢; Pork, prime mess, \$14 @ 15; do, mess, \$18 @ 19; do, clear, \$21; do, family, \$24 per bbl; Pigs' Feet, \$12.50 per bbl; Beef, mess, bbls, \$7.50 @ 8; do extra mess, bbls, \$8.50 @ 9; do, family, \$9.50 @ 10; extra do, \$11 @ 11.50 per bbl; do, smoked, 10¢ @ 10½¢; Eastern lard, tierces, 8¢ @ 8½¢; do prime steam, 10½¢; Eastern pure, 10-lb pails, 11½¢; 5-lb pails 11½¢; 3-lb, 11½¢; California, 10-lb tins, 10½¢; do, 5-lb, 11¢; do, kegs, 11½¢ @ 12¢; do, 20-lb buckets, 11¢; compound, 8¢ for tierces and 8½¢ for hf bbls.

WOOL—Some little inquiry is reported for scouring purposes. Otherwise, there is no life to the situation. We quote spring:

California, year's fleece, 7¢ @ 8¢; do 6 to 8 months, 7¢ @ 9¢; do Foothill, 10¢ @ 11¢; do Northern, 12¢ @ 13¢; do extra Humboldt and Mendocino, 11¢ @ 13¢; Nevada, choice and light, 12¢ @ 14¢; do heavy, 8¢ @ 10¢; Oregon, Eastern, choice, 10¢ @ 11¢; do Eastern, poor, 7¢ @ 9¢; do Valley, 12¢ @ 14¢. We quote fall: Free Mountain, 6¢ @ 9¢; Northern defective, 5¢ @ 8¢; Southern and San Joaquin, 3¢ @ 5¢.

HIDES AND SKINS—Quotable as follows:

	Sound.	Culls.
Heavy Steers, 57 lbs up, ½ lb.	4¢ @ 4½¢	3½¢ @ 4¢
Medium Steers, 48 to 56 lbs.	4¢ @ 4½¢	3½¢ @ 4¢
Light, 42 to 47 lbs.	3¢ @ 3½¢	2½¢ @ 3¢
Cows, over 50 lbs.	3¢ @ 3½¢	2½¢ @ 3¢
Light Cows, 30 to 50 lbs.	3¢ @ 3½¢	2½¢ @ 3¢
Stags.	2½¢ @ 3¢	2¢ @ 2½¢
Kips, 17 to 30 lbs.	4¢ @ 4½¢	3¢ @ 3½¢
Veal Skins, 10 to 17 lbs.	5¢ @ 6¢	4¢ @ 4½¢
Calf Skins, 5 to 10 lbs.	7¢ @ 8¢	6¢ @ 7¢
Dry Hides, usual selection, 7c.		
Calf Skins, do, 7c.		
Calf, 4c.		
Pelts, Shearling, 10¢ @ 20¢ each; do, short, 25¢ @ 35¢ each; do, medium, 40¢ @ 50¢ each; do, long wool, 50¢ @ 75¢ each; Deer Skins, summer, 25¢; do, good medium, 15¢; do, winter, 5¢ per lb; Goat Skins, 25¢ @ 40¢ apiece for prime to perfect, 10¢ @ 20¢ for damaged, and 5¢ @ 10¢ each for Kids.		

TALLOW—We quote: Refined, 5½¢; rendered, 4½¢ @ 4¾¢; country Tallow, 4¢ @ 4¼¢; Grease, 3¢ @ 3½¢ per lb.

San Francisco Meat Market.

The only change that has occurred in a week was a small advance in Mutton quotations, owing to less liberal receipts. Following are the rates for whole carcasses from slaughterers to dealers:

BEEF—First quality, 5½¢ @ 6¢; second quality, 4½¢ @ 5¢; third quality, 3½¢ @ 4¢ per lb. **CALVES**—Quotable at 4¢ @ 5¢ for large, and 6¢ @ 7¢ per lb for small.

MUTTON—Quotable at 7¢ @ 8¢ per lb. **LAMB**—Spring, 12½¢ @ 15¢ per lb.

PORK—Live Hogs, on foot, grain fed, heavy and medium, 5¢; small Hogs, 5½¢ @ 5¾¢; stock Hogs, 4½¢ @ 4¾¢; dressed Hogs, 7¢ @ 7½¢ per lb.

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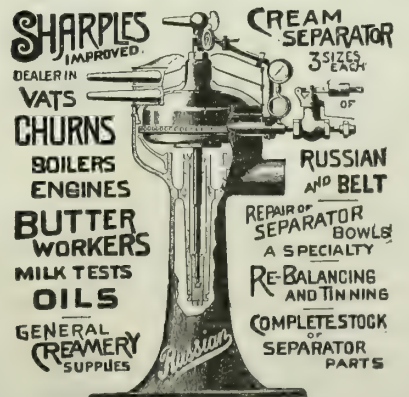
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Science of Weather.

B. S. Pague, weather forecast official in charge of the San Francisco station, delivered a highly instructive lecture recently to the students of the Leland Stanford Jr. University. After giving an exhaustive contemporaneous history of the subject of weather forecasting he said, in part:

Weather forecasting is practical meteorology. It is the applying of all known laws to current conditions and deducting probable results.

Simultaneous eye reading observations are made at all Weather Bureau stations at 8 A. M. and 8 P. M. seventy-fifth meridian time (or 5 A. M. and 5 P. M. Pacific time). These observations, consisting of the readings of the barometer, thermometer, the wind vane, the anemometer, the rain gauge, clouds and deductions for the relative humidity, the character of the weather and any special phenomena that might be observed, are enciphered and telegraphed to selected centers, from whence they are again distributed.

At San Francisco we have reports from Chicago westward, from Texas north to the northern stations of the British Northwest. These observations are entered on charts. Lines connecting places of equal barometric pressure, called isobars, are quickly drawn. Lines connecting places of the same temperature, called isotherms, are next drawn. Then on the second chart are lines drawn to show the changes in the temperature during the past twenty-four hours, and on the third chart are lines drawn showing the atmospheric pressure and lines drawn encircling rainfalls and cloud areas. Thus having the three sets of charts prepared, the forecaster sees at a glance where the pressure is the highest and where the lowest; where the greatest and least changes in the pressure have occurred during the preceding twelve and twenty-four hours, when rain has or has not fallen and when the temperature has increased or diminished the amount of clouds. These are the facts known to the forecaster, and from them he is to deduce the probable weather to come.

The atmospheric disturbances affecting the weather in California usually show themselves first in the north off Vancouver island or off the Washington coast. Some few move from the southwest and first appear off the southwest California coast. These latter, however, are rare.

I would call your attention to the daily weather map published every morning and commend it to your attention and study. A careful perusal of it daily, a study of the constant atmospheric changes noted thereon from day to day would soon enable you to deduce your own conclusions and not be dependent on the official forecasts. Observe the movement of the low pressures or storm centers, the influence that the high pressure exerts from one day until the next, notice the position to-day of a certain isobar and compare it with the same isobar of the day following and you will find yourself interested in the movements and deducing valuable conclusions, ever remembering that a southern deflection of the storm or low area will cause rain in California, while an eastern movement of the storm will allow fair weather to continue.

On the Pacific Slope, and especially in California, the dry and wet seasons or periods of the year are more definitely marked. The cause of the wet and dry seasons in summer is because the low pressure or storm center moves eastward at such a high altitude that its influence seldom extends farther south than Washington, and at times not to the northern Washington line. In winter these low pressure or storm centers are deflected south, causing the rains which occur.

Smoke-Preventing Laws.

The last Legislature of Massachusetts passed a law regulating the smoke nuisance in the large cities. This law provides that in cities of over 300,000 inhabitants, after July 1st of the present year, no person should use bituminous coal for the purpose of making steam in boilers in any building, unless the furnace in which said coal is burned is so built or equipped that at least 75 per cent of the smoke is consumed or otherwise prevented from entering the atmosphere. The penalty was fixed at not less than \$10 nor more than \$100 for each week during which the violation of the law should continue. In commenting on this, a scientific writer says it is hoped that other States will enact similar laws. It is an easy matter to prevent the smoking of furnace fires, and there is also economy in burning the smoke, which, as everybody knows, is composed of fine coal, which is allowed to

escape before it has been properly acted upon by the oxygen of the air.

Effects of Trees on Climate.

As to humidity of air, we find that the annual evaporation within the forests is about one-half of that in the open field; not only is the evaporation within a forest greatest in May and June, but the difference between this and the evaporation in the open field is also then a maximum, which is the saving due to the presence of the woods, says Prof. B. E. Fernow in *Manufacturers' Gazette*. The average annual evaporation within the woods is about 44 per cent of that in the field. Fully half of the field evaporation is saved by the presence of the forest.

The quantity of moisture thrown into the air by transpiration from the leaves in the forest is sometimes three times that from a horizontal water surface of the same extent, and at other times it is less than that of the water. The transpiration from leaves in full sunshine is decidedly greater than from leaves in the diffused daylight or darkness. The absolute amount of annual transpiration observed in forests of mature oaks and beeches in central Europe is about one-quarter of the total annual precipitation.

The percentage of rainfall evaporated at the surface of the ground is about 40 per cent for the whole year in the open field and about 12 per cent for the forest, and is greater under deciduous than under evergreen forests. The evaporation from a saturated bare soil in the forest is about the same as that from a water surface in the forest, other conditions being the same. The presence of forest litter like that lying naturally in undisturbed forests hinders the evaporation from the soil to a remarkable extent, since it saves seven-eighths of what would otherwise be lost.

The total quantity of moisture returned into the atmosphere from a forest by transpiration and evaporation from the trees and soil is about 75 per cent of the precipitation. For other forms of vegetation it is about the same, or sometimes larger, varying between 70 per cent and 90 per cent; in this respect the forest is surpassed by the cereals and grasses, while, on the other hand, the evaporation from a bare soil is scarcely 30 per cent of the precipitation.

The absolute humidity within a forest exceeds that of the glades and the plains by a small quantity. The relative humidity in the forest is also larger in the forest than in the glades or plains by two to four per cent. Forests of evergreens have from two to four times the influence in increasing relative humidity than do forests of deciduous trees. The gauges in European forest stations catch from 75 to 85 per cent when placed under the trees, the balance representing that which passes through the foliage and drips to the ground or runs down along the trunks of trees, or else is intercepted or evaporated. The percentage withheld by the trees, and which either evaporates from their surface or trickles along the trunk to the ground, is somewhat greater in the leafy season, though the difference is not great.

Deciduous and evergreen trees show but slight differences in this respect. More rain is usually caught by gauges at a given height above the forest crown than at the same height in open fields, but it still remains doubtful whether the rainfall itself is really larger over the forests, since the recorded catch of the rain gauge still requires a correction for the influence of the force of the wind at the gauge. In such cases, where over a large area deforestation and reforestation have seemingly gone hand in hand with decrease and increase of rainfall, the possible secular change in rainfall must also be considered.

Fortune or Miss-Fortune.

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The earliest treatise on arithmetic is by Euclid, B. C. 300.

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CANNY JAMIE (6574), Vol. XI, C. S. B. Call on or address H. P. MOHR, Mt. Eden, California.

Vegetable Photography.

The following appeared in "Notes and Queries" some 20 or 30 years ago: "While any fruit, peach, nectarine, or apricot, is yet in a green state, affix an adhesive label, your initial, or any other private mark to the side exposed to the sun. The ripe fruit thus labeled will carry its unobliterated green stamp into the market. This simple operation, should it fail to preserve the fruit, will at least enable the owner to identify it if stolen." Probably the method referred to is one of the first steps that has been made toward the process of "photographing" on leaves, etc.

To Arrest a Cold.

Tincture gelsemium.....gtt. 2
Liquid ergot....." 5
Camphor water.....dr. 4

Mix and take every hour immediately the cold is felt. If this is taken for twelve hours, at the same time keeping indoors in the warmth, many a cold will be cut short.—Cor. Bl. Schweiz, Aertze.

CHOICE FRUIT TRACTS,
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80 ACRES (ONE-HALF CLEARED) BEST FRUIT land near Saratoga, at \$40 per acre.

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One gentleman writes: "I have Prof. Jones' book on Dairying, cost me \$10, but practically Mrs. Jones' book is worth more." This book we propose

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SAN FRANCISCO, CAL.

Patrons of Husbandry.

(Continued from page 132.)

From Grass Valley.

Mrs. R. S. Twitchell writes from Grass Valley that the annual installation was held with open doors. All of the new officers were on hand and the exercises passed off in fine style. Says the correspondent:

After this part of the programme was ended, supper was announced, to which all did ample justice, and then came singing and recitations, all of which were listened to with attention and each applauded in its turn. Some of our friends from the outside helped us in the way of entertaining our friends.

No particular news from this section of country. We are having lots of rain this winter, which means a bountiful summer and autumn. Our grange is lively for this time of the year, and has received the announcement from the secretary of the State Grange of date of grangers' days at the Midwinter Fair. Will try to be there as many of us as can make it possible. Have also received the shortened rituals sent from San Jose; had no time to examine them at last meeting. It strikes us they are rather too short. What are your views on the question, Mr. Editor? Can't you give them in the RURAL? Where are all the grange correspondents? Now that Mr. Ohleyer has gone East we shall have no one to write letters for the Grange Department. How we shall miss him.

The State Lecturer's articles are just what we need, especially the women lecturers of subordinate granges, something to read on the topic for each month that will bring out discussion from the other members. Would it be right to ask questions in this department such as this: How can the L. of a grange "exemplify the unwritten work and see that it is correctly given," as charged in the installing ceremony, never having heard it given only by the masters of their own grange? What other way is there for me to learn it in order to know whether it is given correctly or not? Will some one be kind enough to answer through the columns of the RURAL PRESS?

Resolutions of Respect.

At its last meeting Sacramento Grange adopted resolutions expressing the respect of its members for the character and memory of its late brother, Edward F. Everett, and its grief for his death. The hall will be draped in mourning for thirty days. The committee by which the resolutions were drafted was composed Henry Brown and Miss May Donaldson.

List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR THE WEEK ENDING JAN. 23, 1894.

- 513,228.—CAR BRACK—S. V. Bahme, Ellensburg, Wash.
513,300.—GAS-LIGHTER—W. L. Brown, S. F.
513,089.—THRASHING MACHINE—S. D. Crockett, Seattle, Wash.
513,232.—ROTARY ENGINE—Thos. Harding, San Jose, Cal.
513,330.—TRIMMING STEREOTYPE BLOCKS—A. Kayser, Oakland, Cal.
513,124.—BUNK FOR LOGGING TRUCKS—C. D. Matheny, Seattle, Wash.
513,125.—MILK RECEPTACLE—J. M. Mathews, Seattle, Wash.
513,335.—FLOW—F. S. Moore, Hanford, Cal.
513,208.—FRUIT CAR—H. A. Smith, Los Angeles, Cal.
513,216.—CONCENTRATOR BELT—H. J. Summerhayes, S. F.
513,347.—MAGNETO-ELECTRIC MACHINE—H. H. Taylor, Los Angeles, Cal.
513,350.—RHODOTAT—B. C. Van Emon, S. F.
513,221.—SAUCEPAN—R. B. Vanderburg, Long Beach, Cal.
513,222.—SOLDERING IRON—R. B. Vanderburg, Long Beach, Cal.

FOR WEEK ENDING JAN. 30, 1894.

- 513,629.—CHECK FOR HORSES—W. C. H. Amende, San Diego, Cal.
513,749.—TICKET HOLDER—F. D. Atherton, S. F.
513,475.—FAUCET—M. L. Bergman, Spokane, Wash.
513,704.—RAISIN-SREDER—S. B. Bliss, Riverside, Cal.
513,906.—WIRE TIGHTENER—W. B. Fielding, San Jose, Cal.
513,910.—STORAGE BATTERY—G. B. Fraley, S. F.
513,905.—TRAP—Hubbard & Jenkins, Los Angeles, Cal.
513,776.—BLANK FEEDER—Gray & Murch, S. F.
513,778.—WIRE-STRETCHER—J. H. Gregory, Ione, Cal.
513,923.—EXHAUST NOZZLE—E. W. Harris, Palisade, Nev.
513,969.—SPARK-WORKING MACHINE—S. Hernon, Los Angeles, Cal.
513,789.—HOP TRIER—E. C. Horst, Sacramento, Cal.
513,930.—WAVE POWER—Husted & Doolittle, Los Angeles, Cal.
513,796.—CIRCUIT-CLOSER—H. Lewers, Carson, Nev.
513,715.—GATE—B. O. McCoy, Suisun, Cal.
513,811.—FLOW-SHARPER—S. S. Morrill, Stockton, Cal.
513,590.—SPRING GUN—W. B. Morris, Seattle, Wash.
513,813.—SHINGLE-BINDER—Munro, Hart & Bates, Sedro, Wash.
513,718.—BATHING BRUSH—F. Neld, S. F.
513,584.—WRENCH—W. A. Papoun, Baker City, Or.
513,634.—TELEPHONE SIGNAL—Sabin & Hampton, S. F.
513,737.—POWDER—E. A. Starke, S. F.
513,849.—CONCENTRATOR—G. W. Walt, S. F.
23,019.—SPOON DESIGN—A. Kaiser, Stockton, Cal.

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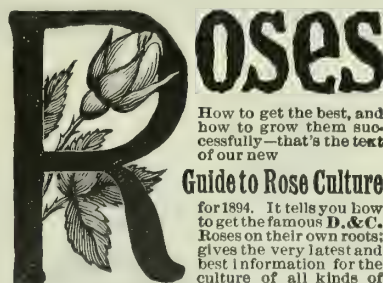
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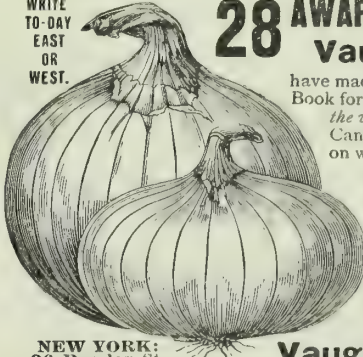
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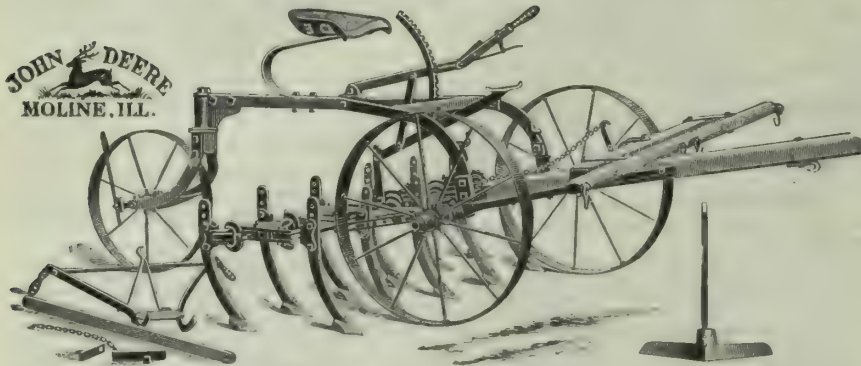
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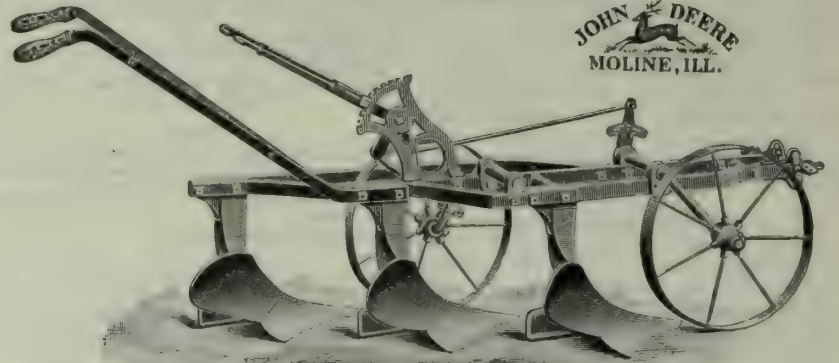
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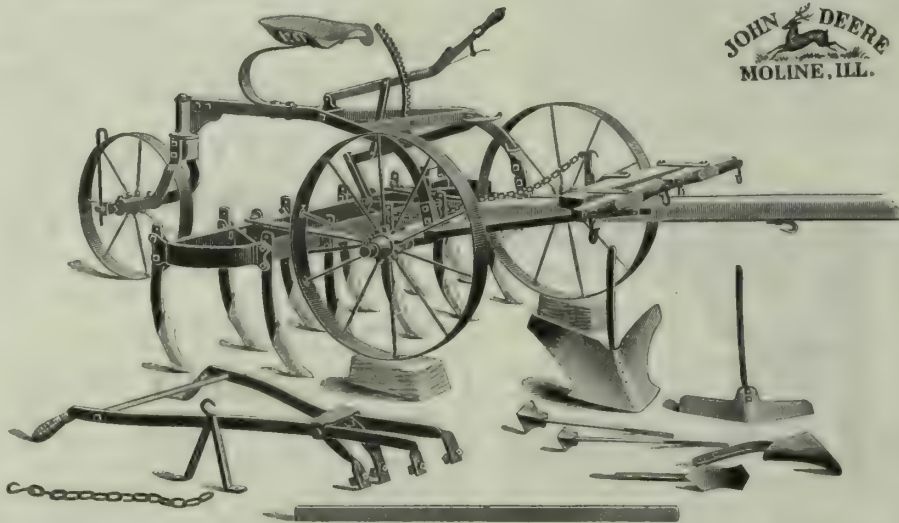
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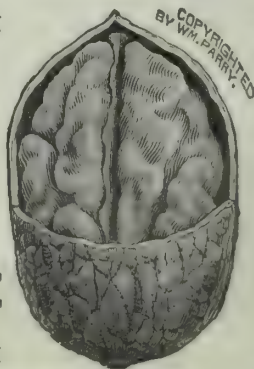
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Vol. XLVII. No. 8.

SAN FRANCISCO, SATURDAY, FEBRUARY 24, 1894.

TWENTY-FOURTH YEAR.
Office, 220 Market Street.

The Buffalo under Domestication.

Our illustration presents a scene in the portion of Golden Gate Park devoted to the native American species of the genus *Bos*. Within the last few years there has crossed the country a wave of sentiment on the buffalo. It is with reference to the animal world what "Lo, the poor Indian," is to the native *homo*—a recognition of the fact that time is treading on the heels of a departing race and the present generation opens its museum to the entry of relics. It is a commendable enterprise, for coming generations of Americans should see the native beast which has been so closely associated with West American pioneering and development.

We do not know how generally buffaloes have been recognized as proper zoological-garden stock, but our engraving shows that the Golden Gate Park of San Francisco has secured some very presentable specimens and has made very satisfactory arrangements for their comfort. It is also apparent, too, from the numbers who linger at the palings and study the beasts as they destroy tame hay that they constitute a n attractive show. Just now the buffaloes are enjoying unusual popularity because just over the crest of the hill shown in the engraving is the great Midwinter Fair grounds. Just what these denizens of the prairies think of the blazing lights and discordant racket which have come to their vicinity does not appear in the picture.

But recently the buffalo has awakened interest outside of zoological gardens. The animal has received the attention of breeders, and crosses with several European breeds of the *Bostaurus* have been effected. Grade buffaloes are now more common than the pure bred. They have been tested to some extent as beef and milch stock and have been praised in these lines by their owners. At present, however, they are probably earning most as side-show stock, and the picturesque term "cattleyos" has been coined for their special use by the cowboy element.

Buffaloes seem to appreciate civilization. They breed well in confinement. Their appetite is as keen for store fodders as for the natural growth of the great plains; and if they are not lost by the craze for cross-breeding, there is no reason why they should not go down to posterity quite a piece. It would seem a proper government enterprise to retain them upon a reservation where they would be free from the dangers of civilization.

We continue on another page Major Powell's statement on the "Water Supplies in the Arid Regions," of which we gave the opening chapter, with comments, last week. The interest which prompted the *Irrigation Age* to secure this writing from Major Powell was to aid in an understanding of his position with reference to the proposed amelioration of the great arid regions of the interior lying between the Rocky Mountains and the Sierra Nevada. This consideration is also of importance to our readers, but our main interest lies in the discussion given of the phenomena of evaporation and loss of water by drainage channels. These points are of direct value to Californians who have already established irrigation enterprises, as well as those who contemplate new ones. We shall continue the matter in future issues and when occasion offers

The Southern Citrus Fair.

The Southern Citrus Fair opened this week in the fine Southern California building at the Midwinter Fair. The representatives of the southern counties have done splendidly in their choice of a site for their building and in the style and construction of the building itself. It is prominently situated, and amid its environment of palms, its Mission type of architecture, is very appropriate and pleasing. Owing to the distance from the groves, the decorative creations of the fair are not as ambitious or elaborate as at some of the fairs held at the South, but to our notion this is no loss. There is abundant display, and its more modest style is a decided advantage. Oranges are shown in almost every form of tasteful arrangement, and hundreds of thousands are said to be the numbers of the fruits employed.

Tuesday was designated as Southern California day, and the opening of the citrus fair was suitably celebrated in song, oration and instrumental music. Unfortunately, the weather was on its worst behavior, and the expected throngs did not arrive; but, though the citrus fair was only given five formal days to run, the displays will doubtless be held open longer and there will be no lack of admirers when the tide turns in the clouds. The affair is exceedingly creditable



IN THE BUFFALO PADDOCK AT THE GOLDEN GATE PARK.

shall comment upon it in the view of California experience and observation.

IT IS REPORTED from Pomona, which is quite a center for olive nurseries, that all these concerns have been working day and night for three weeks in filling orders for olive trees, and have more orders on hand for olive trees than they can fill. Shipmen's are made all over the State. Thus far about 300,000 olive trees have gone out from Pomona to points in southern and central California, and fully 100,000 more trees will be shipped before the season closes. The olive crop in Pomona valley during the past season amounted to over \$80,000, and it was a short crop. Seven years ago there were less than forty olive trees in the whole valley.

THE PLACER COUNTY fruit growers will meet at Penryn at 2 P. M. on Saturday of this week to take final action on a form of county organization. As soon as a decision is reached we shall publish the details of organization in case they may be of assistance in other counties contemplating such action. It said is that a very earnest spirit is manifested in Placer.

to the south, and will give the people of the north a better opportunity than they have ever had to see what the famous south end of the State can do.

A CORRESPONDENT of the Crescent City, Del Norte county, *Record* writes that some years ago he sowed seed of Johnson grass about the first of March, and about the first of June the grass came up, which is about the same time each year that it appears since. It does most of its growth during the driest season and seems to thrive only on cultivated land, such as corn or potato land. If not carefully tended to, it will kill out all other vegetation. Stock will not eat it if they can get anything else. He would never advise a person to sow Johnson grass on any valuable land. This Del Norte county man has formed about the right idea of Johnson grass. It will only grow where it is not wanted, and in such places it is hard to get out, as many of our readers know to their woe.

THERE has been a low barometer in the poultry market this week. Turkeys are cheap as roast beef and consumption has increased accordingly. Fifteen cents per pound at retail is low for turkeys in this market.

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ALFRED HOLMAN.....Editor
J. F. HALLORAN.....General Manager
E. J. WICKSON.....Special Contributor

San Francisco, February 24, 1894.

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See Advertising Columns.

The Week.

We have come nearer this week to an old-fashioned storm than has been recently experienced. Reports of trains snow-bound in the mountains, of booming streams and low lands overflowed, of highways impassable—all these things are sensations which the newer Californians have not enjoyed before. Nor is the affair less enjoyable because these conditions, coming thus late in the year, cannot be protracted. Though the excessive rainfall has been depressing and trying to some, it adds another indication that the year will be one of great production, and this may help put an end to the dull times. The last storm extended quite a distance up the San Joaquin valley and is well timed for that region because it comes just about at the end of winter sowing.

The Midwinter Fair continues the great center of interest. The Transmississippi Congress, drawn hither in part at least by the fair, was attended by representatives from all parts of the great geographical region indicated by its name. It expressed itself at considerable length on all notable public affairs. Attendance at the fair is decimated by the falling weather, but there is still plenty of time for it to demonstrate its hold upon the public mind. The displays are all that was promised and more.

THE State Board of Horticulture has the handsomest exhibit in the Horticultural Building at the Midwinter Fair. It occupies commanding space on the second floor nearly under the great dome. The construction is done in redwood, natural colors, and the carpentry is very artistic. The display consists of splendid specimens of fruit in fluid, olive oil, injurious and beneficial insects, publications of all kinds, of horticultural interest, and many other exhibits fitting and desirable. It will give the stranger a good idea of the amount of work carried on by our State Board and will tend also to make the work better known to Californians. The display is worthy of our great fruit interest and is creditable to the State.

CONSUL PARKER, at Birmingham, sends a report to the State Department on the American wheat and flour trade in the English Midlands. He estimates the increase in the amount of flour received from the United States at 79 per cent in four years, and declares the dependence of Great Britain on the United States for a considerable portion of her breadstuffs is completely established, and is far more likely to increase than decrease.

Phenomena of Growth in the Wheat Plant.

Now that abundant rainfall favors the growth of the wheat plant, it is timely to present a few of the interesting phenomena of that growth as shown by recent investigation. The results of careful scientific observation enforce certain positions taken by the more thoughtful growers, and show the incorrectness of some views which are quite commonly held. We note first the desirability of good, plump, heavy wheat for seed. It has been held that light, shriveled wheat would do as well as any for seed, consequently it is a good business proceeding to sell the best wheat and use for seed that which will not bring a satisfactory market rate. It is rather singular that this view should be held even by people who freely acknowledge the desirability of large, plump garden seed and of pits from well grown fruit as the proper start for fruit trees. The reason why such a view is held is probably because under our exceedingly favorable conditions for the growth of the wheat plant in "good years," the plant even from a weak seed acquires strength and yields a grand crop. Under favorable conditions even the weakest organizations thrive, but that does not warrant us in propagating weak organizations. When success is attained with them it is merely our good fortune and not any tribute to our wisdom.

On this point of the desirability of good seed over poor in the matter of wheat, recent investigations at the Minnesota Experiment Station are of great significance as affirming the conclusions previously reached by European investigators. As a summary of a number of analyses, it was found that the heaviest weight wheat yields 1.30 pounds of ash, containing .66 pounds of phosphates, while a bushel of the light-weight wheat yields 1.15 pounds of ash, containing .51 pounds of phosphates. There is nearly 30 per cent more phosphoric acid in the heavy-weight wheat than in the light weight of the same variety. The heavy-weight bushel also contains about a quarter of a pound more nitrogen than the light-weight bushel. Briefly stated, the heavy-weight wheat seed contains more valuable food material for the young plant in the form of nitrogen, phosphates and potash than the light-weight wheat. These reserve materials are more abundant in the heavy seeds by nearly 30 per cent, and are supplied to the young plants as just so much more reserve food, before the young plants are compelled to work for themselves, which accounts for the fact that the heavy-weight seeds produce more vigorous plants than the light-weight seeds.

Evidently the plants started from the stronger seed had a better start in the world. They can withstand greater hardship in the way of adverse natural conditions. Under favorable conditions which might give a good crop from weak seed, the strong seed would give a better crop and would store in the seed the potentiality of still greater improvement. Continually growing from the best by selection gives us our improved varieties, both of plants and animals. People who would never breed from a scrub animal will sometimes fill their land with scrub wheat seed. It is not wise so to do.

There is another exceedingly interesting deduction to make from the Minnesota observations to which we have alluded, and that is the work accomplished by the plant at different stages in its growth as follows:

At the end of the first period of 50 days the plants had reached an average height of 18 inches. At this time a little less than one-half of the total dry matter of the plant had been produced, and this dry matter contained nearly three-quarters of the total mineral matters that were taken from the soil during the entire growth of the crop.

Second Period.—Fifteen days later, 65 days from the time of seeding, the plants were fully headed out and had made an additional gain of about 15 per cent organic matter; the mineral matters were taken up more slowly, showing an additional gain of about 10 per cent. At the close of this period the wheat plant had taken up about 85 per cent of the total materials supplied by the soil.

Third Period.—The wheat had reached that state commonly known as "in the milk." During this period of 15 days the plants showed rapid and marked gains in organic matter, over one-third of organic compounds of the plant being produced during these dates. Along with this gain of organic matter, it is to be noted that practically all of the remainder of the mineral matters were taken from the soil.

Fourth Period.—In the last period of some 20 days prior to harvest there was an additional gain of 10 per cent of organic matter, and no material increase in mineral matters. This is more of a period of rearrangement of the materials that are already in the plant rather than a period of increase in dry matter.

Of course the number of days involved in the attainment of these successive stages may be quite different in California from those accredited to them in Minnesota, but the visible forms are equal in all probability. By the time, then, that the wheat has reached the milk it has finished its meal of soil ingredients and devotes its time to digestion. Favorable conditions are required for this, and no doubt in this State the most unfavorable is drouth, which desiccates the tissue before its work is done. It is to this work to which the plant's best days are given, and it is clearly intelligible why the cessation of a drying wind and the occurrence of cool weather, with possibly a fog, work such gratifying transformation in a plant which seemed well nigh killed by drouth. It is to this beneficent

change in its surroundings which is due the greater weight and plumpness of grain at threshing that a few days before cutting seemed impossible. It also explains why California can produce such fine wheat during a very short rainy period. To the grower of irrigated wheat these points will also be of the greatest practical importance.

Activity in the Northern Fruit Interests.

The northwest Pacific coast is forming a general organization for the promotion of the fruit interests. At a meeting held in Spokane last week permanent organization was determined upon with the following officers: President, Dr. Blalock, Walla Walla; Vice Presidents, C. P. Wilcox, Yakima, Wash., Robert Schleischer, Lewiston, Idaho, John Kirkland, British Columbia, J. B. Cardwell, Portland, Or.; Secretary, S. A. Olark, Salem, Or.; Treasurer, W. F. Ofner, Walla Walla. The next meeting will be held at Portland.

Resolutions were adopted favoring the fruit laws of California. The committee on transportation reported that it had conferred with representatives of the Northern Pacific, the Union Pacific and Great Northern and had received assurances that they would always have rates to Eastern points equal to those enjoyed by California shippers, with the additional advantage of free refrigerator cars; that local refrigerator cars would be run at regular intervals between Portland and St. Paul, with charges above through rates only to cover the actual cost of ice; that rates would be made on apples which would enable the association to compete with Eastern growers. If all these fine promises are realized our Northern friends will be in great luck.

HARVARD UNIVERSITY proposes to locate an observatory station in Arizona. Such a station has been the plan of Professor Pickering for years, but he has never before had the necessary financial backing. Percival Lowell of Boston has just donated a large fund for this purpose, and Mr. Lowell will go as a member of the party. A. E. Douglass, assistant in the Cambridge Observatory, will leave before the other members of the expedition, in order to make experiments. William Pickering, who led the Harvard expedition into Peru, will manage this work. The station in Arizona will be for visual investigation, as the Harvard station in Arequipa, Peru, is for photographic purposes. This will give the Cambridge Observatory two of the best locations in the world. The great Bruce photographic telescope now being tested will be shipped to Peru. It will be the largest of its kind in use.

So all this heavy weather comes from Tulare county. We read in a local paper that Frank Baker the "rain-maker" has notified the farmers in that region that he will be unable to carry on his experiments after the 15th of March without some compensation, as it is too expensive. He says that he is willing to produce one inch of rain during the month of April for \$500, or he will guarantee an average crop for 50 cents an acre, on these terms, no rain no pay. He says he can bring rain every seven days until the first of June. The Midwinter Fair people had better capture Mr. Baker. His experiments are more expensive to them than to him. He is ruining the fair and the managers could easily afford to give him \$500 a day to let up. No wonder our official weather man cannot do anything with this chap firing away in Tulare. And he proposes to keep at it until June, too. Evidently something should be done.

THERE is a special issue between the miners and the ranchers in Montana. One flock owner at Great Falls in that State had to move 2,500 head of sheep on account of the smelter smoke. He says that he kept on losing sheep out of his band from some mysterious disease, and was unable to find out what it was. He made several post-mortems and slaughtered some of the sick ones, and found that the flesh and fat had a yellow tinge. A herder who had worked near the East Helena smelter told him that a band there had been affected in the same way, so he came to the conclusion that it must be due to the arsenic in the smoke from the smelter, which became deposited on the grass. This is not a new experience. Smelters and chemical works are always in trouble about their fumes. Probably in Montana there may be found room enough for both.

THE Agricultural Department of the University of California has set up an extensive exhibit of cereals and forage plants at the Midwinter Fair. It occupies wall space about 75 feet long and includes about 400 different varieties of the plants mentioned. It is calculated to give the visitor new ideas about the wonderful variation in form which bread grains assume. The arrangement is artistic and each specimen is plainly labeled. All interested in such displays should look for this one in the gallery of the Agricultural building.

From an Independent Standpoint.

Although the tariff bill has been nominally in the hands of the Senate for two weeks, it has not as yet gotten practically before that body. The formalities of procedure required its reference when it first came from the House to the Committee of Ways and Means, from which it is expected to come back with such amendments as in the judgment of the committee the Senate will require. It is not until after this report shall have been made and the bill actually before the Senate for consideration that the heavy thunders of partisan debate will begin to roll. In the meanwhile the Ways and Means Committee—or, to be accurate, the Democratic members of the committee, for the Republican members are not permitted to attend the sittings—are meeting very heavy weather. Details of the bill are being so stubbornly fought within the party that it seems impossible to argue upon any report that will leave the measure effective within the lines of its general purpose.

Very emphatic objection is being made to the exclusion of the minority members from the meetings of the committee in which the bill is under consideration. It is claimed, and we think with much point, that the exclusion smacks too much of the star chamber to be in harmony with American ideas. In this particular case it is the Republicans who are complaining, but it is asserted that the practice originated during the long period of Republican domination and that it is only fair that a method which they long used for Democratic oppression should in turn be employed against themselves. This sort of sharp talk, although very effective for purposes of controversy, does not redeem the practice of minority exclusion from its essential iniquity. It is at variance with every idea of representative government. It is an outrage upon the people if by any species of parliamentary trickery those whom they send to represent them are not allowed to do so; and it is just as bad for one party to do it as another. If it be a good retort to say that the Republicans did it when they had the power, the principle which makes it so condemns Democratic enforcement of the rule now.

While the committee has not yet come to an agreement upon the bill, it has passed upon some of its points and in response to public demand for information, Chairman Voorhies from time to time makes informal report through the newspapers. Thus, it is known that the committee has determined to retain the project for an income tax. The announcement is a surprise to many, and the war over this will probably be a warm one, for it is both warmly supported and warmly opposed. The arguments for the income tax are that those who get the most out of the public ought to give most for public expenditure; that such a tax will only effect those whose incomes are relatively large. There is a large class of persons who feel that the well-to-do-classes ought to contribute more than they do toward the expenses of Government; and to those who thus believe, the income tax seems a device calculated to readjust the burdens of society in a way to relieve the poorer and "cinch" the richer. In England where incomes have been assessed for two generations, it is called the "rich man's tax" and is extremely popular with those political elements which make up the Liberal majorities. The objections to the income tax are: 1. That it would be "class legislation," that is, it would make a distinction between the rich and the poor for the purpose of taxation and therefore destroy that equality of citizenship and civic duty which is the essence of our system. 2. That it would in effect be a double tax in the sense that the property from which incomes are derived would be separately taxed. 3. That to be effective it would require such inquiry into private affairs as to be a general offense. 4. That under the circumstances of American business life and of public it could not practically be enforced.

These, we believe, are the general considerations upon which the income tax proposition is being urged and opposed. We submit the arguments without prejudice.

It is not surprising that people in the United States should adjust their sympathies in the matter of the Brazilian war upon inferences of analogy between the Brazilian system and our own. But nothing could be further from the truth than to suppose that in Brazil, the so-called republic, bears any likeness to our own; that the late revolution, in the motives of those who enacted it, bore any resemblance to the revolution of '76," or that the present rebellion has any features in common with the late rebellion of our Southern States. The government of Brazil is a military despotism pure and simple, probably the only kind of government capable of sustaining itself among such a people. The Brazilians are a mongrel race largely Portuguese, partly Spanish, partly African, partly Indian in descent and there is nothing in their experience or in their inherited character to produce the civic qualities essential

to a truly representative system. Among such a people, government is necessarily the rule of the strong, and it matters not whether it be called monarchical, imperial or republican, for mere form's sake, because it must in any event maintain itself by force and be in fact nothing more or less than a military despotism. When the late Emperor Dom Pedro was stripped of his imperial powers in 1889, it was by the military forces which his own government had created. The new government has very naturally disappointed the hopes of many who had planned to rise by it and they are now seeking to bring about another deal. It is simply a fight of the "outs" against the "ins"; and, so far as we can make out, has no phase identifying it in character with those great popular and moral movements which in America and elsewhere have borne forward the banner of human rights. In all likelihood, success on the part of the rebels would result in restoration of the imperial line in the person of Dom Pedro's daughter, the Countess d'Eu, who is detested in Brazil for her ambitions and arrogant character. It is the boast of this woman that not the high and gentle qualities of her illustrious father, but the spirit of her cruel and notorious grandfather, is her inheritance; and it is for this reason that public opinion in Brazil, so far as there may be said to be any public opinion, is opposed to the imperial restoration. It seems likely that the present government must in the end win the pending fight, and this is probably the best outcome possible.

On Friday of last week the Senate refused, by a majority of nine, to confirm the President's nomination of W. H. Peckham of New York to be associate justice of the United States Supreme Court. This action is the more notable because it is the second of its kind within a month, the first rejection being that of Mr. Hornblower, to which the RURAL has already referred. In the case of Peckham there was no objection on the score of fitness. His character and his legal requirements—everything, in fact, which goes to make up judicial qualification—were beyond question or criticism. But Mr. Peckham belongs to the Cleveland wing of the New York democracy, which is opposed to that wing of the party represented in the Senate by Messrs. Hill and Murphy. These gentlemen raised the old point of "senatorial courtesy," claiming that they had been badly used because they had not been consulted with reference to the appointment; that in their own State it would be construed as a direct snub by the President, not only to themselves, but to the branch of the party to which they belong.

The result, as above stated, seems to prove that in spite of many denials and defeats, there still resides in the senatorial mind a belief that to the Senators from each State somehow belongs the right of sitting in judgment upon the appointments from or within that State. It was the denial of this principle which drove Conkling from public life, and which resulted indirectly in the assassination of President Garfield. It never had any reasonable basis; at its best it was a mere party device; and its exercise was always a scandal. To reassert it now is an attempt to restore a principle in appointments to public office in direct violence of the spirit of our laws and in its very nature calculated to promote political abuse.

This action by the Senate, which is claimed as a triumph for "senatorial courtesy," is naturally made much of by those who would like to see the old regime of senatorial bossism re-enthroned. The rejection of Peckham really looks like a definite backward step, but it is very much to be doubted it could have been accomplished, excepting under the especial circumstances which now exist. The Senate, as everybody knows, is Democratic by a round majority, and it is the darling wish of the leaders of the Democratic party to put through that body the tariff measure which has just been enacted by the House. This it is the effort of Republican policy to prevent; and its chance of success lies in the possibility of holding a sufficient number of Democrats away from their party allegiance. Mr. Hill and Mr. Murphy have probably been dealt with by the Republicans to this extent, namely, that they will stand with the Republicans in opposition to the tariff bill in return for Republican support in the matter of Peckham's rejection. It is hardly reasonable to suppose that men like Dolph, Allison and Hoar would join in the humiliation of a man like Judge Peckham, whose chief crime is that he is a foe to Tammany Hall and that in the late election he fought against certain bad nominations by his own party, unless something substantial in the way of political advantage were to be gained by it. Of course, this sort of thing is not a high motive in the conduct of public affairs, but sometimes the exigencies of politics force men of good impulses to do very wrong things. It is very largely this power of degradation which politics seems to have over very good men, that makes the RURAL so despise it.

The Nationalization of Railroads.

TO THE EDITOR:—In view of the many railroad systems being placed in the hands of receivers, it might be worth the while of our statesmen to consider whether the present may not be the appropriate time to nationalize our railroads.

People do not seem to realize that governmental ownership is a very feasible thing. What has been done may be done. What other countries can do this country can do—only rather more so.

Here is a list of some nations who understand that commerce is the nation's lifeblood, and who appreciate the need of owning the arteries where that lifeblood circulates. Those arteries are the railroads.

Bavaria is traversed by 3485 miles of railroads, of which the State owns 2982 miles.

Brazil only owns 1533 miles of its railroad system.

The Cape of Good Hope Government has 2250 miles that cost £16,949,722. In 1891 the gross receipts were £1,896,376, and expenses £1,117,649.

Denmark has 1000 miles of State-owned railroads. Finland 1895 kilometers.

In the Netherlands the State owns 986 miles out of a total of 1839 miles.

Portugal has 505 miles; Roumania, 1590 miles; Sweden, 1715 miles; Norway, 929 miles.

The Belgian Government operates 3241 kilometers, which at the end of 1890 had cost 1,341,245,043 fcs. The gross receipts were 142,815,489 fcs, and the expenses 84,049,923 fcs.

Prussia, in 1892, owned or administered 15,969 miles, while 1,354 were still in private hands. It is chiefly in the last decade or so that the Prussian government has bought the roads. In 1878 the State owned only 3,066 miles, while 11,066 miles were in private hands. A very large revenue is now derived by the State from the roads; their receipts from April, 1891, to April, 1892, were 967,624,000 marks, the expenses 606,816,327 marks. Australia, with as large an area as the United States and about one-fifteenth of our population, makes its railroads pay the government a fair return, as follows: The colony of Victoria owns 2,764 miles, costing £36,341,626; receipts for 1892, £3,298,567, and expenses £2,310,645. South Australia has 1,812 miles, which paid five per cent profit to the State. Queensland 2,304 miles, costing £15,943,019; receipts, £974,703, expenses, £640,494. New South Wales, in 1892, had 2,185 miles, which had cost £33,312,608; receipts, £3,107,296; expenses, £1,914,232. New Zealand has 1,859 miles; receipts, £1,115,431; expenses £706,517. Even Chili owns 685 miles of railroad.

I do not give this as a complete list of all State-owned roads, but just to show that the owning and operating of railroads by government has been and is found not only possible but profitable. It cannot be too strongly insisted on that railroads are the high-roads of to-day, and, as such, should be as much the property of the people as are and have been the common roads of the past.

The nation, in purchasing its railroads, goes in debt for a property that must annually improve in value as population increases. The bonds given in payment could be easily renewed; or, if it seems best to wipe out the debt, a sinking fund of 1 per cent per annum, with compound interest at 3 per cent, would cancel the debt in 47 years; or a sinking fund of 3/4 per cent per annum would clear off the amount in some 85 years.

I commend the study of these figures to those who are considering whether it is better that the people should own the railroads, as they may, or the railroads own the people, as they do.

EDWARD BERWICK.

Plan of the State Exchange.

TO THE EDITOR:—In your note to Mr. A. P. Hall's article to you of a week ago, you state that the plan I proposed for establishing a Central Agency for shipping fruit to Eastern markets had already been proposed by the Fruit Exchange.

Will you kindly inform me whether the Fruit Exchange has ever seriously intended to ship green fruit to market this year?

I have never seen one word indicating their intention of doing so. The Fruit Exchange was organized to market dried fruits, and even when the State convention met at San Francisco in January, not a word was said about shipping green fruits, and I do not believe they intend doing so this year. They said they might do so eventually.

The course pursued by the Exchange is, it seems to me, misleading. Many inquiries have been made, but no one seems to be able to answer satisfactorily. If anything is to be done toward shipping green fruits by the Exchange, it ought to be known. The shipment of dried fruits cuts comparatively little figure in this county. It is nearly all shipped green.

Penryn, Placer Co., Feb. 15, 1894.

The above letter was submitted to Mr. B. F. Walton, President of the State Fruit Exchange, who replied as follows:

The State Fruit Exchange was organized on broad lines to cover the entire fruit industry, and will eventually do so. It is not deemed good policy to undertake all branches of the business at once. It will be well occupied for the first year in organizing the State, furnishing information concerning everything that in any way affects the fruit industry or comes in competition with our fruit in any of its forms; establish grades and handle as much dried fruit as possible. Hence I think your correspondent is substantially correct in his conclusions as to what will be undertaken the first year. We will call a meeting of the Directors about the first of March and decide upon the scope of the work to be undertaken by the Exchange for this year, and publish the same for the information of all interested. By that time Mr. Adams will be able to report his success in working up the organization and know something of what we have to do with.

In all new undertakings people generally expect too much. It takes time and labor to work up an extensive business. If we get on to the right plan and work up a good and profitable business in dried fruit and establish an authentic bureau of information, we ought to be pretty well satisfied for this year.

Wilson Tariff on Prunes.

TO THE EDITOR:—When I proposed the tariff resolutions that were adopted by the late State Convention of Fruit-Growers, I supposed that substantially one cent of prune tariff protection remained, but from present advices from Washington I was mistaken.

The Wilson tariff bill as it passed the House provides for a tariff of only 20 per cent ad valorem on prunes. Judging from the practice of admitting foreign importations at a very low valuation we may expect to see prunes come in on a rate of one and one-half cents per pound and pay a duty of less than one-quarter of one cent per pound, thus reducing our protection of \$40 to about \$5 per ton. The importations this year would not allow the grower over one cent, and if the Wilson bill had been the law, one and one-half cents would have been the foreign valuation, and one-fifth of one cent, or \$4 per ton, the duty paid.

The question is, will the Senators of the United States consent to the reduction of the values of American labor and products to European standards?

We think not, especially if wise councils prevail and proper influence is brought to bear.

Personal letters to Senators will have great weight and be a satisfaction to the writers as a duty well performed. W. H. AIKEN, Wrights, Feb. 12, 1894.

Rainfall and Temperature.

The following data for the six days ending 5 A. M. Tuesday, February 20, 1894, are from official sources, and are furnished by the U. S. Weather Bureau expressly for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total rainfall for the six days.	Total seasonal rainfall to date.	Total seasonal rainfall last year to same date.	Average seasonal rainfall to date.	Maximum temperature for the six days.	Minimum temperature for the six days.
Yuma.....	1.42	.07	2.85	72	84	
San Diego.....	.14	3.56	3.15	6.96	64	36
Los Angeles.....	.20	6.24	17.46	13.42	70	38
Keeler.....	1.60	2.89	2.17	60	24	
Fresno.....	.60	5.68	6.54	5.61	60	30
Sacramento.....	2.92	12.40	18.31	13.66	58	36
San Francisco.....	1.75	16.41	16.46	17.34	54	38
Red Bluff.....	.95	16.71	24.21	16.64	56	82
Eureka.....	2.72	41.16	28.24	31.30	50	82

FRUIT MARKETING.

An Oregonian's Observations in Eastern Markets.

S. A. Clarke, a pioneer prune producer of the Willamette valley, writes for the *Oregonian*, from New York, a sketch of his observations at the East during the present month. We extract the following:

It is shown that there were 9,000,000 pounds of French prunes in bond in New York warehouses on January 1st that can be bought for an average of 6 cents or less for "the four sizes," after paying 2 cents duty. Importers are waiting the passage of the Wilson bill, but as it will not go into operation before June, and the active demand for prunes will be over by that time, they will have to be sold with duty paid, which will not net the French shipper over 3 to 3½ cents at home. These prunes are put up nicely in 25-pound boxes, as those of the Pacific coast are, though with such long experience European growers have learned to pack as well as cure their fruit well. With the imported prunes and the increased product of California, the supply in American markets is twice the usual quantity, while the demand is less than ever known, because the people who use them generally have no money to buy with, even at prices lower than ever.

The future of this market depends on the speedy revival of industrial activities. We hear of such a revival as imminent, but the discouragement and want of confidence in business circles can hardly be lifted in time to help the dried fruit trade this spring. It seems strange, too, that while prunes are unsalable, apples, peaches and apricots are sold at high prices. The apple crop was a failure, and the peach and apricot demand comes from well-to-do customers. I heard peaches quoted at 11 to 12 cents, wholesale, for unpeeled, and 16 to 18 cents for peeled. The canned fruit trade, too, is very dull, though few fruits were canned last year. The fact seems to be that canned goods are replaced by choice dried fruits, and we may expect this to be more the case in the future. It is rather paradoxical that while canned fruits, raisins, currants and prunes are lower than ever before, peaches and apricots are very high. It seems the peach crop of the East was marketed green at low prices, too.

There is no duty on Zante currants, and a dealer told me at Minneapolis that the crop of these was millions of tons, and so abundant that prices at Chicago ranged at \$1.16 to \$2.25 per cwt. for different grades. At Minneapolis I heard Porter Bros. 'phone a customer that good dates were 3½ cents a pound. At a fruit stand there I saw choice dates labeled 5 cents a pound. The crop of dates and currants produced in the Mediterranean has been immense, and raisins were so low and abundant in California that I heard of raisin-growers last summer who turned hogs in to fatten in their vineyards. So the poorer classes have dried raisins, Zante currants and dates to fall back on for fruits, and prunes to the extent of tens of millions of pounds must be sold during March, April and May.

One thing is very apparent: that we must grow good fruit, of large size and perfect ripeness, and cure it and pack it so well as to insure good keeping qualities, and please the eye as well as satisfy the taste. It has been a splendid object lesson to visit great Eastern cities and study the needs of their trade, as well as the methods pursued by dealers and producers. In New York I have seen representatives of great wholesale houses visit the brokers and pass by Oregon prunes for those of California, with the single remark: "Don't want anything new!" They did not dispute the quality or the price. Their customers had learned to buy and sell the California prunes, and their customers had learned to eat them. It was too much work, especially these times, to introduce anything new. I told one such—a very bright man, too—that he had got to come to it; that Oregon took nearly all the premiums on her fruits at Chicago, and wherever our prunes were known they commanded a preference, as more tender, of more excellent flavor and better quality of fruit; that our Italian prune excelled the same grown in Europe, and could not be successfully grown in California. He listened and acquiesced, but ordered fifty sacks of Californias and five boxes of our Italians.

Meantime, the people who know Oregon prunes, especially the dealers who handle them, use them in preference

to all others, either Californian or French, and believe they will grow in favor as their merits become known. This will require time, but we must work in patience and learn excellence and have faith in the future. The present year is not a fair test, because the conditions are abnormal. It is necessary to pursue the most economical methods and to combine economy and excellence in cultivation as well as in curing the fruit. As long as this Administration shall hold power, the commercial world dares not hope for protection.

Those growers who marketed their prunes early did the best. It is never well to hold products too long. Two important points are evident: One, to grow no small prunes, but to strip trees down to a bearing capacity that will insure good-sized fruit. Prunes must be carefully graded as to size. Every box must be marked exactly its grade: "40's" means between 40 and 50 to the pound. Over 80 to the pound do not sell well. They sometimes cure prunes that go over 100, as high as 130 to the pound, and such sell now in New York at not over four cents. Prices have fallen, since fall trade was over, 25 to 33 per cent, and so long as uncertainty exists, little, if any, improvement can be hoped. The same conditions prevail all over the East; from Chicago to New York the world waits for something to turn up, and many think spring will bring improvement.

It is also necessary to put our crop on the market as early as possible, before foreign prunes are introduced in immense quantity and before California has shown its full force to depress prices. As it is slow work to sun-dry prunes, and most of their prunes are so cured, we can cure ours, put them in bulk to go through a sweat, and by prompt effort market them early and have the money for them before the world's surplus is offered for sale. This will require active effort and good management, as well as a labor supply that can be depended on as reliable.

Californians who pack their prunes in boxes take great pains in facing them nicely. They select fruit that is soft and pliable and work it to a smooth surface—what is called "thumbing" it—and face the box with these, so that after undergoing pressure they look very nice. We must take pains to have appearances with us; our boxes must be of good lumber and well made; the wax paper the prunes are faced on should be of good quality. They said our prunes were crusted with a syrup which penetrates the thin wax paper. I explained that none of our prunes are "processed" after they are cured; that this syrup on their surface is only the richness of the fruit that exudes and shows its finer quality and flavor. While such facts are in our favor, the world thinks, at first, it is artificial; that we have doped it, or, as Californians call it, "processed" the prunes. After sun-drying, they dip in some scalding solution to destroy insect life and cover up the dust that settles on it. Some New York dealers buy sacked prunes, and then process them themselves, gaining weight enough to pay for boxing and all this expense. "There are tricks in all trades," and it is worth while to know them.

The past year was so much more rainy than usual that the prunes with us were watery, and yielded less per cent than usual in curing. It seemed necessary to dry them thoroughly, and, as a result, the sugar in the fruit has crusted the surface, because there was not enough moisture to hold it in solution. It will be nice work to know every year how to cure prunes to suit the season, for as seasons differ they require fruit to be cured to suit conditions. Any one who thinks fruit-growing will require no study will be apt to realize his mistake in due time.

The Zante currant, that pays no duty, has flooded our markets the present year, and for years to come we may expect a reduced tariff to work harm.

THE DAIRY.

Lessons from Recent Dairy Shows.

TO THE EDITOR:—In again referring to the Columbian dairy tests I suppose there are few, if any, people who will not agree with me in considering them the most perfectly arranged and carried out of any ever undertaken at any time or in any country.

The results brought out afford not a few practical lessons worthy of consideration by practical dairymen. Especially is this the case in regard to food consumed in proportion to live weight, in regard to which I propose taking a few samples from the tables published, for the purpose of giving to the public all the details of each test.

It has heretofore been and will probably continue to be a rule with professional instructors, when giving answers to inquirers after knowledge in regard to proper rations for cows, to allow, or advise using, a certain number of pounds of specified foods in proportion to the 100 pounds or the 1000 pounds of live weight in the animal, as necessary to maintain it in either good growing or milking condition. That is a theory, the truth of which is not borne out by practice.

Men who have worked among cows for a number of years know quite well that mere size and weight in a cow have very little to do with an appetite governed by capacity for production of either milk or meat. Given suitable feed, whatever the weight, the milch cow that eats most ought to produce most of that kind of produce that is most wanted by the owner. If she does not do it she is not of the right sort for the purpose for which she is kept. She is one of the kind to be got rid of—weeded out.

There are many small cows that will consume more food than other cows of 40 or 50 per cent more weight, and, at the same time, convert no more of it into milk or butter.

The fact is that if the large cow makes the most profitable use of the food consumed she is, on the whole, the best cow to have; but if she does not profitably use it, she is, if anything, a worse cow than the small one of the same class. Neither one is good for either the farmer or the dairyman, either of which must be guided in the class of cattle he keeps by the use he intends putting them to. In

other words, the kind of products he expects to make his profit from must have the first consideration with him.

I am not by any means trying to make out that all small cows are great eaters, or that they, as a rule, consume more food than the larger class of cows. We all know that a cow of any size or breed cannot produce a large quantity of milk and butter without consuming a proportionately large quantity of nutritious food; and, as a rule, the cow that consumes the most of these in a given time is the most profitable. It will not do to limit a cow to a certain amount of food, which shall last her such a length of time that she can neither consume nor produce to her full capacity; by so doing the products of the cow would be curtailed, consequently the profit made, in proportion to the food consumed.

As regards weight of Jersey cows that went through the ninety-day butter test, making more butter than the Shorthorn cow Nora, of which there were eleven, not counting the one that died before the test was finished, I find that six of the eleven weighed over 1000 pounds each, while out of thirteen Jerseys that made less butter than Nora only four weighed over 1000 pounds each, so that there was a larger proportion of heavy cows among the best Jerseys than among those that made the least butter.

The best cow, Brown Bessie, weighed 1048 pounds, the heaviest Jersey cow being Ida Marigold, that weighed 1184 pounds; she was the third best cow in the ninety-day test. The average weight of the fifteen Jersey cows that were in the thirty-day butter test was 973½ pounds, seven of them being over 1000 pounds each, while the ten cows that went through all the three tests from beginning to end averaged about 1020 pounds each, so that the larger class of Jersey cows made for themselves a better record than the light weight cows.

By way of comparison we will take from the cows in the 30-day butter test the third, fourth and fifth best cows with their respective weights and other details. The third best cow in the test is the Shorthorn Kitty Clay 4th, weight 1348 pounds, cost of food for 30 days \$8.49, value of butter \$28.52, net profit, \$20.03. The fourth best, Stoke Pogis Regina, Jersey; weight 886 pounds, cost of food \$8.19, value of butter \$27.76, net profit \$19.57. Fifth best, the Guernsey cow Purity, weight 1150 pounds, cost of food \$5.57, value of butter \$24.95, net profit \$19.37.

The Jersey cow in this case was probably overfed, as she gained 37 pounds in live weight, against a gain of 28 pounds in the Shorthorn and 14 pounds in the Guernsey cow. This live-weight gain was not taken into consideration in the 30-day test.

I will now quote from the table of the 90-day test, and take a Shorthorn and a Jersey that have as nearly as possible the same credits, the gain in live weight in the latter being four pounds, while the Shorthorn shows a loss of four pounds and weighed at the close of the test 1361 pounds. The cost of food for the Shorthorn cow for 90 days was \$20.43, value of products \$67.86, and net profit \$47.19. This cow is Bashful 2d, the 30th best cow in the test. The 31st best is the Jersey, Daisy Hinman, weight 903 pounds, cost of food \$22.22, value of products \$28.68, net profit \$46.05.

It will be noticed that the Jersey cow weighs 458 pounds less than the Shorthorn, costs \$1.79 more for feed, and shows a net profit of \$1.14 less. In this case the large cow is the best.

In the same test the best Shorthorn cow is Nora, placed between two Jerseys that weigh 970 pounds and 934 pounds respectively. Nora weighed at close of test, when all weights were taken, 1235 pounds, cost for food \$24.11, and shows a net profit of \$52.63, the total value of her products being \$76.80. She was the 16th best cow in the test. The 15th was Albert's Glenn, Jersey, weight 970 pounds, cost of food \$23.36, value of products \$76.94, net profit \$53.55. The 17th best cow was the Jersey, Exile's Lulu, weight 934 pounds, cost of food, \$23.79, value of products \$76.33, net profit \$52.52.

The best of the last three cows is a Jersey. She shows a net profit of one cent a day over the Shorthorn cow that weighs 270 pounds more. The difference in the value of the products of the three cows is covered within a range of 60 cents, that being the difference between the two Jerseys, while the Shorthorn produces but 13 cents worth less than the better of the two Jerseys, so that for all practical purposes they are about equal in their merits as dairy cattle, there being so little difference that it would not, or could not be noticed in ordinary dairy practice.

In making comparisons between these Shorthorns and the Jerseys named above it is well to remember that Daisy Hinman, that came 31st in the 90 day test, is one of the cows that had a phenomenal record before coming to Chicago, hers being one of 24 pounds to ounces for one week. That, of course, was a private test. At Chicago she produced 155.15 pounds of butter in 90 days and had her last calf Jan. 4, 1893, so that by the time the test was finished she had been milking 7½ months, as against the 5½ months that Bashful 2d had been milking.

When we take into consideration the live weight of the above three Shorthorns and compare it with the four Jerseys that came through the test with practically the same results, only that it cost more to feed the Jerseys than it did to feed the Shorthorns, we see no place for that much talked of charge that should be made for the maintenance of extra weight of carcass in the general purpose cow.

The special dairy cow is not supposed to put any of her food into flesh, it ought all to go into the pail. However, upon referring to the tables of the 90-day test I find that six out of the 12 best Jerseys made a total gain in live weight of 504 pounds, an average of 84 pounds each. One might have expected that the cows making least butter would have made the greatest gain, but the contrary is the fact, all of the four Jerseys at the bottom of the list lost in weight, while the best cow, Brown Bessie gains 81 pounds, the third best 78 pounds and the seventh best gains 108 pounds live weight in the 90 days. These figures represent some of that cow meat that "can't be got out." It is in their best cows.

ROBERT ASHBURNER.
Baden, San Mateo Co.

CORRESPONDENCE.

A Californian in Washington.

TO THE EDITOR:—Having promised you a line from here, and if I may be pardoned for delaying, I hope now to fulfill my promise as best I may. Electricity has so abridged the space and has become of such general utility that it is difficult to find agreeable topics for a letter that may not have become stale and forgotten on our coast by the time the overland flyer delivers the letters.

One has to take it for granted that all the most important news and transactions at the national capital goes west by the wires, hence a letter must be confined to minor topics and observations not usually found by the wires.

WINTER TRAVEL EAST OF THE MOUNTAINS.

The journey hither was pleasantly and successfully made, notwithstanding a Nebraska blizzard prevailed from Cheyenne to Omaha, and from thence to Chicago in a modified manner. During the time the mercury registered from 20 to 30 degrees below zero. The wind blew a gale, and the cold so reduced the heat of the engine that it caused the train to lose three hours by the time we reached Council Bluffs. Wherever the steam struck it turned it to ice and heavy frost. The irons under the cars were covered with ice and the windows so thick with frost as to obstruct the outward view entirely. The windows are double and the frost was on the outer panes, the inner ones being free from it, showing that the frost was the result of the steam and not owing to the warmer temperature of the car. Indeed, these were hardly warm enough for comfort, although every effort was made by the trainmen to render the car comfortable.

East of Chicago the weather began to moderate or had not been brought up to the western pitch. Snow prevailed from the Sierras to the summit of the Alleghanies, with the exception of the vicinity of the sink of the Humboldt, where the ground was bare. But the snow was light all the way, and never more than four inches in depth except where drifted.

East of the Alleghanies the ground was bare and the temperature warm. As our train sped down the Juniata and the Susquehanna it became still warmer, and the, to me, remarkable phenomenon was seen of a number of teams plowing on southwestern slopes on the 25th of January. This convinced me that there was no frost in the ground and upset my previously conceived notion. The "ground hog" could have seen his shadow easy enough on that day, still I think his appearance was a little premature if he ventured out.

Those of us that came straight through without stopping made the journey to Washington in something less than five days. That is to say, we left Sacramento city at 10 o'clock at night on January 20th and arrived in Washington at 5:55 P. M. January 25th.

Forty-two years ago I made the same journey from Ohio in four months and six days and made it quickly, too. The contrast can only be realized by those who made both journeys. Volumes could be written covering the span of time, but the rush of events and improvements does not permit it.

THE OBJECT AND THE PERSONNEL.

The gentlemen composing the party were ex-Senator Wm. Johnston of Sacramento, E. McGettigan of Solano, W. P. Edwards of Petaluma, J. M. Gleaves of Shasta, and George Ohleyer of Sutter. Mr. S. D. Woods of Stockton was also selected to come, but professional business prevented his doing so.

The object, as you know, was to induce, by statistics and argument, the Committee on Rivers and Harbors to insert in the coming bill substantial appropriations, to improve the navigable waters of our State. The delegation, soon after their arrival, organized by the selection of Senator Johnston as chairman, and J. M. Gleaves as secretary. Immediately consultations were had with our members of Congress, who were all quite favorably disposed and did all in their power to smoothen our way to the committee's room. Mr. Caminetti, being a member of the committee, at once secured an agreement that we should be heard the coming Monday, January 29th.

It is hardly necessary to say that we were promptly on time, had a most respectful hearing and believe we made a very favorable impression.

The conference having been wired to the San Francisco papers I will not consume time and space for its reproduction here. Suffice it to say, that should the national finances not be an insuperable bar, California will fare well.

After the meeting the members of our delegation went to work separately and collectively on members of Congress from other States with, I hope, good results.

Mr. Herman of Oregon was specially friendly and active for the benefit of the Californians, and being also on the Committee on Harbors and Rivers and an old member, will carry much influence.

VISITS IN WASHINGTON.

Social life in Washington was at its zenith on our arrival and the most of the remaining time before the Lenten season was made. Receptions, parties and calls were a daily occurrence, but our delegation not being in the swim, they amused themselves as best they could on dry land. Johnston and I had a very pleasant call on John Trimble, who is the secretary of the National Grange, at his office, 514 F street. We were not strangers, hence required no introduction, and spent an hour most pleasantly and profitably. One day on our rounds we had the pleasure of meeting Mr. R. H. Thomas, who is secretary of the Pennsylvania State Grange, and Hon. C. H. Knott, master of the West Virginia State Grange, and a number of the upper House of the legislature of his State. These gentlemen had been at the National Grange when its session was at

Sacramento in 1889, and overflow with praises of our State and people.

CALIFORNIA AT THE WORLD'S FAIR.

California's exhibit at the World's Fair captured the entire Eastern visitors to the great show. You find them on the streets, in the hotels, on trains—in fact, everywhere—and when it is learned that a Californian is present, everybody wants to know him, and he is at once loaded down with questions. I have not seen any one yet that does not at some time hope to draw his breath in our glorious State. Of the exhibits they will say with but little variation, "I doubted the stories of your wonderful productions until I went to Chicago, but I doubt it no longer." When asked to come now, and to the Midwinter Fair, they will say, "O yes, I would like to, but times are too hard, money too scarce and fare too high."

I was once told by a great California railroad official that railroads were built and operated for the money to be made, very much like other enterprises; but just now it seems to me the overland roads are operated to see how little shall be made. It is the occasion of a century for these roads as well as for our State, but it seems they do not see the point.

The other day I saw an elderly gentleman from eastern Oregon, and who had been in California also. He was profuse with praise, as everybody is over our State, and remarked that the most delightful place he found was Los Gatos. Of course we praise all sections to suit the occasion, and praised Los Gatos; and just as I was about to observe that he seemed *permanently benefited by the cure*, he told me in a low tone that he was a superannuated minister. Just think of the consequences had I propounded the question!

Of all the places I ever was in, this beats for the habit of tipping. The visitors to Washington are expected to bring loads of money, and a good many of them act upon it until they have to borrow to get away. A few days ago I heard of a man who was making his first visit who tipped everybody, and, as he expected to plunge into the prevailing swim just before Lent, he purchased a claw-hammer coat with which to enter society; but before he got an opportunity to use it, his change gave out and he retired from the field.

THE SLOT MACHINES.

The slot-machine business is also carried further here than anywhere else. Your weight, your fortune, music and the Lord knows what, all beckon you for a copper or a nickel, and, though dumb as they are, one can hardly pass them by without contributing the small sum required. To show you how far this feeling is shared, I was an eye witness to the following: The other day I came down from the Capitol in a two-horse Herdic, which is nothing more than an inclose car on wagon wheels, carrying 10 to 12 passengers. The fare is five cents, or six for a quarter, and you can ride to the end of the route, whether it is five rods or five miles. The passengers put their fare into the slot; the driver has nothing to do with it, except to furnish change when desired. On this occasion the driver was stopped and a man entered the vehicle and, passing up to the slot machine, deposited his nickel in the slot, then pulled the strap, stopped the wagon and left. It was, of course, a most singular proceeding, but evidently he had become so accustomed to feeding the slots that he took it for granted that there was one in the vehicle and his conscience would not allow him to let it go by unfed. A wag-gish passenger remarked, when the man was out of hearing, that he (the man) had better patronize the Herdic slot with his coin than the one under his nose with the stuff his coin had secured for him.

We have made several attempts to see some of the big men, but so far have not succeeded to our heart's desire. On two occasions Senator Johnston and I tried to find the Secretary of Agriculture, but on neither occasion was he in, although it was during business, or rather visiting, hours. Lastly, Mr. Gleaves and myself went to the Agricultural Department for the same purpose, with similar results. However, on this occasion we met the Statistician, to whom about 16,000 country correspondents make their monthly reports of crop conditions and other matters, as they are wanted. The present Statistician's name is Robinson, and he treated us with marked courtesy and attention.

On yesterday, Mr. Gleaves and I entered the East room of the White house, where, about 1 P. M., in company with fifty or more visitors, we expected to see and shake the hand of the President of the United States. Some specially important business prevented his coming, for which he expressed regrets through one of the ushers. It can readily be seen that White House rules must necessarily give way occasionally to the more mighty affairs that engage the attention of the Executive.

GEORGE OHLEYER.

Washington, D. C., February 11, 1894.

WHAT THE TELEGRAPH SAYS OF THE APPROPRIATIONS.

WASHINGTON, Feb. 15.—A few days ago it was reported that there was available \$25,000 for snagging the upper Sacramento river. It is now ascertained that there was on January 1st last \$79,000 for the Sacramento river and about \$97,000 for Oakland harbor. This is a continuous appropriation and has been used and will be used from month to month as required.

Representative Caminetti will not be satisfied with the \$75,000 allotted to the Sacramento river and the \$30,000 for the San Joaquin by the river and harbor committee in the new bill. He, as well as the committee of Californians now here, reasonably expected to secure much larger appropriations. However, as the entire amount appropriated in the new river and harbor bill will fall short of \$10,000,000, and may not exceed \$8,000,000, it is not likely that these appropriations for California will be increased much if any. The Southern States are faring much better. Two hundred thousand dollars will be allotted to the Arkansas river, a stream that is but little navigated.

Oregon always secures the lion's share of Pacific coast river and harbor money, and will this time. Representa-

tive Herman, though a Republican, is an old and influential member of this committee. The Washington State Senators and Representatives make frequent complaints against what they term this unfair discrimination in favor of Oregon merely because that State has Mr. Herman on the committee, but their efforts will be unavailing against Herman's "pull," and Washington State will fare no better than California, if as well.

There does not seem to be much chance of an appropriation for a deep harbor on the southern California coast, principally because of the economical tendency of this Congress, but another reason is because of the contention between the supporters of San Pedro and Santa Monica respectively.

Frugality, Economy, Thrift.

TO THE EDITOR:—The evidences of thoughtful consideration of public matters shown in your observations "From an Independent Standpoint" each week, render this department of the RURAL of great value to thinking persons. I was especially interested in your remarks under the above heading, February 10th, on the effect of the hard times on the rate of wages in California and of the necessity of personal economy at this time.

Discussion as to the cause of the present condition of things is in good part wasted, unless it is sought thereby to find a remedy. This remedy, I am inclined to believe, is to be found principally in the wider adoption of frugal and saving habits in this State. In the Eastern States and abroad the term "Californian," as applied to our citizens, has come to denote a person profuse in his expenditure and reckless in speculation—one who had rather fling away pennies received in making change than bother himself with taking account of them. Such a reputation may be pleasing to gamblers or profligates, but sensible men should be ashamed of it and by their practice and example render it less common than it is at present.

It is by looking after the pennies that New England has been able to accumulate capital, the flow of which to the West has been largely instrumental in developing that flourishing section of the Union. By a frugality now almost proverbial the French people, a century since among the most wretched in Europe, have become the most prosperous.

Looking at the question of the hard times in its broader aspect, the fact should not be lost sight of that the advance of civilized nations is due almost wholly to the accumulation of capital, and this in turn is due to the fact that certain classes of their citizens spend less than they earn. This frugality is the basis of the prosperity, and, it may even be said, of the existence of modern communities. Natural conditions may be exceptionally favorable, but where thrift is lacking, such advantages are of little value. If the existing depression makes these truths so evident to a large class in California, as to lead to a change in their habits, its evils will be only transient.

It is not surprising that the first effect of the hard times should be a reduction in the rate of wages here, in nearly all vocations. There has been a tendency in that direction for some years past, and the present depression has only accelerated an inevitable movement. The current rate of interest in a community is the best gauge of profits; the former being high indicates that the latter are correspondingly large, thus admitting of a liberal scale of wages. Although interest rates in California are still higher than in the older States, they have declined nearly 50 per cent during the last 20 years. Then, again, owing to cheaper railway and steamship fares, wages not only tend toward equalization in this country, but also as between this country and Europe. We may exclude Manchester cottons and Birmingham hardware by our tariff, but we are not likely to pass laws prohibiting the immigration of the increasingly intelligent artisans who make these articles should they wish to go to Connecticut or to Massachusetts, to offer their labor in competition with those already engaged in like industries in the States mentioned.

Although travel is cheaper from Liverpool to New York than from the Eastern States to California, in the long run the working of the economic principle which tends to equalize wages between New and Old England is operating to reduce them here to the Eastern level. Heretofore this principle has not made itself sensibly felt, but with the lower railway fares overland, which are inevitable during the next ten years, and with the completion of the Nicaragua canal, its effects will without doubt become more apparent.

WILLARD B. HARRINGTON.

San Francisco, Feb. 16, 1894.

THE IRRIGATIONIST.

The Water Supplies in the Arid Regions.

Part II.

By J. W. Powell, Director of the U. S. Geological Survey.

The Sources of Water Supply.

The preliminary question of the duty of water having been examined, it is proposed to indicate the source of water supply for the regions of the United States where irrigation is practiced. The rainfall of the arid region is variable, ranging from 3 to more than 20 acre-inches per acre of surface. It is to be carefully noted that the rainfall is variable not only from district to district, but also from year to year and month to month, and that the yearly and seasonal variations are very great.

Peculiar Conditions.—There are large districts in the arid region where, in extreme cases, not a drop of rain falls for an entire year, while in other years the very same regions experience terrific storms, and utterly arid deserts are suddenly transformed by the creation of storm-water

streams, and rivers roll as floods, creeks as torrents, and brooks as leaping waters. Scattered throughout the arid region are many mountains towering above the valleys and performing the beneficent function of condensing the waters from the heavens and gathering them into lakes as natural reservoirs for perennial streams. These mountain-gathered waters constitute the most important supply for the fertilization of the land. Throughout the arid region there are many comparatively large districts which have no perennial streams, and these districts increase in size from north to south until districts as large as any one of a number of the Eastern States are found without a single living stream. But all of these districts without permanent rivers and creeks have storm-water streams that are sometimes of great volume. Throughout the arid region streams rise in the mountains and flow into valleys so arid that the waters are all consumed by the thirsty soil and evaporate into the wind-vexed air. Sometimes the sands do not drink up all of these waters, and salt lakes are formed, from whose noxious surfaces the waters are discharged by evaporation.

Having determined the mean rainfall of the arid region with a reasonable degree of accuracy, we have next to determine what becomes of the rain.

"Runoff" and "Flyoff."—When it falls upon the earth a part of the water is gathered into streams and is carried away into sinks, lakes and the ocean; let us call all this stream water *runoff*. Another part is carried away by the air, and this air-borne portion is in part evaporated from the surface of the land and from the leaves of plants, while another part is delivered to the air by transpiration. All this air-gathered water is drifted away by the winds, and therefore let us call it *flyoff*. The rainfall, then, is divided between runoff and flyoff.

The Geological Survey has been engaged for several years in an investigation designed to determine the relative proportions of flyoff and runoff, in order to properly account for the disposition of the rainfall made by nature. It is proposed to give the general results of this investigation.

Knowing the rainfall, we must then determine the runoff, and this is done by gauging the streams. All the streams have not been gauged, but many have been, and these have been selected as typical cases.

An Analysis of Runoff.—It has been found by observation that the runoff is variable in three ways: 1. It varies with the amount of rainfall. If the rainfall is greater the runoff is greater. 2. It also varies with the character of the rains. When the rains come in great storms a large proportion runs off. A gentle shower is found to be almost wholly evaporated. If a year's rainfall is concentrated into two or three great storms, it will largely go into the streams, but if distributed through many showers it will be returned to the air. 3. Again, topographic conditions greatly influence the runoff. In a region of steep hills, mountains and canyons, with many naked rocks, the runoff is very great; in a level district, where loose sands and soils prevail, the runoff is small. Thus the rainfall becomes runoff in an unequal degree by reason of the inequality of storms and also by reason of the inequality of topographic features.

In gauging the rivers of the United States, results have been reached as follows:

Where the rainfall is 40 inches the runoff will be 20 inches; one-half is runoff and one-half flyoff. Where the rainfall is less, the proportions are changed. With 30 inches of rainfall, 18 inches will go to the air and only 12 inches to the stream—two-fifths runoff and three-fifths flyoff. But the amount will be variable in different districts, because of topographic conditions. With 20 inches of rain the amount of runoff will be 5 inches—one-fourth runoff and three-fourths flyoff. But the proportion will vary by reason of topographic conditions. Where the rainfall is 10 inches the runoff is a little less than 1 inch—one-tenth runoff and nine-tenths flyoff, but variable by reason of topographic features. As rainfall diminishes, topographic conditions have greater control. At 10 inches and below, topography almost wholly controls the runoff. Where the rainfall is the same, the streams may be few and small or many and great. There are large tracts of country in Arizona, southern California and Nevada where 10 inches of rainfall never gives a permanent stream and rarely a storm stream. There are other districts of country where 10 inches of rainfall gives birth to many living waters. If the lands are comparatively level the sands drink all the water; if the lands are traversed by canyons carved by rivers that have their origin in the mountains, a labyrinth of lateral canyons is formed and the rainfall is promptly gathered into streams which roll into salt lakes or into the sea. The rain in the desert is gulped down by the sand; the rain in the canyon is gathered into a creek.

What Becomes of the Rainfall?—We must now get a clear understanding of what is meant by runoff. Most of the streams of the United States ultimately discharge into the ocean; all of the water thus carried to the sea is runoff. Some of the streams of the arid region empty into salt lakes; all the water thus discharged is runoff. A very large number of small perennial streams of the arid region are discharged into what are usually called sinks—that is, into small valleys, where their waters are evaporated; all this water is runoff. There is still a great multitude of small storm-water streams that live only a short time after a rain and whose waters are gathered into sand valleys and evaporated, or into perennial streams; all such waters are runoff. Much rainfall sinks into the soil; a part slowly evaporates and becomes flyoff, but another part issues again as springs, and spring water is here considered as runoff. Rivers, creeks, brooks, storm-water streams and springs constitute this available water which we call runoff.

The water supply for irrigation in the arid region must mainly come from the runoff where the rainfall is 20 inches or less, for, with some exceptions, it is the runoff water which is used in irrigation. Crops are not raised throughout the entire season, but during a period varying in different portions of the country, and with different crops, from 60 to 150 days. If the rainfall of the entire year would come during the growing season, with a fair distribution

throughout the days, a large part of the arid lands could be cultivated without irrigation, but, in fact, the rainfall is unequally distributed throughout the year.

Inequalities of the Rainfall.—The inequalities of rainfall through the season are very great. Everywhere throughout the arid region it often occurs, now here and now there, that no rainfall comes during the growing season, so that it is necessary for the farmer to provide by irrigation water for the entire crop. He may have rainfall and he may not. If, therefore, his agricultural operations are to be successful from year to year, he must provide all the water necessary for the crop. The water which can be utilized for this purpose must come from the runoff, with exceptions hereafter to be mentioned.

We have given certain laws relating to runoff for definite amounts of rainfall of 40, 30, 20 and 10 inches. Now, it is proposed to apply these laws to the arid region by district of country, and to show the average runoff by such districts; and for this purpose we shall consider runoff in zones or regions where the runoff varies from 20 to 30 inches, from 10 to 20 inches and from 0 to 10 inches. Of course, these zones everywhere run into one another; definite lines of boundary are not made in nature, and only approximate lines of boundary can be laid down.

(To be Continued)

Willows Used to Build Dams.

The willows which grow along the shores of the Mississippi river are of no use in the arts, but when it comes to building a dam the engineers find nothing half as well as the humble willow. It lines the shores, and can be easily reached from the barges whereon it is transported, and it is so soft that it is easily cut and handled. It is woven into a great, long, continuous mat.

One end of this is anchored to the shore, says the *Waverley*, on one side of the chute that is to be dammed, and the process of weaving is thence carried on straight across the stretch of water on a peculiarly shaped boat called a grasshopper. As fast as the mat is woven on grasshopper it slides into the water at the lower end of the inclined weaving rack, and it is laden with rocks and carried straight to the bottom, and this is continued until the opposite shore is reached.

The mat is then covered to the proper depth, 12 to 15 inches, with rock, and then another mat, made in the same way, is woven and laid down on top of the first, and similarly weighted down, and this work is continued until the dam has risen as high as it is intended to stand, the finishing being always a heavy coating of rock that covers the willow and all.

The willow, always covered with water and the mud that inevitably lodges among the rocks of the dam, is kept sealed air-tight, and of course does not decay. It binds the rocks together and prevents the dam being shoved out of place by ice, or disturbed by the pressure of the current at high water. It is good for no other purpose save to hold a shore that is washing away with its roots, and for dam construction it is superlatively the thing.

HORTICULTURE.

Fruits in Oregon and British Columbia.

By Fred C. Smith of Auguston, South Australia.

The present article deals with fruit-growing in Oregon and British Columbia. One sees and reads so much of California as the great fruit State of the Pacific coast that the possibilities of the northern States and provinces are lost sight of; so that when, under the guidance of Mr. A. I. Sargent, the genial and energetic secretary of the Oregon State Board of Horticulture, I was enabled during a pleasant though rather wet week to see something of the prune and apple-growing there, I was very much surprised at the excellence of those products and the extent of their cultivation. The State of Oregon is a peculiarly rainy one—so much so that I was told the saying goes that it rains 13 months in the year there. Owing to this, grape-growing is not a commercial success, and prunes must all be artificially dried. The Oregon growers very conveniently hold that that system is much superior in its results to sun-drying. Some of the very finest prunes I ever saw both for appearance and flavor were German prunes grown and cured near Portland.

The German prune there grown is very much larger than the Prune d'Ente and d'Agen, and is also a much shyer bearer, though it makes a larger tree. With Mr. Sargent and the owners, I carefully examined the two largest orchards of German prunes, a few miles from Portland. One grower pruned his trees so as to admit as much light and heat as possible through them. He told me that he considered two cents per tree of green fruit a good average crop. I could not see this amount on his trees, though they were very large and from the method of pruning looked "scraggy"—that is, not compact and shapely—but I found that he had made one or two pickings already. This he explained was specially necessary in Oregon, where the fruit could not ripen so quickly as in the warmer regions of California. It was Sunday when we visited the place, and they were hard at work with the evaporators. I found that Sunday work was often considered necessary in California during the busiest part of the fruit season or great quantities of produce would otherwise be wasted.

In a large neighboring orchard the German prunes were allowed to grow with very little pruning, except topping the strong, young growth back. The consequence was that they presented a total contrast to the first one we saw. The trees were of immense size, and for shape would have pleased the eye of a landscape gardener; but upon closely examining the fruit upon them, I found they were many days behind the first orchard in ripeness, and apparently none had been picked. They carried a large crop, how-

ever, and if they could be picked ripe before the heavy rains of the season set in, they would no doubt produce a great deal more per acre.

This German prune will stand the moisture much better than the French varieties, and it hangs better upon the trees when ripe. The French in most of the orchards, both of California and Oregon, when ripe, covered the ground after a high wind. Not so the German. In addition, the French splits very soon in wet or damp weather, while the German is tougher. In California the latter is hardly considered worth cultivating compared with the French, but it evidently suits the special conditions of the climate of Oregon, so that it seems to hold its own there against the French, even with experienced men.

It is claimed by its friends that it uniformly makes the largest grade prune in the market, for which one to two cents per pound more can be obtained. On the other hand, it dries away considerably more than the French, and has proportionately a much larger stone. For Australia I should say grow the French prune by all means, and for New Zealand give the German a good trial as well as the French.

In this and other orchards, too, I noticed Coe's Golden Drop and the "Silver prune," but could never see any difference between them; the latter is a seedling of the former, raised in Oregon. I found that these plums possessed a richness and delicacy of flavor there that I had never found about them in California or our own warm climate. They are both used for drying. The skins, when properly ripe, are very tender, as I discovered when I endeavored to empty my overcoat pocket of several monsters that I had begged for a friend in Portland. When properly cured they are a delicious sweetmeat, and beyond doubt make one of the richest jams of any kind of fruit.

Oregon is noted for producing some very fine seedling plums, viz., the Silver prune, "Tennants," "Hancock" and others; but, as I have said before, the originator's recommendation must never be taken without testing, and when I was fortunately able to examine two of the above in the fruit display of the Portland Exposition, I found that in appearance they were very fine looking fruit, but I should want to see them very carefully tested before I planted to any extent. If a new variety is only equal but not superior to the known cultivated sorts it is very risky to change from the known to the unknown; so careful has the weeding out of worthless varieties been in the past that it is rare for a new fruit to prove to be a point ahead of the best old varieties. To-day it is the best all-around varieties of fruit that must be cultivated, so that all possible chances for its disposal or working up may be open to the grower. I was told that very soon Oregon will have as large an area under prunes as California.

As your correspondent I had the pleasure of accompanying the members of the Oregon and Washington press associations and their families on a 60-mile railway trip along the banks of the wonderfully beautiful Columbia river to Hood, a village at the base of Mt. Hood. Around this snow-capped peak is one of the best apple districts of the Pacific Slope, perhaps of North America, and a very fine fruit show was held. I saw and tasted the finest looking and flavored apples I think I have ever seen. Nearly all the fruit was gathered from very young trees, as the industry has only lately been taken up to any extent.

What struck me more than anything else there, was the very marked difference between the apples grown in the mountains and those from the plains. Among them were two at least that will be familiar and should be deserving favorites with your readers, viz., the "King of Thompkins County" and the Gravenstein. Those from the plains were of medium flatness, size and color, like ours, while the mountain-grown specimens were very richly colored and remarkably elongated, and in the case of the Gravenstein, ridged on the sides and around the calyx. I tasted for the first time, there, apples grown in a really cold climate, and I was delighted with the crispness, lusciousness and flavor of the fruit and fully realized then that we in a warm climate must not expect to grow fruits that are best fitted for a cold climate, and reproduce all the special qualities which only such a climate will produce. We cannot profitably overcome nature's limitations, but we must be satisfied with the large compensation of our superb climate and its producing possibilities.

Three apples that I particularly noted were "Kay," a brilliantly colored medium size fruit, the "Malom," an apple that the grower had lately received from Germany and one that is much like and almost rivals the Gravenstein in some points, and lastly, the "Blue Pearmain," a large, conical, dark purple fruit.

A curiosity was a plate of small seedless apples grown within ten miles of the snow line of Mt. Hood, which I consider of no value except as a curiosity. There was also a plate of "Early Crawford" peaches from the same place, just fit to eat and quite two months later than those grown in California.

IN BRITISH COLUMBIA.

I spent three or four days in British Columbia in passing and was surprised at the horticultural possibilities of the province. Being situated in a latitude similar to Manitoba, Upper Canada and inclement Newfoundland, I hardly expected to find even apples growing successfully, but had forgotten that the warm Japan current sweeping from the north round her coasts ameliorates the climate like the Gulf stream does that of Ireland, and that the giant Rockies protect her from the blizzards of the East. A horticultural society has existed for many years, but only within the last three or four years has general attention been drawn to her fruit prospects.

Four canning and jam-making factories have been established, which are putting up fine peaches, pears, apples, plums, cherries and berries, all grown in the province.

I spent a very pleasant morning in the factory of Messrs. O'Kell, Morris & Co., at Victoria on Vancouver island. The latter gentleman three years ago was a soft-goods merchant in Manchester, but, seeing the possibility of his pres-

ent success, he took a trip through California and soon had their excellent works established. They have even sent a shipment of canned goods of some thousands of cases to Manchester. The firm have been experimenting in the bottling of fruits, and with fair success. Their jams and jellies in glass and earthenware jars were as good as anything that I have seen in factory-made food of the sort.

Mr. Morris told me that they imported 50 or 60 tons of apricots from California each year, and that they would buy some thousands of cases of Seville oranges for marmalade if they could get them.

A handy form of package used by this firm for their jams is a very cheap wooden bucket with a wooden cover and wire handle. These are made to hold from three pounds to fifteen pounds each, and stand a great deal of knocking about. This jam retails at 4½¢ per pound. Some very large samples of Pond's Seedling and Egg plums grown on the islands around Victoria were brought into the factory while I was there.

Across on the mainland I spent a day at Agassiz, some 70 or 80 miles from the town of Vancouver. At this place, which is situated in a small valley surrounded by peaks covered with eternal snow, is a Government Experiment Station of the Dominion, where I saw a small but very flourishing orchard of I suppose 200 or 300 varieties of plums, peaches, pears, cherries and apples, all of which were doing well, though the apricots, figs and vines would not stand the cold. Superintendent Sharp of the station is trying to make it useful as an educational center, and from here named varieties of all the best fruits that will succeed in the province will be sent to the various horticultural shows for the benefit of growers, and a correct knowledge of the nomenclature of the many varieties will thus be disseminated. In addition, scions of all the trees will be available for distribution to all who ask. I was much pleased with the plums and apples that I tasted. In a later paper I hope to say something of the valuable work done by Canada in sending Prof. Gibb to southern Russia to collect some scores of varieties of different fruits not hitherto known to American horticulture, and in opening communications with the Russian horticultural experts which have yearly resulted in additions to the list of varieties.

What strikes me as a strange anomaly in this province is the existence of a fine fruit-growing valley among the snow-clad peaks of the great Rockies, at an elevation of 1200 feet above sea level, where it is necessary to irrigate owing to the very limited rainfall. This is the Okanagan valley, where the Governor General of Canada, Lord Aberdeen, has bought several thousand acres of land and has planted a large area to fruits, especially prunes.

In this and other valleys the aphid, apple scab, pear blight, and other diseases have made their appearance and threaten the existence of the industry. The same difficulty in persuading the growers to adopt preventive measures against their insect and fungoid foes has been found, I was several times told, both in Oregon and British Columbia. In neither country has the industry advanced to a science as it has in California, and the same old mistakes of planting inferior sorts on wrong soils and in wrong situations are perpetrated there as with us.

I realize more and more that, with the fierce competition which we have to meet in all fruit lines that figure to any extent in the market, we shall have to specialize more. Instead of growing several kinds of fruit, we should restrict our attention to one, two or three varieties, and they must be all-around fruits, fit, if one avenue of sale is closed or becomes unprofitable, to enter with the best in some other avenue. They should be such as the French prune, Coe's Golden Drop plum, Muscatel grape, Bartlett pear, etc.

There are enough trees already planted to overstock our local markets, and we must for the future turn our attention to the very limited list of fruits that can be disposed of, in one form or another, in bulk, in the open, free-trade markets of the world. My only excuse for harping upon this point is because of its extreme importance.

It is hoped that in parts of Okanagan valley grape growing will prove successful. In some places in Cape Colony, in North Island (New Zealand) and in Oregon, though vines will grow well and produce fruit, it very seldom ripens, owing to long-continued rains falling just at the ripening time, splitting and cracking the grapes so that only under cover or shelter, which is too expensive, can they be grown successfully. But here in Okanagan, where irrigation has to be resorted to, grapes may perhaps be ripened.

My next letter will deal with "Fruit at the World's Fair."

The Cuthbert Raspberry.

As this variety stands so well in California, our readers will be interested to read of its esteem and of the way it is handled by Eastern small-fruit growers. A Western New York grower writes to the *Country Gentleman* as follows:

With so many candidates for popular favor, several of which have proved, or will eventually prove, to be really valuable, it seems presumptuous for any one to pronounce a certain variety, even if well tried and of long standing, to be at least the equal of all others. But this, after 11 years' experience with it, I believe the Cuthbert red raspberry to be in its class. It is true I have tried no other variety, my success with the Cuthbert being so complete from the start that I thought it best to live up to the old sayings, "A bird in the hand is worth two in the bush," and "Let well alone." I have watched the doings of other varieties and exchanged notes with some of the growers, but I have heard or seen nothing of their possessing qualities sufficient to induce me to change. Favorable reports from all localities bear witness to its adaptability thereto; it is easy of cultivation and is tolerant, like the red currant, of indifferent treatment, though when generously treated no small fruit responds more readily or handsomely. The Cuthbert ripens rather late, but that is an advantage, as it helps to prolong the season, and the first pickings come in soon

enough to realize best prices. Some red raspberries make good returns only when highly cultivated, and are more or less liable to winter-killing and diseases, neither of which plague my Cuthberts have ever suffered from.

A nine years' average gives me 10½¢ per quart; the highest season's average being 12¢ in 1887 and the lowest 9¢ in 1891. A Cuthbert patch, liberally treated, will bear profitably for many years. I have two rows, planted in 1883, which yielded well last season, one of them, standing in—or rather under—a row of cherry trees, giving the last and best berries of the season. It would seem that some kinds of raspberries, as the currant is said to, thrive well in the shade; certainly the canes in this row are stouter and the leaves larger and of a darker color than those in the open; the bearing sprays grow lower on the cane under the foliage, producing plenty of large and handsome, though late, berries, which bring, owing to their very lateness, good prices and give a good finish to the season. Berries have all been carried to Rochester, seven miles distant, with road often rough, and have always been delivered in good condition and have given excellent satisfaction; other growers have told me of their having shipped them successfully for long distances.

As to planting, I began setting them out with rows four feet apart, plants three feet apart in the row; this I found too close for proper cultivation, and have since widened the rows to five feet, putting plants two feet apart in the row; this gives more plants on a given space, while I am satisfied they do better, besides rendering manuring, trimming, cultivating and picking easier tasks. I manage to dress every patch at least once in three years with manure, putting on superphosphate every year at the rate of 600 pounds to the acre. After four or five years, in spite of all ordinary care, couch grass generally manages to insinuate itself between the roots of the plants and soon defies eradication, the only remedy being to plow up the patch which would otherwise have borne profitably some years longer. Where possible, it is better to plant long, narrow strips rather than short, wide ones, because of the saving of time in cultivation; there being fewer rows, there is also less liability to damage at the ends. Now that I prune in autumn or winter, cutting back bearing canes to 2½ feet, I rarely suffer any loss from canes, top-heavy with fruit, being thrown down in heavy thunderstorms, while there is no need of support of any kind. There may be fewer bearing buds, but all the sap being concentrated on these the berries are much larger and more showy. The first outlay for plants is the only one required, since suckers spring up every year for making succession beds, which seem good enough for the purpose, though probably better plants may be produced by cutting roots into pieces and planting them in rich, suitable soil; if bottom heat can be given them so much the quicker will they start.

THE FIELD.

Alfalfa Sown for Irrigation.

Dr. W. F. Morrison is the owner of a fine tract of land adjoining the town of North Yakima, Washington. An area of about 120 acres was seeded to alfalfa last spring, and ten acres had previously been laid down to this succulent legume. The way this was done was told to the *Ranch* by the doctor as follows:

I asked him how he prepared the ground for the crops. He answered: By thoroughly plowing in early spring, running the plow deep enough to take out all the sagebrush roots. Not less than about six inches will do this. Level the ground well, that the ditches may do their work perfectly.

When and how do you put in the seed? At once after plowing, while the soil is moist. Drill it in, or use the Acme harrow.

How much seed to the acre? Twenty to twenty-five pounds. I prefer the latter amount. After the seed is in roll the ground with a roller of medium weight. This packs the surface so that weeds will not suck out the moisture from around the seeds. I want the seeds buried three or four inches.

When do you begin irrigating? As soon after rolling as the ditches can be put in shape. My ditches are five feet apart; four and a half might prove a better distance. They are four inches deep and nine to twelve inches wide at top. I find it necessary to clean out the ditches occasionally; they are liable to choke up somewhat when the crop is cut. It would be wise, perhaps, to reditch every year. Surface flooding must be avoided, hence the water must flow unobstructedly in the ditches. Some land will need two waterings to each cutting; if a hardpan near surface, once may answer. The idea is to keep the ground moist.

How near to cutting time do you water? Turn off the water about a week before. After the hay is off water immediately.

How often do you cut? Twice the first season from seeding; first crop light; second time considerably better. The second year three or four cuttings may be made. At three years the crop is full, and it will continue so indefinitely, four cuttings being made each year. So far as known here, there has been no failure of alfalfa from old age.

The plant, then, roots readily and strongly? Yes, I noticed a plant particularly last year. When the top had made a growth of one foot I dug down to see what root it had made and found that the root was exactly as long as the top. The roots continue to penetrate deeply as the plant grows older.

How late in the season do you irrigate? Never after the last cutting; say the latter part of September, as a rule.

You cut with the ordinary mower? Yes, but the high geared machines are the best, perhaps, for the growth is dense.

Is the curing a difficult matter? Not in this climate.

Cut just as it is coming into bloom. The hay can be put in rick the second day from cutting. Handle carefully, so as not to break of the foliage. Put in long, narrow ricks; much of the curling will take place after stacking. At just what point to stack is a very nice point, to be determined only by experience or close observation. The hay must not be so full of juice as to heat, nor so dry as to lose its green color, its aroma and its flavor.

Do you feed all this hay? By no means. I grow it to sell. It sells readily, as a general thing, for \$5 per ton, or more, in the stack. That, you see, makes very profitable farming on a large scale, compared with the money to be made at the business in most localities.

What do you estimate the cost per ton of the alfalfa hay in the stack? To irrigate, cut and rick will cost \$1.50 per ton. Four cuttings give eight to ten tons per acre. You can readily figure the net returns.

Do all kinds of stock thrive upon it? Yes, but I would not use it as a pasture for milch cows. In fact, I do not consider it best to pasture it at all. It is better to cut and feed it green in summer. Too much tramping injures the roots. For cattle, sheep and hog feed it has no equal, green or dry. My work teams receive nothing else, and they have worked every day since last October. To driving horses a daily ration of timothy or other feed should be given. Range cattle, in fair condition when brought in, will fatten upon it without grain, and the beef will be excellent.

Fed to cows, does it induce a good flow of first-class milk? It does, and the butter from alfalfa milk brings the highest price in the market. At least, such has been the case with the dairies with which I have been familiar. Cows once fed alfalfa will stick to it if they can get it. They will leave all other kinds of hay for it.

A Chance for More Hops.

We have received the first issue of a new weekly publication from Hamilton, N. J., entitled the *Hop-Growers' Journal*. Its scope and purpose are indicated in its name. We find in its columns much in favor of better values for hops before another crop can be gathered. We quote as follows:

Taking the most favorable view of the situation of the hop market that can be drawn from any estimates of the supply and demand that have been made public, there is admitted to be a large shortage in the supply if the demands are to be anything like the usual demands for the last 10 years. The demand for consumption may, and probably will be, less this year than for several preceding years; but it is not possible that this falling off will at all compare in amount with the decrease in the supply.

The holders of hops will, therefore, wisely refuse to part with their crop until much higher prices are offered. The available stock remaining on hand is small and America is the only country raising a considerable surplus and the wants to be supplied are large. If growers will only not press sales, a scarcity will soon make its appearance and prices will go higher.

Von Barth & Son, a leading firm of hop dealers, have just published an interesting report of the hop crop of 1893. They report the German crop of '93 at 145,000 bales, which is less than half the average crop for the last ten years. They state the English crop at 258,000 bales, and the yield of America at 239,000 bales, both of which are considered by the most conservative judges as much too large. The best judges of the American crop of '93 make it less by from 15,000 to 25,000 bales, while the English crop is estimated at about 225,000 bales.

Von Barth & Son estimate the whole European crop at 374,000 bales, showing a deficiency, compared with last year, of 114,000 bales and 121,000 bales less than the average crop for the last ten years. England's crop of 258,000 bales is short of its average annual consumption of 109,000 bales. Last year England imported 127,000 bales, about 68,000 bales from America and the balance from the continent. This year she has already imported from the continent 16,700 bales. She will need 57,000 bales more to equal her consumption of last year.

Germany, if she consumes her usual amount, must have 136,000 bales more than she has raised. Some portion of that deficit might have come from the continent, but England has already drawn the surplus from the other hop-growing countries of the continent and Germany must look elsewhere.

The secretary of the German Hop-Growers' Association, by a recent estimate, makes the German consumption 238,000 bales, and the '93 German crop 138,000 bales, making a shortage in home supply of 100,000 bales. But in any event, whichever estimate is correct, she has a large deficit to supply. Where are those needs of England and Germany to come from?

Von Barth & Son estimate that America's consumption averages 189,000 bales, and, taking their figures as to the crop, America's surplus is only 50,000 bales. If these figures are correct, our surplus is already exhausted and we shall need every pound of hops now remaining in this country for our consumption.

Duration of a Hop Yard.

The duration of a hop yard must depend, says the *Journal*, in great measure, upon the depth as well as upon the congeniality of the soil. There are well-authenticated cases where hop roots have been traced to the depth of thirty feet. In the deep and rich soils of California and Washington hops have been grown continuously for twenty-five years, upon the same land, without any apparent diminution of the crop. A writer in an exchange, address not given, says: "I have just harvested the fortieth consecutive crop on the same piece of land, and the last crop was larger than some previous ones." Morton, an English author, wrote in 1880 of a hop yard that had been in uninterrupted cultivation for 300 years. The same author says: "It is diffi-

cult to ascertain the age of particular plantations. We have one, however, in our possession, which has not been replanted for at least 150 years, and is as flourishing as ever." A valued correspondent in California tells us "the pioneers of hop culture here consider their 25-year-old yards to be only in their infancy." In soil of great depth and richness in the mild climate of that part of North Carolina where the vine "is native and to the manor born," it is not unreasonable to expect a hop yard, with proper cultivation and care, to last and flourish for at least a century. In sections of Europe where climate and soil are favorable, hops are grown upon the same ground for centuries. In the State of New York many yards fail after a period of ten or fifteen years.

Florida Sweet Potato Growing.

Major Campbell describes his method with sweet potatoes in the *Florida Farmer* as follows:

Go to work at once and make a hot-bed if you want early potatoes, say by the last of July or August; lay your small potatoes along in rows six inches apart, so they can be protected after they sprout. Make the bed so that it can be protected from frost. Cover the potatoes three inches; and after the sprouts come well through the ground, work the earth to them, so as to make good, long shanks—the longer the better.

Select a new piece of ground and break it up now; get it as clean of roots as possible. After the weeds and grass have well started, bed it up four feet apart. In a week or ten days bed it back again. After the 20th of March throw two furrows together between your rows and plant your draws 12 inches apart. Do not wait for a season, but make one. There is no trouble about having slips to live, or vines either, if you set in well-prepared ground. In a few days take a garden rake and draw a little fine earth to the slips. As soon as they will bear throwing a furrow to them, do so, and use your rake again. Continue this until you have worked all the bed to your vines, and keep your beds clean. Do not wait for the grass to grow, but rake or scrape the beds, so that no grass will start until the vines have covered the beds well, and then with a bull-tongue, run two or more furrows between the beds before the vines have covered the ground.

Do not cut the vines from this planting if you want them to make potatoes. For a late crop set out draws and work the same way; then cut the vines from them and stick out the first rain in June.

Medium quality of new ground is better than very rich or cow-penned land, as sweet potatoes are apt to crack on rich land.

Keep your beds well pulverized and clean of weeds and grass; and by this mode you may safely count on from 50 to 100 bushels per acre, but be sure you do not figure too high and be disappointed because you do not make 200 or 300 bushels, for nobody does it. If you make 75 to 100, you do well.

POULTRY YARD.

The Egg Shell Theory.

The idea entertained by some people that a brown-shelled egg is richer than a white-shelled egg is, writes a Tennessee correspondent of the *Southern Cultivator*, simply a theory that has no foundation in fact. The color of the shell is no indication whatever as to the condition of the contents inside, whether rich or poor. The color of shell does, however, give us a pointer as to the kind of hen that laid the egg. There are two distinct classes, or varieties of hens of which there are many different strains and many intermediate grades. They are known as the Asiatic and the Mediterranean classes. The former is the large, feather-legged type, to which belong the Brahmas, Cochins and Langshans. The Mediterranean class comprises the Leghorns, Spanish, Minorcas, etc. The former, or Asiatic lay very dark-shelled eggs, while the latter lay clear, white-shelled eggs. The Asiatics are the hatchers, the hens being very much given to sitting. The Mediterranean type are more persistent layers and less inclined to sit. To the intermediate class belong such pure bred varieties as the Plymouth Rocks and Wyandottes, better known as the American breeds. Hens of these two varieties lay light-brown shelled or cream-colored eggs. According to the shell theory, their eggs should be a sort of a happy medium between the Asiatics and Mediterraneans in quality and flavor. Then there are the good old common hens. They are all of mixed blood of no distinct class, and the shells of their eggs vary in color from a light brown to a creamy white, never quite as dark brown as the pure Asiatics, nor so white as those of the pure bred Mediterraneans. Unlike the shell, however, the yolk of the egg is a pretty good indication of its richness. Hens that have plenty of grass and insects lay the richest, dark-yolked eggs, whereas those deprived of green food and meat lay eggs with pale yolks that are thin in albumen also and not very nutritious. Plenty of insects or fresh meat makes rich eggs.

Growing Turkeys.

A lady who has made a remarkable success of turkey-raising gives the *Country Gentleman* the benefit of her experience. She says:

"That there is a profit in turkey-raising is beyond a doubt, but those entering upon it as a business must make up their minds to work and see that nothing is neglected. You cannot immediately jump into a new business, no matter how much theory and book-learning you may have on the subject. Practical knowledge is essential; and this, together with courage and ambition, will make you succeed. In the first place, get well-bred stock. It is just as necessary to be particular in selecting your turkeys with an eye

to profit as it is in selecting cows for your dairy. The Mammoth Bronze is said to be the best variety. The males at the age of six months weigh from 18 to 22 lbs.; females, 10 to 14. The hen will lay from 30 to 50 eggs, according to management. From 16 to 20 eggs constitute a setting. The period of incubation is 30 days. After the hen begins to sit, she sticks so closely to her nest as nearly to starve before she will leave it, consequently her food should not be neglected. Only one person should go near the sitting hens, and that one should be quiet in every movement, so that by hatching-time all fear of approach has disappeared and she will permit the removal of her little ones without resistance. Young turkeys are so tender and so easily injured that it is best to remove them from the nest when only a few hours old. Keep them in a basket snugly wrapped in warm flannel, lifting them out for an airing now and then during the second day in order that they may learn the use of their clumsy little legs, and to offer them something to eat.

"Little turkeys never have much appetite until two or three days old, and then an egg custard with tender onion tops cut small enough for them to swallow will tempt them sooner than anything else; and as they have learned to eat pretty well, season their custard with a pinch of black pepper and thicken it slightly with the soft crumbs of egg bread; feed them five times a day until they are two weeks old. The reason of this is that the growth of feathers on young turkeys is very rapid and demands a constant supply of nutrition. Hence a single omission of food for a few hours sometimes proves fatal. Sweet milk should be offered them to drink daily, given in some manner to prevent them getting themselves wet. One of the secrets of turkey-raising is to never allow them to get wet or chilled. A good way is to make a yard of boards ten or twelve feet square for the mother and her brood; provide shelter for them to sleep under and to protect them from sudden rains. After two weeks the custard may be omitted, then feed a bread made of bran, middlings and a little cornmeal, baked and moistened with sweet milk. After a month old, they can be fed mixed grains once daily, with a little cracked corn; later on, their morning meal can consist of any cooked vegetables thickened with good wheat bran and middlings fed warm. Place the food in troughs or anything that can be kept clean, as it is necessary that their food be prepared fresh every day. Provide plenty of grit, also plenty of clean water or sweet milk. Cultivate their acquaintance as you feed them. Keep them growing from the shell to the slaughter, and send nothing but finished products to market. While I do not say my way is the best way, yet I do affirm from experience that it is a very successful one."

FOWLS can never be healthy or comfortable in dirty quarters. Occasionally have the whole of the interior fittings of the fowl house taken outside. Then take a bucketful of strong limewash to which a wineglassful of carbolic acid has been added. Whitewash the whole of the interior, roof and all, and then serve the outside in the same way. Thoroughly clean up the floor, and sprinkle it with a five per cent mixture of Calvert's carbolic acid. Then go over the roosts and nest boxes—all over—with kerosene, and replace them in the house. This work ought to be done about four times a year, and the floor should be cleaned up once a week. Lice, ticks and disease will avoid a henry that is treated in this way.

LOOK SHARPLY after the setting hens. If possible, get a peep into the nests daily while they are absent. A little neglect here will ruin everything. If a single egg is broken the whole should be immediately washed, or there is danger of the mass drying on the outside of the remaining eggs and stopping the circulation. Take out the straw or chaff and put in a fresh supply.

THE APIARY.

Ripening Honey.

C. W. Dayton of Pasadena, writes to the *American Bee Journal* as follows:

Shall we allow the bees to do their own work or are we to turn in and assist them? One is a question of hives, combs and bees; the other, buildings, vessels, and time of the apiarist. We may have plenty of bees, combs, etc., and still not be able to forego the expense of constructing buildings or the purchase of ripening facilities. In Illinois a building would be absolutely necessary, and in California an equally expensive platform in order to keep the honey from ants. In Iowa, my former location, ripening pans might be used without danger. Here, in 15 minutes, ants will find it, and by an hour's time they will move into it by platoons. In fact, the California apiarist's mind is pretty thoroughly taken up with ants, spiders, gnats, dust, weeds, brush, rocks, stings, melting, heat and dilapidated hives and frames, and freight bills, and if his honey house is as good as a cloth tent without a floor he feels blessed.

When the Eastern bee man comes here and looks at an apiary, he invariably says: "How soon I would construct hives of planed lumber and paint them, build a honey house, grub out the brush and introduce order." One or two trips in a rocky canyon shakes this superfluous energy out of him. He may jostle along a bit, as a second effort, but he soon settles down into the smoothly worn rut pursued by the majority. He avoids everything but the absolute necessities, and leaves the labor as much to the bees as possible, and transfers the honey from the combs into the receptacles in which it is to remain by the easiest and quickest possible plan.

If it is extracted before sealed it is to save labor of uncapping. This country is far ahead of the East for ripening honey artificially, being rainless and hot all through the summer season. Notwithstanding this, I saw, the past season, in a single apiary where evaporating facilities were in use, several tons of honey which had the tart of unripe-

ness. It was at the apiary, in the shade of a tree. It needed a little hauling in the sun to make it foam. More of the same sort was added to the pile, sealed, boxed, stamped, ready for shipment—called "extra fine."

Some bee-keepers get so well up in the art of extracting before sealing that they begin to shirk the ripening in a corresponding measure. The practice of one seems to lead to the neglect of the other, and while they are so in haste after quantity at the expense of quality, never looking back at their wake of dissatisfied consumers, we almost wonder that they do not contrive some plan to snatch the nectar from the blossoms before the bees.

Mr. Robbins quotes rightly in that "I think comb honey should remain on the hives long enough to become travel-stained." That is not expressing any particular liking for the stain. I believe travel-stain is nothing less than propolis and dirt. For combs to become travel-stained requires a considerable lapse of time. During this time it is covered with bees, which keeps it warm and dry and in a ripening condition. The honey departs from a raw, watery consistency. How much stain there is upon it will depend upon how far it is situated from the entrance. The nearer the entrance the more stain, the same as a carpet in a room is worn most nearest the door, yet it may be just as warm and pleasant back in some corner where feet seldom go. So with combs of honey, which may be so situated as to receive little travel-stain and still receive a benefit from the warmth of the bees. The greatest warmth is high up in the hive—the most travel-stained low down.

In the case of the beef, which was hung up until it began to smell before being ready to eat, there is misapplication. The meat was simply spoiled. If we wish to spoil honey, hang it in the damp cellar. For a long time after the honey harvest the bees continue to occupy and protect the whole hive space, which may include two supers of sections or an extracting story. Pull the lid off the top, and we find bees at our fingers' ends.

About the first of September, in Illinois and Iowa, or Colorado, the brood diminishes, the bees gather into clusters lower in the hives, and on cool mornings we find the upper combs being deserted. Honey should be removed before the bees desert it, as outside the clusters the condition is the same as in the cellar. The clusters of bees are warm. The surrounding air and combs are cold, and the condensation of moisture and sweating is the result. The honey upon which the moisture rests will be spoiled and the wood mildewed.

In Iowa I used to pack the bees for winter before this time came, and the extra combs of honey were stored in the honey room, and as I scraped the honey down to the septum with a pocket-knife all through the winter, I often wished my marketable honey tasted like that.

In overhauling the hives in early spring, and where there were 10 or 12 combs in the hive with the bees clustered on three or four, on tasting the honey in the comb far from the bees, it was watery and rancid or flavorless. Following up each comb successively, they were found alike until that within the cluster was reached, and found to still retain its original rich, oily flavor.

In colonies afflicted with diarrhea, it was watery and rancid even inside the cluster, so we are led up pretty close to the cause of the disease.

The keeping of honey in the condition afforded by the bees would be compared to hanging the meat in the smoke-house with a smoldering cob fire underneath. There is a need of judgment throughout the affair, as it may be as easily overdone as underdone, Colorado and California not excepted.

Shipping Queens.

A California correspondent says:

One thing I would do if I were making a business of shipping bees to this part of the country from the East or South during the summer and part of the spring, would be to have my shipping cages contain a small phial so corked that the bees could sip out as much water as they required. Such cages could be constructed for very little more than they now cost. I think if they were made in the right way, that they need not weigh over an ounce when provisioned and ready to ship with the queen and bees. When so constructed such a cage would not require so much candy, which would make it lighter; then some of the wood could be bored away to make room for the phial. I remember that a cage, something like the one I have in mind, was made and used some ten years ago to some extent by Eastern breeders. Instead of the water receptacle being made of glass it was made of tin. That these cages did not come into general use for shipping purposes I attribute to the fact that they were made too shallow.

I think if our queen-breeders will not construct their shipping cages with water reservoirs in them, or if they cannot make a "candy" that will remain perfectly soft for six or ten days without either becoming too hard or too soft, so that a small cage need not weigh over one ounce when ready to drop into the postoffice, then they should demand in their advertisement that when queens are to be sent to distant places—say two thousand miles across the continent to points on the Pacific coast—the purchaser should add enough to the listed price to pay for the cost of extra-sized shipping cages and provisions. I think that ten cents would be a fair price to add for this extra cost. This would allow the shipper to use an export cage, or one of those reservoir cages containing water. A little more liberality on the part of both purchaser and breeder would be the means of saving the life of many a queen bee.

In leaving this subject I would again impress upon the breeder who is about to ship a queen to this part of California, or for that matter to any part of this State, to be sure that the candy he intends to provision his cage with will remain in a nice soft condition during the entire trip, and that the ventilation be ample during the summer and limited during the spring, as during the latter time the bees may have to pass through a mountainous country much colder than the region where they were reared. Do not think that because your queen is going to California she is

going to get into Paradise the moment she leaves your hands. There may be a very severe purgatorial period before her, and, perhaps, this probationary spell might be so severe upon her that she might be obliged to go to a worse place than California.

SHEEP AND WOOL.

The Future of Wool.

A Virginia wool-grower writes of the future of wool in a hopeful way in the *Country Gentleman* as follows: The United States census figures for 1890 show a striking improvement in the sheep and wool industry of this country, the wool clip of 1890 being about double that of 1870, and one-third larger than in 1880. It is noticeable, however, that the number of sheep did not increase in proportion to the wool, so that the big wool harvest of 1890 was due more to improved breeds of sheep and better management and keep than to relative numbers. In 1890, the average clip per head was 5.5 pounds, against 3.5 pounds in 1870, a gain of almost 60 per cent in two decades.

This tremendous improvement was apparently accomplished without effort on the part of flock-owners, and in the face of many trying discouragements, such as increased foreign competition, slack demand and lowering prices. The central, western and southern States show the most marked advance in this business, and it is only one of the many things that reveal how much the status of agriculture in those sections has recently improved. This is a gratifying showing, the more so as it has been accomplished under adverse conditions.

How far free wool or a lower tariff may tend to retard the sheep and wool industry, remains to be seen. The present uncertainty is doubtless having a damaging effect that may be permanent or not, according to circumstances. Let us hope, however, that the farmer will be able to find compensation for growing competition and lowering prices, and that sheep and wool will continue to be profitable products. The great west and south have cheap lands, a generally mild climate, good home markets and a steadily increasing consumption. Few people can grow sheep and wool cheaper than nine-tenths of American farmers, and no people know better how to care for sheep and breed them so as to attain the highest profitable standard in both quantity and quality of the fleece. There are, therefore, many strong inducements for the owners of a good flock of Merinoes or other classes to hold on to them, and try the result of patience and perseverance a while longer.

It must be confessed, however, that the future of the sheep and wool industry of this country is beset with grave apprehensions. In anticipation of free wool and still further reduction in prices, many flock-owners are killing their sheep and heavily curtailing their flocks. How far this has already gone, or may go, few can tell, but there is danger that this pastoral and delightful calling will be seriously harmed. But let the cautious farmer spare the knife awhile longer, and wait with the best patience he can, future developments in this field. We believe the worst has been reached, and that the prospects will shortly brighten. Both mutton and wool are bound to continue prominent staples in this country, and if prices are low, there is less risk of foreign supplies being forced on the market.

Let farmers weed out their flocks and improve the qualities of the animals they retain, but not commit the great error of annihilating them altogether. Every farm may carry profitably a certain number of sheep at nominal cost. Curtail the flock if necessary, but breed up and improve the rest, but never abandon them altogether.

A Government View of the Wool Situation.

WASHINGTON, February 14.—In answer to the resolution of Congress, Worthington C. Ford, Chief of the Bureau of Statistics of the Treasury Department, sent that body to-day an elaborate report upon "wool and manufactures of wool." It says: "The increase in production in foreign countries, especially in Australia, South America and Africa, has been far greater than in the United States. While the American clip has trebled since 1850, the Australian clip has increased tenfold, that of South America ninefold, and that of South Africa fivefold."

The report shows the year 1892 gave the wool-producing interests, even in the most favored countries, as Australia, a setback. It says: "That the sheep-raising interests of the world are passing through a period of depression is not to be denied. Low prices for wools have reacted upon production by reducing the profits derived from wools and diminishing the temptation to extend production. Were this depression local, local remedies would apply; but it is general and affects those countries where the advantages for sheep-raising excel, as well as those where wool-growing is a secondary matter, even by product rather than industry."

In conclusion, Ford set forth numerous propositions resultant from his observations: No commercial and industrial nation can adequately supply itself with wool; no other nation of commercial or industrial importance imposes as high duties on wool and woollens as the United States; no legislation short of prohibition can maintain prices in the face of an increase in the world's supply of wool; free entry of foreign wools has not destroyed the sheep industry in other countries; wool-raising is controlled by the same economic conditions as other interests, and the present depression in the wool industry is general, not local.

JUDGE VIRDEN, of Mono county, decided that sheep may not be watered in a creek which had been used for irrigating purposes by a rancher near Bridgeport. His decision was sustained by the Supreme Court. The injunction against the sheep men was made perpetual.

SWINE YARD.

An English Breeder on Pigs.

A writer in the *North British Agriculturist* has an extended article on farrowing and raising pigs, from which we extract, as interesting, the following. It is written for another climate, but the reader can bear that in mind:

Having decided on the breed to keep, whatever it may be, I think the best way to start is to buy one or two straight, deep, light-shouldered sows, each having not less than 12 sound teats, and due to farrow their second or third litter. This is preferable, I am sure, to buying yelts, as often great disappointment comes through these breaking their service or proving bad mothers. Having secured a nice sow or two the breeder can save the best yelts from them, and by selecting a straight, deep, clean-shouldered boar, one should have the foundation of a good herd at a small outlay. To obtain these, one may attend at advertised sale or communicate with one of the many breeders of the class required. Care must be exercised to obtain sows with as much quality as possible. The coat and skin are, as in other animals, the best indication of quality; the former should be fairly long and fine, while the latter should be smooth and free from wrinkles of any sort. I have been often asked whether the boar or the sow has the greater influence on the progeny. I am inclined to favor the sow, from the fact of having many sows breed good pigs from different boars. At the same time, I would not use anything but a good boar.

In breeding from yelts, the latter should in no case be allowed to have their first litter until they are 12 months old; if bred from earlier they seldom reach the size which we like to see in the brood sow. Similarly with the young boar; never use him till nine months old, and then sparingly, bringing the sows to him and taking them away as soon as served. I have known two or three good young boars spoiled through being allowed to run with yelts and getting overworked, and refusing to notice sows afterward for many months.

As the young pigs come on the scene, they should each one be taken away and put into a box or hamper kept in readiness, and their little teeth nipped off by pliers made for the purpose. There are eight teeth, two at each side of the upper and two on each side of the lower jaw. They are as sharp as needles, and if not cut off they punish the sow considerably. This causes her to be uneasy, and in getting up and down she usually kills some of the youngsters. I am sure I save a great many pigs each year by insisting upon having the teeth attended to; if the little pigs are many days overdue the teeth appear extra long, no doubt making an extra growth in the sow. In cold weather the tails of the little pigs should be rubbed at the root with lard or lard oil for a week or ten days after birth, say each alternate morning; it prevents their getting chapped and falling off, and thereby saves a great loss in the value of breeding or show pigs.

I like to place the sow in her sty about a week before she is due to farrow, at the same time giving her a little exercise every day unless the sty is unusually large; the same after farrowing, exercise being very essential for moving off the urine or any secretion that may be left back through the afterbirth not coming away as it should. This latter is, of course, moved from the sty before the little pigs are put back to the sow after having their teeth attended to.

In the first meal after farrowing, which should be given as soon as convenient, I always use two ounces of Epsom salts and two ounces of powdered sulphur, mixed with a little warm milk. This, I find, answers well; it prevents fever, yet in no way injures the milk.

The next point we have to consider is a most interesting one, and, at the same time, a most important one, namely, the food best suited to pigs at various ages, and I have not yet been able to find a work that left the reader (especially if a beginner) quite clear that he could feed pigs equally well with the experienced herdsman. This, I think, goes far to prove that we can only feed successfully by daily observing how each pig, or pen of pigs, is thriving, and using judgment accordingly.

I grind most of my barley, using a sifter, the screenings going for the rougher pigs and brood sows. This, I find, keeps them in good condition cheaply; the finer meal goes to the younger pigs and those I may be forcing. Although barley meal is my sheet anchor, I cannot do without buying some toppings and bran. The former is mixed with barley meal for little pigs, and for those up to four months old, at the rate of one of meal and two of toppings. As the pigs get older I increase the meal, as it comes much cheaper to use one's own corn. The bran I use mixed with ground oats for the sows and litters, and when the young pigs are from five to six weeks old I add a little barley meal, simply to strengthen the sow to carry on her family until weaning time. I like the young pigs to feed as early as possible; I think future success depends much on this, as little pigs learning to eat when young expand, and by so doing consume a large amount of food, and consequently grow and fatten at an earlier age. I never feed more than twice a day with the meal mixture; but a few split beans given about 11 o'clock very much help the store pigs.

A few ashes occasionally will benefit the animals that are kept confined in sties. I use all my damaged corn, but at the same time I would never buy damp or musty corn, as the meal from such gets heated, and is not only unpalatable but injurious, especially to younger pigs.

It will be noticed that I have left out perhaps one of the principal foods; I refer to skim milk. Some feeders go so far as to say that pigs cannot be reared successfully without it. This, however, I cannot admit, as many of my best pigs practically had no milk. The fact that for some years I had only two cows, with no means of getting milk elsewhere, will be quite conclusive. Yet, to make myself quite clear on this subject, I must say that could I get

skim milk at a fair price, I should use it largely, as nothing forces pigs so well, especially when mixed with barley meal.

THE STABLE.

Care of Wagons and Carriages.

The life of the carriage depends, writes Hollister Sage in the *American Agriculturist*, not alone upon the character of the work and the material put into its construction, nor does its lasting beauty depend upon the paint and varnish used, although this has much to do with it. The man who owns the vehicle must do his part toward properly caring for and preserving it. There should be no chance for gases from stable or manure heap getting into the carriage room, for ammonia in the air will destroy varnish and fade colors, both of painting and upholstery. Ammonia unites with and gradually destroys the oil in the varnish, shrinking it, making it brittle and leaving it full of cracks. For the same reason, the carriage house should be dry and well ventilated. A frame building is better for storing carriages than one made of stone or brick. The carriage room should be moderately lighted. Too strong light or total darkness injure the color of paint or trimmings. Even dust has a deleterious effect upon carriage varnish, and nice vehicles should be covered with sheets made for the purpose, but these must not be thick enough to keep out the light. Close muslin is best. An aid to the preservation of varnish, as well as to the appearance of all rolling stock, is frequent washing with cold water. While a carriage is being washed it should be kept out of the sun. Abundance of water should be used with which to float off the dirt. Never use the sponge with a rubbing motion, as this scratches the varnish. Squeeze the full sponge against the panels, allowing the flow of water to carry off dust and dirt harmlessly. Following the washing of each portion of the gear and body, wipe it with a chamois skin, care being taken to rinse the well-soaked skin in water frequently, so that it may contain no particles of dust to scratch the varnish. Hot water and soap should not be used. It is best to wash carriages always at once on the return from a muddy drive, and before they dry.

Said an old carriage-maker recently: "After many years of trying to find some substance or mixture which will benefit the tops of carriages, I have failed. And the same is true throughout the world of trade and invention." From the moment the leather is placed upon the bows its destruction begins, and although it may be retarded by occasional washing with pure, soft water, it will, in time, shrink more or less, and lose its early comeliness. Never put oil, and, emphatically, never use varnish upon it. An occasional light application of the finest olive oil was, at one time, recommended, but experience has only condemned the use of this, together with every other substance. Top carriages should never remain long with the top down, and when they are left standing, the joints should be broken slightly, to take off the strain on leather and lining. Aprons and curtains should be frequently brought out and aired, or they will soon spoil. To prevent or destroy moths in woolen linings, fumigate thoroughly with turpentine or camphor.

The new vehicle should always be washed in cold water soon after its arrival, and the same treatment should be given carriages recently varnished. This holds true even if the varnish is somewhat tender, although it must be dry. Dust acts with peculiar force on fresh varnish. Frequent washings and exposure to fresh air will harden the varnish and increase its luster.

Every vehicle, whether new or old, should be inspected frequently, that no bolt, clip or tire may get loose. The smallest repairs that become necessary should be made at once, as nothing injures any kind of a machine so much as play of parts which were made to remain solid. The axles should be well cared for. Commonly they are neglected. They should not only be oiled frequently with the best of castor oil, using but a very small quantity, but, previous to each oiling, they should be carefully wiped with cloth, or sponged off with warm water and soap. Never use a compound that will gum on the axle, and take pains not to scatter dust from the tire upon the naked axle when removing the wheel.

No labor about the farm pays so well as the frequent painting of the rims or oiling them with boiled oil. No part of the wagon is so much subject to destruction as the rims, which roll between stones and through hot sand, grit and deep mud. Rims that are kept thoroughly painted demand less tire setting and less frequent renewal. It pays to keep all wagons well painted, whether for work or pleasure. Heavy vehicles may be quite as well protected by paint applied at home as more expensively in the factory. And it is not difficult to procure ready-mixed preparations that are reliable. It is surprising to note how much benefit a good application of boiled linseed oil, given occasionally, will do. Wagons from which the paint has entirely worn, and which the owner does not care to rub, sandpaper and carefully paint, he may sponge over with this oil, thoroughly colored with lamp black, or coach black, and the transformation will be as wonderful as it is cheap and sudden. No wagon should ever stand, even for one hour, exposed to sun and wind, outside of the owner's barn. And the careful user will seek protection from the elements whenever he stops for an hour. The durability of the vehicle may be doubled by careful usage.

A LIVERMORE rancher records his opinion of animal instinct in foretelling the weather this wise: "My pigs, when winter came on, made their sleeping place in the bed of a creek of my field, and I took it for granted that there was going to be a dry season. But Sunday night a perfect shower of water came down and drowned six of my best hogs, and now I'll never be fool enough to believe again that a hog knows more about the weather than I do."—*Contra Costa Gazette*.

THE HOME CIRCLE.

California.

Written for the RURAL PRESS by A. P. Hall.

Hail, California! land of flowers,
Of fruit and golden grain.
So peaceful 'mid the sunny hours,
And smiling 'neath the rain.
No winds from out the Arctic pierce,
No simoon blights and kills,
No storms of sleet nor cyclones fierce
Sweep o'er her verdant hills.

But gentle winds and sunshine bright
Touch every hill and vale,
Till fruits and flowers burst into sight
And perfume every gale.
Here spring coquettes with summer fair,
And summer with the spring,
While winter and his treasures rare
Will still to autumn cling.

Her mountains carved with wondrous power,
With awful grandeur crowned,
While rock and tree and tender flower
Spread beauty all around.

Up from the mist the ocean breeze
Comes fragrant to your door,
While grand Pacific, king of seas,
Does battle with the shore.
Her soil still specked with virgin gold,
Her mountains and her hills,
Her whitened rocks as fountains old
Make music in her mills.

This is the State supremely blest
With future great and rare,
That gives another, fairer West
A first Midwinter Fair.
And while ten thousand pilgrims pour
Through grand Sierra's gates,
A million lovers bend before
This queen of all our States.

The Old Country Road.

Where did it come from and where did it go?
That was the question that puzzled us so,
As we waded the dust of the highway that flowed
By the farm like a river—the old country road.

We stood with our hair sticking up through the crown
Of our hat, as the people went up and went down,
And we wished in our hearts, as our eyes fairly glowed,
We could find where it came from—the old country road.

We remember the peddler who came with his pack
Adown the old highway and never went back;
And we wondered what things he had seen as he strode
From some fabulous place up the old country road.

We remember the stage-driver's look of delight,
And the crack of his whip as he wheeled into sight;
And we thought we could read in each glance he bestowed
A tale of strange life up the old country road.

The movers came by like a ship in full sail,
With a rudder behind in the shape of a sail—
With a rollicking crew and a cow that was towed
With a rope on her horns down the old country road.

And the gypsies—how well we remember the week
They camped by the old covered bridge on the creek—
How the neighbors quit work, and the crops were unhoed,
Till the wagons drove off down the old country road.

Oh! the top of the hill was the rim of the world,
And the dust of the summer that over it curled
Was the curtain that hid from our sight the abode
Of the fairies that lived up the old country road.

The old country road! I can see it still flow
Down the hill of my dreams as it did long ago;
And I wish even now I could lay off my load,
And rest by the side of the old country road.

—Ladies' Home Journal.

The Woods' Ghost.

PROBABLY General Fawncliff was eccentric because he could not help it, but it is more probable that he did things in a manner entirely different from anybody else because he wanted to be odd and wanted to make a sensation. He was a wealthy man, and therefore he could do very nearly as he liked. He was haughty, overbearing and irritable. I always thought that if he had been the Czar of Russia or the Shah of Persia he would have played his role very well. He had built a fine house on the banks of the Delaware, and at the verge of the Block woods, of which he was the owner. He was not more than 45 years old and appeared to be entirely alone in the world; at any rate, no one in Blockville ever heard that he had any relations.

At the time of which I write I was a young fellow of 16, of no sort of consequence whatever, and my name was, but is not now, Pardon Sashwood, though mother and everybody else called me Pardy. My mother was a dressmaker in the town and did a big business. She never said anything about my father, and I did not know anything about him, and I concluded that

he had been hanged, or otherwise nipped in the bud, and I did not press my inquiries in regard to him. I was a regular resident in Block Hall, as General Fawncliff called his elegant mansion, and my first duty is to explain how I happened to be a dweller beneath its princely roof. I was very fond of fishing, and my mother was very fond of eating fish, for I caught very nice ones in the river. One day I sat upon a rock that projected out into the stream just below the general's mansion. Above me was a sandy beach, and while I sat there the general drove down upon it in his buggy, with a high spirited horse. I wondered what he was doing there with such a turnout.

The horse was full of spirit and the choleric driver seemed to be well supplied with spirits, though of the artificial sort. The animal pranced and capered on the sand, and did not appear to have learned that his master was as impatient as he was eccentric. The horse had a way of his own, and so had the general, and as the two ways did not run in the same direction it created an unpleasantness between them. At last the driver used his whip without the exercise of much discretion, and the brute manifested himself in a very decided manner. Then I decided that he was trying to drive the horse into the water, where he was unwilling to go. But the general got the best of it in the end and drove the obstinate creature straight into the river, as though he intended to cross to the other side. In a few moments the animal had to swim, but he struck out bravely, the general applying the lash all the time; in fact, he seemed to be whipping him for his own satisfaction, now that the brute had yielded the point.

In another moment the buggy, which appeared to be floating, suddenly toppled over and spilled the occupant into the drink. He lost his hold upon it, and then I saw that he could not swim.

The horse took a circle around the spot and swam leisurely to the shore, dragging the buggy after him. Just below the rock on which I was seated was a bateau, and I lost no time in rushing to it. I had some skill in the use of the paddle, and I soon reached the general, who was floundering about in the water like a grounded whale. He was a large man and I saw that it would be impossible to get him into the boat. I asked him to take hold of the stern to support himself while I paddled to the beach. He used expletives and insisted upon getting into the boat. I told him I would leave him to his fate if he did not do as I directed. The threat carried him, and he held on to the boat till his feet touched the bottom.

"I will kill that horse!" he exclaimed when he reached the beach and had recovered his breath. "He is the ugliest brute I ever drove."

"He is not so much a brute as you are, general," I replied. "You acted like a heathen when you whipped him, and I had half a mind to let you drown."

He looked at me in astonishment. Perhaps he thought I had earned the right to speak my mind, but whether I had or not, I expressed myself as plainly as though I had been the general and he had been Pardy Sashwood. Doubtless it was a new thing for any one to "speak up" to him.

"Boy, I want you to come and live with me," he said, and I was amazed then.

"I won't do it," I replied. "I would not live under the same roof with such a porcupine as you for all your money."

He actually teased me, and he expressed his obligations to me very handsomely, but I stuck to my text. I helped him right his buggy, now that the horse had cooled off, and he insisted on driving me home, which I permitted him to do. My mother saw me when I got out of the buggy. The general told me to think of his offer, and come to his house if I decided to accept it. My mother, after she had heard all about the affair in the river, insisted that I should accept the offer. I argued against it for a long time, but I finally yielded to her wishes. The next day I belonged to the general's household, and Mrs. Cashley gave me a hearty welcome.

General Fawncliff treated me with a degree of consideration accorded to no other person. I helped him about his accounts and papers, though I was permitted to attend the academy. I really came to like him after awhile, and I know that I improved his manners and morals to some extent. His narrow escape from drowning had strongly impressed him, I discovered. He was a victim to that malady of sedentary and lazy people, insomnia. He had been in the habit of drinking more whisky than was good for him as a remedy. He told me he could not sleep until he had drunk at least six glasses. I reasoned with him, talking flatly and plainly, as I always did. I asked him to stop it and walk one or two hours in the Block woods after nine in the evening.

He tried it with good results, and after that called me doctor.

After he had practiced this walking for a couple of weeks, he told me he had seen a ghost in the woods three successive nights. I laughed at him and asked him if he had been drinking whisky again, but he assured me he had not. The next night I watched myself in the grove. Sure enough, I saw a figure in white, though I did not believe it was a spirit from the other world. I saw that the figure tried to approach the general, but from fear, or some other motive, he kept his distance from it.

I had a revolver, and with this in my hand, though it was not loaded, I went with the general to the woods one bright moonlight night. The ghost came as usual, and the general was inclined to retreat. So was the figure when I showed myself. But I pursued it. I held up my revolver and threatened to fire if the ghost did not halt.

"No, Pardy! Don't fire! I am your mother," screamed the ghost, not knowing that the weapon was not loaded.

She halted, and I went up to her, the general following me when assured that the figure was not a supernatural one. She was dressed in white, as she was usually in summer, and I wondered if she was troubled with insomnia.

"Pardy, General Fawncliff is your father and my husband!" exclaimed my mother when the general had come up with us.

"Emily!" he exclaimed, "I wondered where Pardy got all his impudence, for I thought he could have inherited it only from me."

We had a long talk in the moonlight. I knew that my mother had come from California, but her former home was one of the things of which she seldom spoke. The general acknowledged her as his wife before me. They disagreed and had separated. For the sake of her son she had followed him, hoping that years had softened his temper. She did not care to call upon him at his house, but when I became on such excellent terms with him she had decided to meet him in the woods, where I had told her that he walked every night. He had fled from her, but she persevered till I brought matters to a head. My mother is now the mistress of Block Hall, and I still have to do a great deal of plain speaking.—Oliver Optic in Philadelphia Press.

Restless Babies.

The very last resort with a restless baby is a narcotic or a sleeping draught. In fact, such a remedy should never be administered, except on the prescription of a physician. Happily, we believe, the general intelligence among mothers has so increased in recent years that the over-dosed baby is becoming a rarity in this generation.

The trained nurse is no doubt largely to be credited for this improvement. The Sairy Gamps of two generations ago not only used stimulants themselves, but gave them to their charges. It was not an uncommon thing a few generations ago to administer gin to little babies, in minute doses, it is true. The foundation of nearly all the soothing mixtures so freely in use twenty-five years ago was some form of morphine. The use of such remedies as these frequently lays the foundation for a diseased state of the brain, and it is not strange that we have so many people of uncertain mental balance, familiarly called cranks, when we remember how mercilessly the mothers of two generations ago, taught by the ignorant nurses of the time, dosed their little ones with all manner of narcotics, from paregoric to patent nostrums.

Women of middle age can remember many families in former times where paregoric was a common household remedy given to infants in case of the most trifling restlessness, and was sold in the country grocery stores in quantities, with morphia, opium and dangerous drugs, with no pretence of a prescription.

There are very few babies in health who do not sleep well at night. The nervous restlessness of a child that comes from teething may almost always be allayed by a warm salt bath, given just before retiring. The bath should be at about the temperature of 90 degrees, and the child should be vigorously rubbed after the bath with the palm of the hand. The fashion which some mothers have of walking with a baby at night is one of the most foolish habits, and, once contracted, it is very difficult to break up. The actual contact of the little creature with a grown person is no special benefit to it. That law of personal magnetism, of which we understand so little, exerts its force at such times, and the nervous, weary condition of the mother affects the child, rendering it even more irritable than before. The little one is far better sleeping by itself, well covered up on a hair mattress, never on

a feather bed. The best physicians now advise a flat hair pillow, instead of the pillow of down and feathers so commonly used. There should be no pin or anything else about the child's clothing to irritate it. It should be soothed by a soft stroking motion of the hand in its little crib if it is restless, but it should not be taken up unless it is sick. In short, the less handling and dangling a healthy baby receives, the better for it.

Trifles.

There are a great many excellent people who allow their energies to be wasted on trifles, and are exhausted thereby for practical work. It is the first duty of the little child to distinguish between the seeming and the real, between that which is worthy of attention and time and that which is a matter light as air, to be passed by and forgotten. Some older people never learn the lesson. They do not know what to neglect. They break into ill-temper and passion perhaps over matters that ought to be beneath their notice. How many foolish women grieve over supposed slights and devote precious hours brooding over insults that have no existence except in their own fertile imagination. What a multitude of people there are who insist on taking care of the trials of to-morrow and lose strength and purpose which they need for the cares of to-day.

Trifles all these things are, but, seen through the mists of our imagination, they assume most portentous and horrible shapes. The great trouble with people who fret over trifles is that they use up their powers in this direction, and are quite likely to become useless members of society—a burden on themselves and their friends. It is true that there are a great many fretful women who do not reach any such extreme as this, who work and worry through life, burning the candle of existence at both ends, and fill early graves when they ought to be in the prime of strength and womanhood. There are many little things of daily and almost hourly occurrence in the household which are annoying to the patience, but the wise woman does not allow herself to be controlled by trifles such as these. She retains her temper and remains

Mistress of herself, though china fall.

She does not allow her patience to be overcome by the stupidity of servants or the thoughtlessness of children. The draughts of the stove may all go awry at the ninth hour, the kettle may spring a leak, and company may arrive in the midst of all sorts of derangements; and yet with such annoyances as these a wise woman can easily rise above them and make the best of the matter. While everything may be lost by giving way to fits of anger or discouragement, everything may be saved by deliberate and thoughtful action. Stoves are not senseless things, and do not act apart from the mechanical laws which govern their construction and action. If the stove does not burn well there is some reason for it, and the first thing to be done is to examine all the draughts and other details of the stove and find out if possible what the trouble is. A leaky kettle may be readily replaced by a sound one, and company that comes unbidden cannot always expect to find the house in perfect order, but expects, to use the old phrase, "to take us as she finds us."—N. Y. Tribune.

Secret of His Health.

Many hold to the opinion that the majority of people eat too much. We hardly think, however, that people engage in the ordinary avocations of life will be willing to adopt the regimen of a famous old man as told in the *New York Sun*:

He is far along in the seventies, is an indefatigable worker, free from deafness, eyeglasses, rheumatism and other indications of advancing age. His name is withheld at his own request but his method of life is of interest. Until he was forty years of age he suffered from a number of pretty ills. Indigestion was one of them and an overburdening amount of fat another. Almost incessant headaches at night rendered his work uphill and difficult. It was not until he had passed his fortieth year that he came to the conclusion that nearly all his ills came from excessive eating.

He put himself at once upon a regimen which he has maintained for upwards of thirty years. Like Caprioli, Napoleon and many other great men, he rises at six in the morning in winter, and at five in the summer, and takes a light exercise before dressing. Then he lights an alcohol lamp, boils some water and makes a cup of coffee of two parts of Java and one part of Mocha. The coffee is selected with great care. After it has boiled for fifteen minutes he pours a little cold water on it to settle the grounds, puts in some milk, drinks two cups and eats three or four bis-

cuits. Then he goes in his study and undertakes the most serious problem of the day. For six hours he works steadily. His mind has not been disturbed by any incident, not even by the entrance of the servant with his breakfast. At one o'clock he eats whatever his appetite craves. There is no restriction whatever at this meal. After this he walks religiously for an hour, and during that day not another mouthful of food passes his lips. If at eight or nine o'clock at night a feeling of hunger comes on he takes a glass of milk, but nothing more. He has come to the conclusion that excessive eating kills more people than excessive drinking.

Royalty in Gracious Aspect.

The Princess of Wales must have more accomplishments of the traditional feminine order than other women in the United Kingdom, if all the pretty incidents are true that one reads of her. Perhaps the latest is that of a call the gentle daughter of the Danes made on an old protegee of hers living in one of the cottages at Sandringham. The good dame was knitting a stocking and the Princess took it out of her hand, saying, "You can't do the heel as fast as I can." And as she sat and chatted this Queen-to-be knitted the naggiest heel possible. It is needless to say that sacred stocking has since remained in status quo and treasured in a drawer with the needles just as the Princess left them.

Particularly since her son's death, the Princess has seemed to enjoy herself best when quietly occupied in some of the womanly arts she learned to turn her hand to in her girlhood days, when she fashioned her own gowns and trimmed her own bonnets, to say nothing of "doing" her own fine laces. She is very fond of piano playing, and holds an honorary degree of doctor of music. When her sister, the Empress of Russia, is with her they spend many happy mornings, playing eight-handed duets together with the Princesses Victoria and Maude. All kinds of fine needlework the gentle lady rejoices in, and spends happy hours like other grandmothers, not royal, stitching on the little frocks for her grandbaby. Besides her many other accomplishments, the Princess can cut a gown to perfection and even give hints to her Paris designer, which result in her being accounted the best dressed woman in England.

Lemon Juice for Gout.

Details for this remedy were published in the *Lancet*, and the superiority of the remedy over every other demonstrated; yet, strange to say, it has since fallen into comparative desuetude, probably from its very simplicity. It is a fact not generally known that no object in nature contains a larger amount of potassa than lemon juice, though popularly supposed to be acid. This is only because it is naturally joined to a sharp acid, citric, but which has such feeble affinity for the base that it readily parts with it in the body, and leaves the free potassa to unite with the lithic or uric acid in the system. One case was that of a licensed victualer, a free-liver, who for years had been a martyr to gout. His joints were enormously enlarged, and several of them covered with chalky stones. He was given lime juice largely. The good effects were perceptible within 24 hours after the first dose, and in less than a fortnight a complete cure was effected. The swollen joints gradually resumed their usual size and mobility, the chalky deposit returned to the liquid form and was absorbed. The remedy was continued for several weeks, and it became the favorite drink of the patient. In two years his hands were as small and symmetrical as if they had never been disfigured, and he continued in perfect health.—The Leisure Hour.

Every-Day Farm Philosophy.

The more you love yourself the less you are sure to love others.

A trifling dog is generally not half so trifling as the man who keeps him.

The stalk of corn that grows the tallest and appears the most conspicuous, nearly always bears a blasted ear.

Prodigality is no sign of generosity. It rather indicates a narrowness of both mind and heart too contracted to comprehend the real value of things.

If some men would hoe with as much devotion as they appear to pray in prayer meeting, they would not have nearly so much complaint of hard times to make.

The man who will spend the most time, in the harvest season, talking politics, is generally the one who is of the least account to either himself, his neighbors or the government.—American Agriculturist.

The Farmer's Boy.

A compact form of rugged grace,
Unstudied and uncouth in style,
A clear gray eye, an honest face,
A brown, tanned cheek and bashful smile,
A battered hat on firm-set head,
Rough garments bearing scars of wear,
Strong shoes o'erweighting a firm tread—
This is the yeoman's sturdy heir.

He roams through forest and through field,
With frisking Fido at his side,
The nimble squirrels have to yield,
Their nests the shy birds vainly hide;
He knows just where the big fish keep,
And where the rarest wood-blooms spring,
Where winter snows are drifted deep,
And icy ponds are glistening.

In summer-time, at eve and morn,
To bring the cows his irksome task;
He loves to hear the dinner horn,
To bathe and in the sun to bask;
His youthful heart is filled with pride
When first he drives his father's team,
And when he learns to mount and ride
Life seems to him a sunlit dream.

Thus lives he till he finds at length
The farm has labor for its boys,
And, as he grows in age and strength,
More trials mingle with his joys;
Thus learns he in his plastic youth
The silent lessons of the soil—
The sure rewards of patience, truth,
The filling happiness of toil.

—D. A. McKellar.

Don'ts for Boys.

- Don't gamble.
- Don't drink whisky.
- Don't ever be unkind to your mother.
- Don't think it smart to disobey your father.
- Don't talk when you should listen to older people.
- Don't even talk disrespectfully about girls or women.
- Don't imitate a man who is not as good as you wish to be.
- Don't use bad language before ladies or old men.
- Don't indulge in vulgar conversation before young boys.
- Don't try to be too good. Be a boy; but be a manly boy.
- Don't neglect your opportunities of securing an education.
- Don't always be making good resolutions and so often break them.
- Don't go wild after some other boy's sister when you should go with your own.
- Don't excuse yourself because you are better than the worst of boys you can think of.
- Don't treat any girl in a way that you would not like your sister treated by other boys.—Ex.

Scylla and Charybdis.

The whirlpool of Scylla and Charybdis are situated in the Strait of Messina, between Sicily and Italian Apulia, and although dangerous to the mariner of the ancient world, are not very formidable in the present day. The whirlpool of Scylla lies at the base of the cliffs on which stands the village of Scylla. The circling waters have worn the cliffs into caves, which in heavy seas emit sounds like the barking of a dog. Charybdis is near the port of Messina, nine sea miles from Scylla, and, according to Signor Spallanzani, is 500 feet deep. The old danger of sailing between them has recently been explained by M. Keller, an engineer, who shows that the currents in the strait depend both on the tide and wind. The currents are strong because the tide is low in the Ionian sea when it is high in the Tyrrhenian sea and vice versa, and whirlpools, more or less energetic, are formed at various points of the strait. When the wind is from the south-east the waters pour from the Ionian sea into the strait and form whirlpools north of the port of Messina, and also near Faro, where ships at anchor are sometimes carried out to sea and borne by the current on the rocks of Calabria, toward the point of Pezzo, a little further off than Scylla. It is probable, therefore, the ancients meant by Charybdis the casual whirlpools near the port of Messina, and by Scylla those at Point Pezzo. Between these two points the currents are extremely rapid, strong and variable. The danger is really serious for sailing vessels, which were all the ancients had, and an inexperienced pilot might, in avoiding Charybdis, find himself in Scylla.—London Globe.

Crossing the Limbs When Sitting.

It really seems as if the women could not be allowed to do anything without being told it is injurious. Yet it is well to heed such suggestions as the following, which is doubtless true. Women who sit with their legs crossed, to sew or read, or to hold the baby, are not aware that they are inviting serious physical ailments; but it is true, nevertheless. When a man crosses his legs he places the ankle of one limb across the knee of the other, and rests it lightly there. A woman, more modest and restricted in her movements, rests the entire weight of one limb on the upper part of the other, and this pressure upon the sensitive nerves and cords, if indulged in for continued lengths of time, as is often done by ladies who sew or embroider, will produce disease. Sciatica, neuralgia, and other serious troubles, frequently result from this simple cause. The muscles

and nerves in the upper portion of a woman's legs are extremely sensitive, and much of her physical structure can become deranged if they are overtaken in the manner referred to.

DOMESTIC ECONOMY.

Salads.

Green vegetables and salads of all kinds are, according to the *Philadelphia Record*, the best complexion beautifiers. A daintily made salad is likewise a beautifier of the luncheon or dinner table, as all experienced hostesses will admit. Tomatoes iced and evenly sliced and served with a dressing of salt, pepper, vinegar and sugar make a delicious salad. An excellent lettuce salad is made thus: Rub the yolks of two hard-boiled eggs to a powder, add one teaspoonful each of sugar and pepper, one-half teaspoonful each of salt and mustard and two teaspoonfuls of salad oil. Let it stand five minutes, then beat in four tablespoonfuls of vinegar. Cut up two or three heads of white lettuce with a knife and fork and pour the dressing over it.

Russian salad is made by mixing cold vegetables, as carrots, peas, string beans, potatoes, corn, beets, etc., cut in small pieces and served with a dressing containing red pepper and vinegar.

Carrot salad is made by cutting cold, boiled carrots into very thin slices and sprinkling with sugar; then add the juice of a large lemon and a wineglassful of salad oil.

Cauliflower Salad.—Prepare and boil the cauliflowers, drain and let them cool; cut them in pieces; season them with salt, pepper, vinegar and oil, and serve and eat them as any other salad.

Salmon Salad.—Mince cooked salmon and pour over it the following dressing: Mix one teaspoonful each of salt and pepper and one teaspoonful of grated onion; then add three tablespoonfuls of vinegar and one tablespoonful of oil.

To be worth anything, character must be capable of standing firm upon its feet in the world of daily work, temptation and trial, and able to bear the wear and tear of actual life. Cloistered virtues do not count for much.—C. Smiles.

A woman has two smiles that an angel might envy—the smile that accepts a lover before words are uttered, and the smile that lights on the first-born babe and assures it of a mother's love.—Haliburton.



DURING hard times consumers cannot afford to experiment with inferior, cheap brands of baking powder. It is NOW that the great strength and purity of the ROYAL stand out as a friend in need to those who desire to practise Economy in the Kitchen. Each spoonful does its perfect work. Its increasing sale bears witness that it is a necessity to the prudent—it goes further.

N. B. Grocers say that every dollar invested in Royal Baking Powder is worth a dollar the world over, that it does not consume their capital in dead stock, because it is the great favorite, and sells through all times and seasons.

AGRICULTURAL NOTES.

CALIFORNIA.

Alameda.

Livermore Herald: Agent Mitchel furnishes us with the following information as regards the freight shipments from here during the past year:

Grapes.....	3,776,300 lbs.
Wheat.....	1,579,200 lbs.
Barley.....	7,224,300 lbs.
Hay.....	31,959,800 lbs.

There are 7000 tons of hay and 5000 tons of wheat still stored in the warehouses.

Butte.

The Marysville Democrat is authority for the following, on "Alfalfa, Figs and Pigs." A tract of land containing 40 acres of fair quality, divided into four lots of ten acres each, planted to fig trees and alfalfa, will, in five years from date of planting, produce feed for 200 head of pigs. Each year after the crop of figs will increase rapidly and in ten years will be very valuable. Hogs will thrive on alfalfa, and the figs that will fall from the trees will fatten them and produce a good quality of pork. Use two of the fields at one time, so that while the alfalfa in these is being consumed, the others will present a fresh supply. The two and three crops of figs will furnish fattening food, while the continued growth of alfalfa will be sufficient to keep them in fair condition the entire year.

Biggs Argus: In the residence yard of ex-Supervisor W. A. Walker we were shown a navel orange tree bearing some of the most perfect oranges we had ever seen. This tree was on exhibition at the citrus fair held at Oroville several years ago, and was purchased by Mr. Walker for \$20, an investment which he will never regret.

El Dorado.

El Dorado Republican: The Horticultural Commissioners of this county are beginning the annual crusade against the bugs by inspecting orchards and serving notices. The scale has decreased to such an extent that it is no longer dreaded, and everybody can see that the trees can be protected by care and attention.

Fresno.

Enterprise: The vineyardists in the Wildflower section are digging up vines and putting the land in alfalfa. Stock raising and dairying are displacing raisin growing. Several notable creameries are established already and the number is constantly increasing. Mr. Manghetti of Chicago took the premium at the State fair for best creamery butter last fall, and has many ambitious neighbors who may contest honors with him in the future.

Expositor: The hardest part of the winter is no doubt now passed, and it is a source of satisfaction to know that the many thousand young orange and lemon trees planted in the thermal belt of this county have stood the cold weather with little or no damage. The weather has been colder than usual, and since the trees have endured it so well, it is reasonable to conclude that they will stand the cold weather of the future equally as well. The young groves planted have passed the winter as free from harm, as has the nursery stock, and this has established the truth that Fresno county is destined to become great for citrus fruits as well as for grapes and other fruits. Although the times have been hard, yet large numbers of orange and lemon trees have been planted, showing that the people have faith in the future.

Humboldt.

Mr. E. A. Jenks of Harris, Humboldt county, writes that they are having unusually cold weather in his section, which is very hard on lambs now beginning to come in. The old practice of little lambs take care of themselves will, he says, have to be given up, and those thus neglected die, while a little care easily saves them. Mr. Jenks says that his is a fine section, with land cheap, and he wonders why more do not come to share in its advantages. He will gladly answer inquiries respecting the district.

Kern.

Kern County Echo: Some three months since, W. S. Tevis liberated on the Stockdale ranch ten Japanese pheasants—two cocks and eight hens—with the intention of allowing them to increase in numbers, thereby adding to Kern's game list. In order to protect the pheasants until their numbers have increased to such an extent that sportsmen may hunt them without danger of extermination, the Board of Supervisors, by ordinance, have made it a misdemeanor to kill the Japanese pheasants until the expiration of three years.

Napa.

Napa Register: Farm wages have for many years been higher in this State than in any other section of this country. In early times, when prices for farm produce ruled high; when wheat commanded three and four cents per pound and even more; when barley sold for two and three cents and hay for \$20 per ton; and when money was easy throughout the State, wages of farm laborers were high. From \$30 to \$40 per month was the ruling rate 25 or 30 years ago. While wages in other branches of business were materially cut down, farm wages have not been reduced in proportion to the difference in prices realized for all kinds of farm produce, the farmer feeling all the while that he was often paying more for labor than he could well afford. If that was the case previous to last year, it is far more so now when farmers find it difficult to realize fair profits on their produce. Farm hands on a ranch in Monterey recently struck for \$30 per month

when they had been receiving \$1 per day. They did not carry their point. On the large Glenn estate wages have been of late cut from \$25 and \$40 per month to a uniform rate of 75 cents per day. Other large farmers in other portions of the State have cut wages to \$20 with board. One thing is very apparent. Farmers in this valley are obliged to economize far more than ever before. They cannot afford to pay the price for labor and other items that they have in the past. On the other hand, it may be truthfully said that employees can obtain more for their money than they ever could.

Kings.

Hanford Sentinel: The scale bug is worse this year than usual, and it behooves every one who owns a fruit tree to soak it with a sure remedy early in the season. All trees other than fruit-bearing trees that the scale subsists on should be grubbed out and burned up. The future of Kings county is bright for good fruit and strong productions, but the scale-bug pest will hurt it very much if allowed to exist at all. The only safe way is to fight it from start to finish and to spray twice a year if necessary. One great point to be observed is to see that those who spray use the proper material. There are mixtures that will kill the scale completely, but those who go about spraying for profit may use bogus mixtures that are cheap and of little value. See to it that you do not pay for a spurious mixture. The health of our fruit trees is second only to the health of our people.

San Bernardino.

Redlands Facts: The Orange Growers' Association received an inquiry a few days ago from a customer in the Northwest for a half carload of frosted oranges, in order, it was stated, to compete in price with oranges in that condition in other sections which were being sold in that market for very low prices. The hucksters, it was claimed, were supplying the retail demand in that locality with frosted oranges at from 10 to 20 cents per dozen, of good size and fair appearance, and it was to meet this kind of competition that the peculiar request was made. It was suggested at a meeting of the association directors on Monday that a contract be made with the Union Ice Company to freeze oranges in quantities as may be desired to fill orders of this kind. If frosted fruit is to become popular, and the demand brisk, Redlands should not be behind its neighbors in its ability to supply the demand, even if some expense is incurred in the process.

Chino Champion: W. A. Lyell brought into this office the first of the week a straight limb from a prune tree, entirely of last year's growth, that measures just 10 feet 7 inches in length. It is from the prune orchard just northwest of town, which is being trimmed.

San Diego.

During the year 1893, 444 carloads of produce of all kinds were shipped from Escondido, an increase of 159 carloads over the preceding year, says the Times. About 20 carloads of grain and other products have been shipped out since January 1, which, added to 159 carloads stored in the town, makes a grand total of 623 carloads produced in that fruitful section last season. The shipments comprise 115 cars of hay, 100 cars of barley, 80 cars of wheat, 60 cars of oats, 38 cars of raisins, the balance being made up of various miscellaneous products.

San Joaquin.

Stockton Mail: A theft of as novel a nature as it was coolly done was reported at the Sheriff's office late Saturday afternoon. It was nothing less than the willful, unlawful and malicious stealing, taking and carrying away of an orchard. A farmer who lives on the French Camp toll road, just this side of the bridge across the French Camp slough, upon returning to his place on Saturday was astonished at finding his promising orchard of young trees all dug up and gone. The farmer left his son in charge of the premises during his trip to town, and while the husbandman was away two men drove to the place in a wagon and proceeded to dig up the trees and pile them into the vehicle. "What are you doing with those trees?" demanded the lad, upon seeing the men engaged in despoiling the orchard. "Oh," coolly answered one of the fellows, "we bought those of your father a short time ago, and we thought we'd come to-day and take them away, so they won't be of any further trouble to you." To the boy this explanation was sufficient to dispel any suspicion he may have entertained that all was not right, and he accordingly returned and resumed some work that he was doing in another portion of the farm. Between 150 and 200 choice fruit trees were stolen. Many of them were specially imported, and altogether were worth from \$200 to \$300. A search was instituted for the thieves, but no trace could be found of them anywhere. The trees cannot be kept out of the ground any great length of time without being killed. They have not been disposed of to any of the nurserymen of this vicinity, nor, so far as could be ascertained, to any orchardists along the road.

Santa Cruz.

Watsonville Pajaronian: One of the largest fruit houses of Omaha announces in its circular letters to the trade that the only apples that appear in the market packed in first-class style and in excellent condition were from California. It is one of the firms for which W. R. Keller made extensive shipments, and the apples referred to were bought through him. In conversation with the writer on the day of his departure, Mr. Keller stated that he had never handled apples that were packed in better condition than those put up in the packing houses of this valley, and the houses to which he had shipped had found the fruit to grade according to sample. This is high praise, as it comes

from a man who has handled fruit in every apple district of the country. A reputation is what our fruit wants in every market, and it can obtain and maintain it if the orchardists will fight all manner of pests and handle their trees to the end that the best results can be obtained. Then it will be an easy matter for packers to box in fine style and keep up a high mark for the Pajaro apple. The Pajaro apple has made a very successful debut in the Eastern market, and it can keep up its high name and widen the territory of its market if orchardists will give their closest attention to every detail of the business. The coast apple market is limited. If this territory had had to depend on the San Francisco market this season in disposing of its apples, scores of carloads of this fine fruit would have rotted in the packing houses. Clean fruit and good packing will give Pajaro apples a market that will not be bounded by the confines of the country. The growers of this section have many advantages over their brethren of other districts, and they can produce a fruit that will always be in demand. The packers realize the need of opening an extensive outside market, and it is probable that they will take steps in this direction before long; but the continuance of such a market depends on clean fruit.

Solano.

Orchardists are very busy in every part of Suisun valley. Pruning is nearly done, and the work is far in advance of what it was last year.

Sonoma.

Index-Tribune: The weather the past six weeks has been such that plowing and pruning have been greatly retarded in this valley. At the present the ground is soaking wet and has been so for several weeks, and there is hardly an orchard or vineyard in Sonoma valley that has been plowed. What is wanted now is a few weeks of dry weather. The fruit outlook was never better at this season of the year, and a heavy crop is assured.

The Imprint reports that work will shortly begin on a creamery on the Burdell place on San Antonio creek, a few miles southwest of this city. It will be a concrete and frame structure of modern design and will contain all the very latest machinery and every modern device for making and handling butter. The new creamery will, from the start, be able to utilize the milk of 1000 cows, and all arrangements have been made by Dr. Burdell for the requisite amount of milk which the dairymen of that vicinity will furnish the new institution. It is the intention of the builders to increase the creamery to a capacity of from 1500 to 2000 cows.

Cloverdale Reveille: The third consignment of dried prunes to the Eastern market was shipped Friday by Brush & Williams. The carload was made up of odd lots gathered here and there, and practically cleans out the prunes in this section. Sioux City, Iowa, is the destination of the car, where the prunes will be disposed of to wholesale dealers. The previous shipments were disposed of at satisfactory prices, and the firm is confident of a like return from the present lot, as they were all of good size.

Tulare.

Visalia Times: One enterprising vineyardist in this valley is going to turn his vineyard into a hen ranch this year. He will let the hens feed on the grapes. Thus he will turn his grapes into eggs instead of raisins.

Ventura.

Venturian: Mr. Wilsie has left here for the Ojai with a load of magnificent looking orange and lemon stock from the Claremont nurseries, near Pomona. Mr. Wilsie, in partnership with Mr. Skinner, will lay the foundation for a profitable lemon and orange orchard, and they have made a start with 3000 choice trees, mostly lemon.

Yolo.

Mail: J. S. Griffith of Yolo will please accept our thanks for a fine box of grapes left at this office. The grapes are of the Muscat variety and are in a splendid state of preservation. Mr. Griffith informs us that he raised the grapes himself and picked them from the vines on his place at Cacheville last September. He put a large number of bunches in his cellar on a stone floor, and has had good grapes to eat all winter. They are withered but very little considering the length of time they have been plucked, and are excellent eating.

Mail: Mr. A. M. Eaton, who does a considerable business in nursery tree stock, informs us that the trade in young trees is not very brisk this year. He is sending out, however, orders daily, the sales being confined to prunes, almonds and Sultanias almost exclusively. He attributes the slow movement in the tree-planting line to the low prices lately prevailing for fruit.

A General Round Up.

In the farming districts of California where the depredations of squirrels and gophers are so universal, and where the individual and aggregate losses thereby caused foot up such enormous amounts, it becomes the duty of every man or woman engaged in agricultural pursuits to exert every means within their reach to destroy the evil. This is a duty that they owe no less to their neighbors than to themselves. When it is known that the means for destroying the pests is at hand and easily obtained, the problem is at once simplified, and as the mating season of these rodents is at hand, prompt and active measures by those who have been their victims in past seasons will no doubt be the order of the day.

Then for a general massacre, the farmer who is wise with experience or advice will ask his grocer for "Wakelee's Squirrel and Gopher Exterminator." And he will take no other. In case the dealer should

not have the genuine article in stock and should attempt to push an inferior preparation upon him, the man who is determined to kill will at once order "Exterminator" from headquarters (Wakelee & Co., San Francisco). The cost, 50c per one-pound can, or \$5.50 per dozen, is practically about the price of the imitations, and will cut little or no figure in the business when the results accruing are taken into consideration. To give a better idea of the nature and application of the Wakelee Exterminator, as well as to quell the doubts of those who are not at present acquainted with its merits, the following testimonials are submitted:

[From John T. Ward, Esq., Napa.]

MESSRS. WAKELEE & CO. Gentlemen:—We have given your Squirrel Exterminator a fair trial, and are perfectly satisfied with its workings. It is a dead shot; 15 kernels at each squirrel hole will kill almost every squirrel, and after filling up the holes few are found re-opened.

We poisoned one field which was badly infested; to secure the scalps, we placed the poison two feet from the holes. In almost every instance it killed before the squirrel could get back to the hole. In the field we found blackbirds and meadow larks dead from its effects, and dogs and cats which ate the dead squirrels were also killed. So completely was the field rid of the vermin, that the grain stood thickest about the stumps and trees, where always before the squirrels had destroyed the seed.

I can recommend your Exterminator to all who are troubled with squirrels. It does all you claim for it, and is the most effective poison I ever used.

Perhaps the best recommendation I can give it is, that after one season's trial I am so well satisfied with it that I shall use it in larger quantities this season. Very truly yours,

JOHN T. WARD.

[From the Squirrel Inspector, San Lorenzo District, Alameda County.]

MESSRS. WAKELEE & CO. Gentlemen: I have used your Squirrel Exterminator in this district, and find that it fully comes up to its recommendation, and the most efficient poison yet used by me.

GEORGE HYDE,

Squirrel Inspector San Lorenzo School District.

During the past year I have sold many hundred cans of WAKELEE'S Squirrel Poison to our farmers and Squirrel Inspectors in the vicinity of Antioch. To my knowledge many experiments have been tried systematically with the poison by them, and all pronounce it to be the most economical as well as the most destructive poison now in use.

WM. ODEN.

[From well-known farmers in San Luis Obispo County, El Paso de Robles Springs.]

MESSRS. WAKELEE & CO. Gentlemen:—In reply to your note, we would state that, after having given your Squirrel Exterminator a thorough trial, we can unhesitatingly pronounce it the most efficacious and destructive agent we have ever employed against squirrels.

We have used strychnine and phosphorus, and can confidently state as to their merits, compared with those of your Exterminator, either as regards cheapness or destructibility, the odds are greatly in favor of the Exterminator. Many of our neighbors are using it, and with the most satisfactory results.

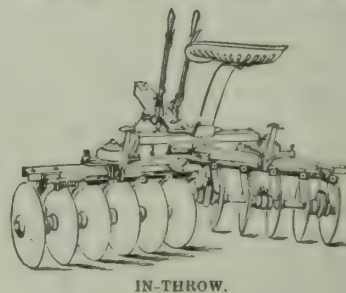
The squirrels, many of them, die before they can get to their holes; and fields, which a few weeks ago swarmed with pests, are now comparatively free.

Respectfully yours,

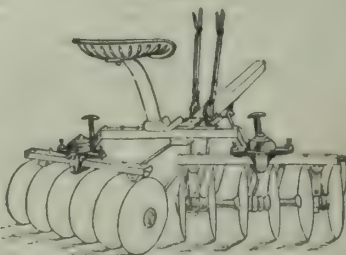
W. D. ILLINGWORTH,
C. D. MOREHOUSE,
W. T. JOHNSON.

Procure only the genuine Wakelee's Exterminator and a general round-up of the rodents will follow.

LION REVERSIBLE Steel Frame DISC HARROW.



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\$25; Blowpipe Assay, \$10. Full course of assaying, \$50.
ESTABLISHED 1864. Send for circular.

Freak of Electricity.

A railroad exchange reports a curious freak of electricity which has been discovered in connection with a leak in the mains of the Indianapolis Gas Co. In Illinois street, buried four feet deep, is a main that has been down for 52 years. It was abandoned 22 years ago because of its size, but the pipe is still in an excellent state of preservation. When the Citizens' Street Railway Company sunk their trolley-line poles in the ground, they were placed close to this abandoned main; some of them were flattened and rested against the pipe. The insulation wore off the top of the pole, and the iron became charged with electricity. The current ran down the pole into the ground until it came in contact with the cast-iron main, against which the pole rested. At that point the current burned a hole through the post and through the cast-iron gas pipe. The current ran along this cast-iron pipe for 200 feet north, where it came in contact with a 1½-inch wrought-iron service pipe that crossed the old artificial main. At the junction of these pipes the current again showed its power by burning large holes in both pipes, and the melted metal formed into small globules, like shot, perfect in size and form, and then dropped into the old pipe. The gas released from the service pipe, followed south on the old main until it reached the electric post, and entered into the tube through the hole burned out by the current. The post was soon full of gas. A car passing made a spark that set it on fire, and the flames burst from the top of the pole. An examination of the service pipe and the old main found them to be in excellent condition.

Lunar Illumination.

In a paper read before the French Academy of Sciences, Mr. Secchi has remarked on the enormous difference in the time of exposure required to photograph the moon, in its different phases, by the collodion process. Thus seven minutes is necessary for the phase of four days, but only about 20 seconds for that of the full moon. Differences of luminous intensity are also very marked on the different parts of the surface; and this fact, although it is quite plain to the eye in the moon at night, almost disappears in the moon as seen by daylight. In fact, looking at this orb while the sun is still on the horizon, the mountains will be seen very clearly on the blue ground of the firmament, while the seas have the same intensity as the terrestrial atmosphere, and, for that reason, are invisible. Thence flows a result of interest in photometry, viz., that the light of our atmosphere, enlightened by the sun, is equal to that of the more sombre parts of the full moon during the night.

To Purify Sewage.

That electricity is a giver of life has been proved by many of its recent applications to farming, etc., and that it is equally a destroyer of life has been demonstrated in a variety of ways. Its latter qualities are further shown by Albert E. Woolf, who has devised a method of disinfecting sewage by the electrolysis of sea water. At Brewsters, a small town about 20 miles from New York, it was found that sewage was percolating through a marsh into one of the streams from which New York derives its water supply. To remedy this, we are told, a steam plant of 15-horse power has been put down for purification of the Brewsters sewage. The dynamo furnishes 700 amperes at a pressure of five volts, a current amply large enough to electrolyze and thoroughly disinfect the liquid sewage which was the source of all the danger.

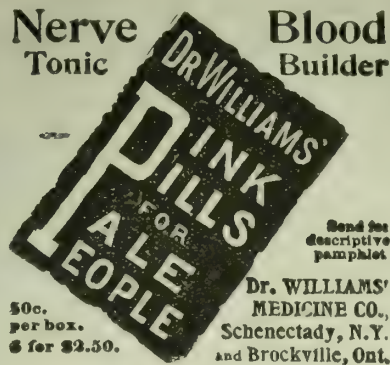
A process of forming artificial whalebone from animal hair, consisting in subjecting hair to a softening bath, then to a bath of acetic acid, and finally placing the mass under great pressure, has been invented.

They had hot weather at times in the good old days. At Bologna, in 1778, the heat was so excessive that many people were stifled, and in 1793 the heat dried up the fruit on the trees.

The oldest fire-engine company in the country is claimed to be located at Mt. Holly, N. J. It is called the Relief fire company, and has had a continuous existence of 147 years.

There are in Arizona 12,000,000 acres of surveyed land and 34,000,000 acres of unsurveyed land still open to settlement.

Nerve Tonic Blood Builder



DR. WILLIAMS' PINK PILLS FOR PALE PEOPLE

Send for descriptive pamphlet.

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We noticed they sold in New York last June at \$6.50 per half crate, and July 5, 1893, Porter Bros. Co., New York, sold them at \$6 per half crate, while other plums were a 1½-gal less than half. Even August 7th, when New York had in one week 72 cars of fruit, 300 cars of De-ware peaches, 100,000 bunches of bananas and 80,000 boxes Sicily oranges, in fact a regular glut, still the Tragedy Prune from late districts waved its flag above all, selling at \$2.25 per half crate. We challenge any one to name a variety of fruit that can show such a record during the financial crash of 1893. It is glorified in our section and we are proud of it. When you buy trees get the GENUINE, which we can furnish at 8 cts. each. SACRAMENTO RIVER NURSERY CO., Walnut Grove, Sacramento, Cal., California.

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Trees two years old, from four to six feet high.

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3 Carnations

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1 Heliotrope

2 Pelargoniums

2 Roses

2 Chrysanthemums

2 Canas

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1 Artillery Plant

3 Single Geraniums

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3 Fuchsias

1 Begonia

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6

1 French Cana

1 Tea Rose

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1 Fuchsia

1 Begonia, Rex

1 Rose Geranium

1 Lemon Verbena

1 White Lily

Selection of varieties in collections must in all cases be left to us. Substitution made if necessary.

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Apricot.....	2000	4 to 6	8 cts.
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Picholine Olive.....	1000	3 to 5	8 cts.
Pomegranate.....	1000	2 to 4	8 cts.

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Miscellaneous.

—San Jose is providing support to its unemployed by placing them at work on the streets.

—A Salinas authority predicts that the Monterey & Fresno railroad will be built in four months if the right of way is secured before the close of this month.

—The schooner Corona, Captain McAllen, is ashore in Useless bay, thirty miles north of Seattle. She is loaded with lumber for San Pedro and, it is believed, will go to pieces.

—While workmen at a limekiln near Gila City, A. T., were prospecting for limestone recently, they found a vein of fine marble, 40 feet wide and equal to the best that Vermont produces.

—The citizens of Oakland and Berkeley will not subscribe \$225,000 to the capital stock of the Oakland Terminal Company (opposition ferry). The whole scheme to raise the money is at an end, and F. M. Smith, who made the proposition to the citizens, has called in all his promises.

—There is a prevailing idea in local shipping circles that marine business is on the mend. Passenger travel on the coast is certainly improving, but that is a result of the Midwinter Fair and the excursion rates offered by the steamship people. Every steamer to arrive, both north and south, is taxed to an extent unknown before in years, and the excess is largely traveling on special round-trip fair tickets. Even the San Blas, from remote ports between Mexico and Panama, came in one morning last week with nearly a hundred passengers—a larger number than any Pacific Mail boat on the southern route has carried for a long time.

—An exhibit of timber from Puget Sound for the Midwinter Fair has arrived from Tacoma on the ship Dashing Wave. There are two of the sticks, which were discharged recently, at Berry street. The largest is a clean stick of Washington pine 117 feet long and 24x24 inches square, and the other is 20x20 inches thick and 105 feet long. Both of the immense timbers are from Harrison's mill at Tacoma, which sent similar exhibits to the World's Fair. The timber which is 117 feet long contains 5,616 feet, board measure, and weighs ten tons. It is the largest piece of timber ever sent here and has not a single knot in it. It will be one of the most interesting single exhibits at the fair.

—According to General Casey, Chief of Engineers, there is still available \$25,000 for the operation of the snag boat between Sacramento and Red Bluff. The snag boat will be ordered between Red Bluff and Redding to make that portion of the river navigable. The California Commission will endeavor to incorporate a clause in the River and Harbor bill to have engineers make a survey of Napa river, between North and South Vallejo. If the commission can induce the River and Harbor Committee to grant an appropriation of \$50,000 for a snag boat between Red Bluff and Sacramento, with the \$25,000 already available, they say the river could be put in excellent condition.

—The Los Angeles Herald learns that Mr. Huntington has decided to go ahead with the work of making Santa Monica a thoroughly protected harbor, whether the Government assists him or not. To this end he has had plans prepared for a breakwater, to be built of rock, extending for half a mile outside the big wharf at that point. These plans were completed a few weeks ago, and outline a fine piece of protective engineering against the power of the sea. An idea of the completeness of the work and its extent can be had from the estimates which accompany the specifications, and which call for an expenditure of \$1,500,000. It was for the execution of this project that the branch line to Chatsworth Park in the San Fernando valley was recently built. At that place is a quarry of stone peculiarly adapted to resist the action of the water, and from here will be carried the huge blocks to be used in constructing the breakwater. As this will extend out for half a mile, a large portion of the big wall will have to be built up for 40 or 50 feet under water.

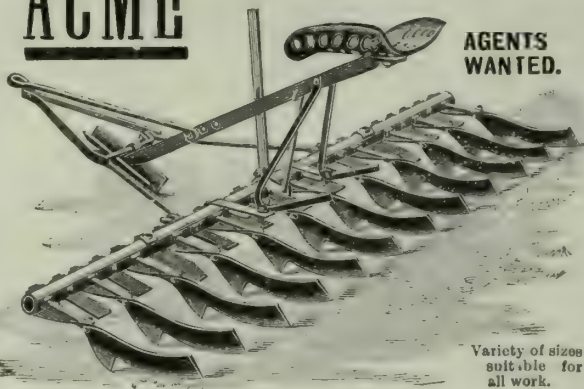
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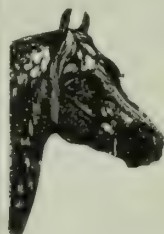
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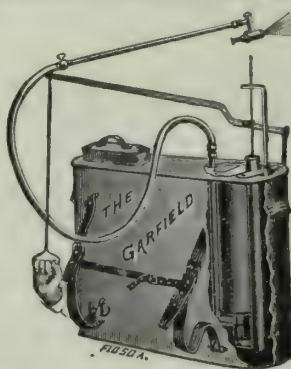
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Capital paid up.....\$1,000,000
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Pumps fitted up for all depths of wells, ready to put in.

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S. F. MARKET REPORT

Market Review.

SAN FRANCISCO, Feb. 20, 1894.

There is no change in the local wheat situation. There is no improvement in prices and very little doing. Nobody pretends to say what the immediate future will be because all are alike in the dark. No. 1 shipping Wheat is quotable at 90c per cwt, with 9 1/4 to 9 3/4 c for a choice article. Milling grades are fairly steady at \$1.05 per cwt.

BARLEY.—Dull and uninteresting with the immediate outlook favorable for buyers. We quote: Feed, 70 to 71 1/2 c for fair to good quality; 7 1/2 to 7 3/4 c for choice bright; brewing, 80 to 90c per cwt.

Dried Fruits.

We quote prices as follows: Apples, 5 1/2 @ 6c per lb for quartered, 5 1/2 @ 6c for sliced, and 8 1/2 @ 9c for evaporated; Pears, 4 @ 8c per lb for bleached halves, and 3 @ 5c for quarters; bleached Peaches, 6 @ 8c; sun-dried peaches, 4 @ 5c; Apricots, Moorpark, 1 1/2 @ 13c; do Royals, 10 @ 11c for bleached and 6 @ 7 1/2 c for sun-dried; Prunes, 4 1/2 c per lb for the four sizes, 4 1/4 @ 4 1/2 c for the five sizes, and 2 1/2 @ 4c for ungraded; Plums, 5 @ 5 1/2 c for pitted and 1 1/2 to 2c for unpitted; Figs, 3 to 4c for pressed and 1 1/2 to 2c for unpressed; White Nectarines, 7 to 8c; Red Nectarines, 6 to 7c per lb.

RAISINS.—We quote prices as follows: London Layers, 75c to \$1.15; loose Muscates, in boxes, 50 @ 85c; clusters, \$1.50 to \$1.75; loose Muscates, in sacks, 2 1/2 to 2 3/4 c per pound for 3 crown, and 2c for 2 crown; Dried Grapes, 3/4 to 1 1/4 c per pound.

General Produce Market.

OATS.—Heavy stocks cause depressed feeling in values. We quote: Milling, \$1.12 1/2 @ 1.20; Super, \$1.20 @ 1.30; fancy feed, \$1.17 1/2 @ 1.20; good to choice, \$1.10 @ 1.15; poor to fair, 90c @ \$1.05; Black, 82 1/2 c @ \$1.20; Gray, \$1.02 1/2 @ 1.12 1/2 c. CORN.—Prices are fairly well sustained. Quotable at 85 @ 87 1/2 c per cwt, for large Yellow, 78 1/2 @ 90c for small Yellow, and 95 @ 96 1/4 c for White.

CRACKED CORN.—Quotable at \$20.50 @ 21.50 per ton. CORNMEAL.—Millers quote feed at \$20 to \$21 per ton; fine kinds for the table, in large and small packages, 2 1/2 @ 3 1/4 c per pound.

OILCAKE MEAL.—Quotable at \$37.50 per ton from the mill. SEEDS.—We quote: Mustard, brown, nominal; Yellow, —; Trieste, —; Canary, imported, \$4 @ 4.25; do, California, —; Hemp, 3 1/2 c per lb; Rape, 1 1/2 @ 2 1/4 c; Timothy, 6 1/2 c per lb; Alfalfa, 7c per lb, for California and 8 @ 8 1/2 c for Utah; Flax, \$2.25 @ 2.50 per cwt.

CHOPPED FEED.—Quotable at \$17.50 @ 18.50 per ton. MIDDINGS.—Quotable at \$17 @ 20 per ton. MILLSTUFFS.—We quote: Rye Flour, 3 1/2 c; Rye Meal, 3c; Graham Flour, 3c; Oatmeal, 4 1/2 c; Oat Groats, 5c; Cracked Wheat, 3 1/2 c; Buckwheat Flour, 5 @ 5 1/2 c; Pearl Barley, 4 @ 4 1/2 c per lb; Normal Nutrient, \$3 per case of 1 dozen cans; Breakfast Delight, \$3.25 per case of 2 dozen packages.

BRAN.—Quotable at \$16 @ 17 per ton. HAY.—Wet weather stops trading. Wire-bound hay sells at \$1 per ton less than rope-bound hay. Following are wholesale city prices for rope-bound hay: Wheat, \$9 1/2 @ 13 1/2; Wheat and Oat, \$9 1/2 @ 12 1/2; Wild Oat, \$9 1/2 @ 11 1/2; Alfalfa, \$8 @ 10; Barley, \$9 @ 10 1/2; Compressed, \$10 @ 12; Stock, \$8 @ 10 per ton.

STRAW.—Quotable at 55 @ 65c per bale. HOPS.—Quotable at 15 @ 18c per lb. RYE.—Quotable at 87 1/2 @ 90c per cwt. BUCKWHEAT.—Quotable at \$1.20 @ \$1.25 per cwt. GROUND BARLEY.—Quotable at \$16.50 @ 17.50 per ton.

POTATOES.—Sales were slow to-day. We quote: New Potatoes, — per lb; Sweets, 65c @ \$1 per cwt; Garnet Chiles, 45 @ 55c; Early Rose, 40 @ 50c; River Burbanks, 30 @ 40c; River Red, 30 @ 35c; Salinas Burbanks, 65 @ 85c; Oregon Burbanks, 60 @ 80c; Oregon Garnet Chiles, 75 @ 85c per cwt.

ONIONS.—Quotable at \$1.25 @ 1.75 per cwt. DRIED PEAS.—We quote: Green, \$1.40 @ 1.50; Blackeye, \$1.60 @ 1.70; Niles, \$1.50 @ 1.75 per cwt. BEANS.—We quote: Bayos, \$1.90 @ 2.00; Butter, \$1.75 @ 1.90 for small and \$1.95 @ 2.00 for large; Pink, \$1.50 @ 1.62 1/2; Red, \$1.75 @ 1.90; Lima, \$1.90 @ 2.10; Pea, \$2.15 @ 2.30; Small White, \$2 @ 2.15; Large White, \$2 @ 2.12 1/2 per cwt.

VEGETABLES.—Supplies light on account of rain. We quote: Asparagus, 10 @ 20c per lb; Mushrooms, 8 @ 10c per lb for common and 15 @ 20c per lb for good to choice; Rhubarb, 7 @ 9c per lb; Green Peas, 6 @ 8c; String Beans, 20 @ 25c per lb; Marrowfat Squash, 15 per ton; Green Peppers, 20 @ 25c per lb; Tomatoes, 75c @ \$1.25 per box; Turnips, 75c per cwt; Beets, 75c per sack; Parsnips, \$1.25 per cwt; Carrots, 40 @ 50c; Cabbage, 50 @ 55c; Garlic, 1 1/2 @ 3c per lb; Cauliflower, 60 @ 70c per dozen; Dry Peppers, 10c per lb; Dry Okra, 15c per lb.

FRESH FRUIT.—We quote: Apples, \$1 @ \$1.25 per box for good to choice, and 35 @ 75c for common to fair; Choice Mountain Apples, \$1.25 @ 1.50 per box. CITRUS FRUIT.—We quote: Fair to choice Navel Oranges, \$1 @ 1.85 per box; Seedlings, 75c @ \$1; Mandarin Oranges, 65 @ 90c per box; Mexican Limes, \$5 @ 6 per box; California Limes, \$1 @ 1.50 per box; Lemons, Sicily, \$4 @ 5; California Lemons, \$1 @ 2 for common and \$2.25 @ 3 for good to choice; Bananas, \$1.50 @ 2.50 per bunch; Hawaiian Pineapples, \$2.50 @ 3; Mexican Pineapples, \$3 @ 4 per dozen.

NUTS.—We quote: Chestnuts, 6 @ 8c per lb; Walnuts, 6 @ 7 1/2 c for hard shell, 8 @ 9c for soft shell and 8 @ 9c for paper shell; Chile Walnuts 8 @ 9c; California Almonds, 10 @ 11c for soft shell, 6 @ 7c for hard shell and 11 1/2 @ 12 1/2 c for paper shell; Peanuts, 3 @ 4c; Hickory Nuts, 5 @ 6c; Filberts, 10 @ 10 1/2 c; Pecans, 5 @ 8c for rough and 8 @ 10c for polished; Brazil Nuts, 10 @ 11c; Coconuts, \$4 @ 5 per 100.

BEESWAX.—Quotable at 22 @ 24c per lb. BUTTER.—There was no positive change this morning in prices, but the tendency of the market is downward. We quote: Fancy Creamery, 28 @ 30c; fancy dairy, 25 @ 27 1/2 c; good to choice, 21 @ 24c;

common grades, 17 @ 20c per lb; store lots, 11 @ 15c; pickled roll, 14 @ 18c; firkin, 14 @ 17c.

CHEESE.—We quote: Choice fancy to new, 12 @ 13c; fair to good, 9 @ 11c; Eastern, ordinary to fine, 11 @ 14c per lb.

EGGS.—The market is still more than comfortably stocked. We quote: California ranch, 17 @ 20c; store lots, 14 @ 16c; Eastern Eggs, cold storage, \$1.50 @ 2.50 per case; Oregon Eggs, 12 to 14c per dozen.

POULTRY.—Business was altogether nominal yesterday, there being no demand. Prices are therefore undisturbed. We quote as follows: Live Turkeys—Gobblers, 9 @ 11c; Hens, 11 @ 12c; dressed Turkeys, 12 @ 14c per lb; Roosters, \$3.50 @ 4 for old and \$4 @ 5.50 for young; Fryers, \$4.50 @ 5; Broilers, \$3.50 @ 4.50; Hens, \$4 @ 5; Ducks, \$3.50 @ 4.50; Geese, \$1.50 @ 1.75 per pair; Pigeons, \$1.75 @ 2 per doz for old and \$2.50 @ 3 for young.

GAME.—Buyers were scarce yesterday and dealers had large stocks on hand at a late hour. We quote: Quail, \$1 per dozen; Canvasbacks, \$2 @ 4; Mallard, \$2.50 @ 3.50; Widgeon, 75c @ \$1; Teal, 1.25 @ \$1.50; Sprig, \$1.25 @ 1.50; Small Ducks, 75c; Gray Geese, \$1.75 @ 2; White Geese, 50c; Brant, \$1 @ 1.25; English Snipe, \$1.75 @ 2 per doz.; Common Snipe, 75c @ \$1 per doz.; Honkers, \$3 @ 3.50; Hare, 75c @ \$1; Rabbits, \$1 @ 1.50 per doz.

PROVISIONS.—We quote as follows: Eastern hams, 12 @ 12 1/2 c per lb; California hams, 11 @ 11 1/2 c; Bacon, Eastern, extra light, 12 1/2 c; medium, 9 1/2 @ 10c; do, light, 10 @ 11c; do, light, boneless, 11 1/2 @ 12c; light, medium, boneless, 11c; Pork, prime mess, \$14 @ 15; do, mess, \$17 @ 18; do, clear, \$19 @ 20; do, family, \$22 @ 23; Pigs Feet, \$11.50 per bbl; Beef, mess, bbls, \$7.50 @ 8; do extra mess, bbls, \$8.50 @ 9; do, family, \$9.50 @ 10; extra do, \$11 @ 11.50 per bbl; do, smoked, 10 @ 10 1/2 c; Eastern lard, tierces, 7 @ 7 1/2 c; do prime steam, 9 1/2 @ 10c; Eastern pure, 10-lb pails, 10 1/2 c; 5-lb pails 10 3/4 c; 3-lb, 10 1/4 c; California, 10-lb tins, 9c; do, 5-lb, 9 1/2 c; do, kegs, 10 @ 10 1/2 c; do, 20-lb buckets, 10c; compound, 7c for tierces.

WOOL.—We quote spring: California, year's fleece, 7 @ 8c; do 6 to 8 months, 7 @ 9c; do Foothill, 10 @ 11c; do Northern, 12 @ 13c; do extra Humboldt and Mendocino, 11 @ 13c; Nevada, choice and light, 12 @ 14c; do heavy, 8 @ 10c; Oregon, Eastern, choice, 10 @ 11c; do Eastern, poor, 7 @ 9c; do Valley, 12 @ 14c. We quote fall: Free Mountain, 6 @ 9c; Northern defective, 5 @ 8c; Southern and San Joaquin, 3 @ 5c.

HIDES AND SKINS.—Quotable as follows:

	Sound.	Culls.
Heavy Steers, 57 lbs up, 1/2 lb.	4 @	4 @
Medium Steers, 48 to 56 lbs.	4 @	3 1/2 @
Light, 42 to 47 lbs.	3 @	2 1/2 @
Cows, over 50 lbs.	3 @	2 1/2 @
Light Cows, 30 to 50 lbs.	3 @	2 1/2 @
Stags.	3 @	2 1/2 @
Kips, 17 to 30 lbs.	4 @	3 @
Veal Skins, 10 to 17 lbs.	5 @	4 @
Calf Skins, 5 to 10 lbs.	7 @	6 @
Dry Hides, usual selection, 7c; Dry Kips, 7c; Calf Skins, do, 7c; Cull Hides, Kip and Calf, 4c; Pelts, Shearling, 10 @ 20c each; do, short, 25 @ 35c each; do, medium, 40 @ 50c each; do, long wool, 50 @ 75c each; Deer Skins, summer, 25c; do, good medium, 15 @ 20c; do, winter, 5c per lb; Goat Skins, 25 @ 40c apiece for prime to perfect, 10 @ 20c for damaged, and 5 @ 10c each for Kids.		

TALLOW.—We quote: Refined, 5 1/2 c; rendered, 4 1/2 @ 4 3/4 c; country Tallow, 4 @ 4 1/4 c; Grease, 3 @ 3 1/2 c per lb.

San Francisco Meat Market.

Following are the rates for whole carcasses from slaughterers to dealers:

BEEF—First quality, 5 1/2 @ 6c; second quality, 4 1/2 @ 5c; third quality, 3 1/2 @ 4c per lb.

CALVES.—Quotable at 4 @ 5c for large, and 6 @ 7c per lb for small.

MUTTON.—Quotable at 7 @ 8c per lb.

LAMB.—Yearlings, 8 @ 9c per lb.

PORK.—Live Hogs, on foot, grain fed, heavy and medium, 5c; small Hogs, 5 1/2 @ 5 3/4 c; stock Hogs, 4 1/2 @ 4 3/4 c; dressed Hogs, 7 @ 7 1/2 c per lb.

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One of the largest mortgages ever drawn in this city was submitted to the officers of the Union Trust Company Tuesday and received their approval. It is for the sum of \$10,000,000 and is given by the Market Street Railway Company upon all the property owned by the latter in this city. A few days ago the stockholders of the Market Street Railway Company voted to issue over \$17,000,000 in bonds. These are what are technically known as mortgage bonds, and in order to place them upon the market successfully it is necessary that some large financial concern should assume the responsibility for the payment of both principal and interest. The Union Trust Company by this action becomes a trustee, and will place the bonds of the street railway company upon the market.

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common grades, 17 @ 20c per lb; store lots, 11 @ 15c; pickled roll, 14 @ 18c; firkin, 14 @ 17c.

CHEESE.—We quote: Choice fancy to new, 12 @ 13c; fair to good, 9 @ 11c; Eastern, ordinary to fine, 11 @ 14c per lb.

EGGS.—The market is still more than comfortably stocked. We quote: California ranch, 17 @ 20c; store lots, 14 @ 16c; Eastern Eggs, cold storage, \$1.50 @ 2.50 per case; Oregon Eggs, 12 to 14c per dozen.

POULTRY.—Business was altogether nominal yesterday, there being no demand. Prices are therefore undisturbed. We quote as follows: Live Turkeys—Gobblers, 9 @ 11c; Hens, 11 @ 12c; dressed Turkeys, 12 @ 14c per lb; Roosters, \$3.50 @ 4 for old and \$4 @ 5.50 for young; Fryers, \$4.50 @ 5; Broilers, \$3.50 @ 4.50; Hens, \$4 @ 5; Ducks, \$3.50 @ 4.50; Geese, \$1.50 @ 1.75 per pair; Pigeons, \$1.75 @ 2 per doz for old and \$2.50 @ 3 for young.

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Electricity in 1900.

The editors of four of the leading authorities, in response to an invitation to give their ideas on the probable development of electricity and its application, promise some wonderful changes before the dawn of the next century. The editor of the *Electrical World* says: "We can expect no great improvement in dynamos and motors, as they now return in electricity as high as 97 per cent of the energy supplied to them. The arc lamp is practically perfect electrically, and, while notable improvements may be made in the present form of the incandescent lamp, nothing startling can be expected. Electric railway traction will undoubtedly supersede all other methods for urban use, and by the extension of networks in the country, promises to largely revolutionize rural life; its application, however, to long trunk lines seems improbable. The electrical transmission of power will receive enormous extensions and probably entirely take the place of steam power within a radius of several hundred miles of water powers and in the vicinity of coal fields, whence the energy of coal will be distributed by means of the electric current instead of the coal itself being transported. The electric light will probably entirely supersede all other kinds of illumination in cities, towns and thickly settled rural districts, and electric motors will gradually enter into all operations requiring power, and more and more narrow the field of the steam engine, if, with the gas engine as an ally, it does not drive it out entirely. Telephoning across the Atlantic is a probability, and seeing by electricity a possibility."

The editor of the *Electrical Review* also believes in the sure advent of the transatlantic telephone, the further development of the transmission of electric power, and especially an elaboration of the domestic use of electricity. On this last point he says: "Electric heating is now an important element in the rapidly extending railway business, replacing the disagreeable and dangerous car stove, and is advancing into the domain of the coal furnace and gas range, bringing cleanliness, convenience and economy with it. When fully perfected and understood, the electric heater will be one of the greatest boons that the electrical engineer has given us. Every housewife will rise up and call him blessed, and every husband will bless him and not rise up! He can lie abed and increase or originate heat in room and kitchen by simply turning a switch or pressing a button. Even this effort may be dispensed with, and a clockwork attachment press the button automatically."

The editor of the *Electrical Age* coincides with this prophetic view of the household run by electricity. This is his view of what we will have by the year 1900: "I expect to see our homes, offices, stores, etc., heated by electricity. This system of heating is entirely practicable, the only question involved being the all-important one, cost. It probably will be made popular by supplying electricity from large central stations through street mains, connecting the premises therewith. Electricity may then be used for cooking and doing what mechanical work may be necessary about the house, store or factory. It can be made to perform all of these duties by simply turning a little handle or pushing a button. Electricity will be used to accomplish a thousand and one different things to save us labor, and in directions little dreamed of at present. New things and applications are being constantly developed; it only needs more popular familiarity with them to find a wider use for them."

The editor of *Electric Power* joins all these and goes even further. Among the items of his prophetic vision are some bits of domestic beatitude like the following:

"In 1900 we shall probably have brought down the cost of current and of utensils to such a degree as to allow even people in moderate circumstances to use the cleanly current instead of the coal or gas stove. Then will the millennium of the servant girl have broken into dawn. The overhead or trolley system will very probably be superseded by a system not more obtrusive than the cable on Broadway—a conduit system. The cars running underground will be propelled by electricity."

"In six years we can look for the supersession of the incandescent lamp as it is at present by a new lamp evolved along the lines sketched out by Nikola Tesla, whose brilliant discoveries have recently been fully enumerated by our esteemed confrere, Mr. T. Commerford Martin. The new lamp will probably be without filament, but will glow by the luster of a high-frequency current properly employed. There is even a

possibility of the present bulb-shaped lamp disappearing, giving way to a long, continuous tube of glass hidden away behind crevices and casting a soft light upon the ceiling and thence down upon the floor. The disinfection of the city will probably be effected by the agency of electricity. The canal-boats will come down to the wharves propelled by electricity. The streets will perhaps be cleaned by an electrically driven brush, and a mighty exhaust fan in city hall, driven by a motor, may serve to purify it."

The Heat from the Sun.

Those who have paid attention to this subject are aware that the remarkable doctrine first propounded by Helmholtz removed all real doubt from the matter. It is to this eminent philosopher we owe an explanation of what at first seemed to be a paradox. He explained how, notwithstanding that the sun radiates its heat so profusely, no indications of the inevitable decline of heat can be as yet discovered, says the *Fortnightly Review*.

If the sun had been made of solid coal from center to surface, and if that coal had been burned for the purpose of sustaining the radiation, it can be demonstrated that a few thousand years of solar expenditure at the present rate would suffice to exhaust all the heat which the combustion of that great sphere of fuel could generate. We know, however, that the sun has been radiating heat, not alone for thousands of years, but for millions of years. The existence of fossil plants and animals would alone suffice to demonstrate this fact.

We have thus to account for the extremely remarkable circumstance that our great luminary has radiated forth already 1000 times as much heat as could be generated by the combustion of a sphere of coal as big as the sun is at present, and yet, notwithstanding this expenditure in the past, physics declare that for millions of years to come the sun may continue to dispense light and heat to its attendant worlds with the same abundant prodigality. To have shown how the apparent paradox could be removed is one of the most notable achievements of the great German philosopher.

What Helmholtz did was to refer to the obvious fact that the expenditure of heat by radiation must necessarily lead to shrinkage of the solar volume. This shrinkage has the effect of abstracting from a store of potential energy in the sun and transforming what it takes into the active form of heat. The transformation advances pari-passu with the radiation, so that the loss of heat arising from the radiation is restored by the newly produced heat derived from the latent reservoir.

Such is an outline of the now famous doctrine universally accepted among the physicists. It fulfills the conditions of the problem, and when treated by arithmetical calculation it is not found wanting.

Nature's Models.

When a man competes with Nature in engineering problems he is left far in the rear, says the *Engineer*. This is particularly the case in the appliance of power for speed. The wild duck is about the last bird we should expect speed from; it has enormous surface, is very heavy forward, and has a comparatively long neck and a heavy head, with all it has very small wings, but a wild duck is one of the swiftest birds in flight, surpassed only by the wild goose, which is even more heavily handicapped. The whale is a lumberly craft—so to call it—modeled on the lines of a Dutch galliot. Its propellers are exactly the reverse of what we should suppose the correct position, lying horizontally on the water when at rest, instead of being vertical in it, as a vessel's propellers are. Moreover, the flukes of the whale's screw are very small indeed, and are also the reverse of what man makes. They have the least surface at the tip and are largest at the hub—or junction of the body—but a whale goes through the water with this apparatus like a fast steamboat, and can tow a heavy whaleboat full of men at a most surprising velocity for a long time. These instances prove our contention—that we have a good deal to learn yet in the application of power to bodies moving through fluids, either of air or water.

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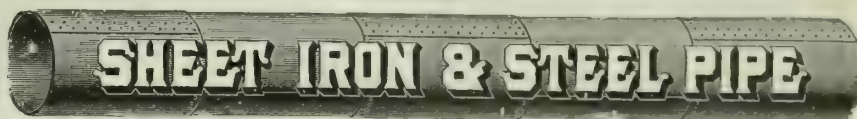
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Wonderful Canal System of France.

An official document shows that the length of navigable waterways in France is some 8000 miles, of which 650 are returned as tidal, 2100 miles navigable without works, 2250 miles canalized rivers, and 3000 miles of canals, and of this vast network of interior navigation, the government has all but seven per cent in charge, the system having been brought to its present condition at a cost of \$300,000,000 for construction and purchase, and \$25,000,000 for concessions, with an annual cost, also, of \$325 per mile, average, for maintenance. The number of vessels employed on the waterways is about 16,000, and of these 26 per cent have a capacity of 300 tons or more, while more than half of them have a capacity exceeding 100 tons; the number of foreign boats also using the French canals yearly is said to exceed 2000. The motive power is now almost entirely furnished by draught animals, though a few steam tugs are used on the Seine, the Oise and some other rivers, and steam cargo boats are occasionally met. Cable towing and tow locomotives are resorted to a limited extent.

Now, the basest thought possible concerning man is that he has no spiritual nature; and the foolishness of misunderstanding of him possible that he has, or should have, no animal nature. For his nature is nobly animal, nobly spiritual—coherently and irrevocably so; neither part of it may, but at its peril, expel, despise or defy the other.—Ruskin.

Liquid fuel, in the form of petroleum refuse, has been tried with such success by the German naval authorities on a small scale that Signor Cuniberti of the Italian navy, has been invited to visit Germany and conduct further experiments.

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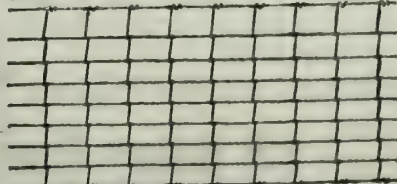
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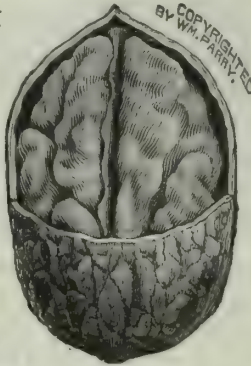
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Vol. XLVII. No. 9.

SAN FRANCISCO, SATURDAY, MARCH 3, 1894.

TWENTY-FOURTH YEAR.
Office, 220 Market Street.

San Joaquin's Share in the Fair.

The county buildings comprise some of the most unique and attractive features of the Midwinter Fair outfit, and the county exhibits are the backbone of its industrial display so far as natural resources are concerned. Without these factors the Midwinter Fair would fall far short of its present standing as an exponent of California progress and achievement. Due credit should therefore be given to county enterprise and to the individual efforts which made the aggregate possible.

We give on this page a view of one of the most notable

contemplation. Its cupola also affords a good lookout over the fair site which is much enjoyed. The building was put through in an almost incredibly short time, and speaks well for the energy and sagacity of Mr. P. A. Buell of Stockton, to whom the management of the whole enterprise was entrusted.

IT SEEMS that it will require more time to develop a general county organization for fruit handling in Placer county. The announcement is made that in view of the fact that several of the already existing local co-operative companies had entered into obligations with fruit-growers

Orange Marketing.

As was anticipated, the injury to the orange crop at the south by the frost has shown itself to have been small when the abundance of the sound fruit is considered. There is now a large amount of splendid fruit going forward. Up to the close of last week the shipments reached about 500 carloads from three points—Riverside, Arlington and Casa Blanca—and this is thought to be about one-fourth of the crop of that section. It is reported that of the shipments thus far made, the commission merchants have handled about one-quarter, the balance being sent



THE SAN JOAQUIN COUNTY BUILDING AT THE MIDWINTER FAIR.

of the county structures, that of San Joaquin county. San Joaquin has a good record for enterprise in industrial displays. Its earlier work under grange auspices won many tokens of excellence, and well and widely advertised the county as a good field for industrial effort. Naturally, the Midwinter display is the greatest of all its achievements in this line, and one which shows best its various means of wealth creating, for it bespeaks in its entirety the enterprise and generosity of the people, and in its materials displays the achievements of the manufacturing interests of a thriving city as well as the productions of rich fields, orchards and gardens. One can hardly contemplate the exhibitions made at the fair without feeling the conviction that some of our counties are fitted to rank as States or empires upon the basis of natural and developed wealth and successful industry.

The engraving shows so well the style of the San Joaquin building that little description is necessary. It is of commanding dimensions and fitting style. Its interior is excellently adapted for the purposes in view, and affords not only opportunity to display but opportunity to see and to obtain both near and distant views, and to rest during

by advances of money, purchase of materials and investment of capital in shares, which would make it difficult for the owners of such companies to go into a new organization, however desirable for the general good, it was deemed expedient to investigate those interests and consider the possibilities of combining them in a general consolidation which would accomplish the great objects of the union. A special committee was appointed to report upon this meeting will be held March 10th. It would seem likely that after all these local organizations should be the units and then they can perhaps act as well through the State Exchange as through a county organization. But time will show the best way. It is just as well to proceed slowly and circumspectly. The result will be more likely to be right and durable.

A SANTA CLARA BREEDERS' ASSOCIATION has been formed at San Jose with the following directors: William Boots, James W. Rea, Naglee Burke and Philo Hersey. B. D. Murphy was elected president of the association. The other officers elected were: Harry Edwards, vice-pres.; S. G. Benson, sec'y, and A. Greeniger, treas.

forward by the growers' organization. The growers are having a little experience this year which is of wide significance. Of course if our associated or co-operative fruit-selling organizations are to have any force or efficiency, they must have the power to hold recalcitrant members to their agreements. That men are disposed to escape from such obligations if they can, whenever it seems to their present interest to do so, is a matter of common remark. Now that we are undertaking more than ever before in the co-operative method of doing business, it is important that members should be held to their obligations. A court decision has just been rendered which will have a good effect in this direction. The Ontario Fruit Exchange was compelled to bring an injunction suit against J. S. Garcia, a member of the exchange, enjoining him from selling oranges to the Earl Fruit Company. The suit was settled on Monday. Garcia turned over his fruit to the exchange and paid the costs. This is regarded as an important victory for the exchange, being an acceptance of the validity and binding force of the contracts made by the various exchanges in the association.

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ALFRED HOLMAN.....Editor
J. F. HALLORAN.....General Manager
E. J. WICKSON.....Special Contributor

San Francisco, March 3, 1894.

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The Week.

March comes in gently. Several days of bright sun and drying soil have brought many fields into arable shape, and much work has been done where late sowing is a safe business. Growth is still backward; in fact, the present promise is that we shall have a late season unless the thermometer shall make up for lost time. It is seldom that early-blooming trees and plants are held back until March.

What the outlook is for the month of March is shown by a report just issued by the Weather Bureau, which shows that in San Francisco the mean March temperature is 54°; the highest in 23 years was 80°, and the lowest in the same period 38°. If we get the average March rainfall, it will be 3.24 inches; but we may get 8.78, as in 1879, or 0.79 as in 1873. The usual wind is from the west.

We have, then, quite a variety of March weather to choose from. If we get the average rain and the mean temperature we shall do well enough, for that answers fully for growth, and gives a delightful month, which clothes nature with bloom and covers the cultivated field with abundant crops.

It is said that the ordinary westward winter travel is about over, but the arrivals have been nothing like Mid-winter Fair forecasts counted upon. There is still a chance for a great spring movement to California. The two great overland railways are in conflict and already overland fares have been cut in two. Greater dissection is expected. There may not be for years another such chance for a look at California as is now afforded, and this will bring an inrush which may enliven things considerably. And the railroads, it is said, make most when they charge least. It is unfortunate that they can never see this except when they get blood in their eyes.

THE fire demon continues his destructive work on the World's Fair grounds at Chicago. On Saturday of last week the magnificent Agricultural building, pronounced by many good judges the most sumptuous and beautiful of the World's Fair structures, was reduced to a heap of ruins. It was with difficulty that the adjacent structures were saved. The incendiaries seem to elude the police every time.

Tree Leaves as Fodder.

We hope we shall never be obliged to send our live stock up a tree to pasture, nor to breed them with prehensile necks, like camelpards, so that they can feed from trees without climbing, nor that we shall be forced to climb the trees to throw down leaves for them. The whole proposition to feed live stock on leaf fodder has a poverty cast to it, which we hope California farming will never be forced to assume.

And yet the use of tree leaves for fodder is a feature of the world's farming and has always been and just now seems to be undergoing a revival—a sort of pastoral renaissance, if you please. It comes from the exceptional experience of European countries during 1893, when there was a drouth on the continent, to the like of which the mind of man does not caper. They did not get anything like Major Powell's requirement of rainfall for a crop and so they lost their crops, and not only that, they were hardly put to to gather up enough green stuff to keep their farm animals alive. This serious state of affairs was probably due in great part that they do not know how to farm with short fall, and their pasture plants were shallow rooted, to keep out of the customary wet, and when there came a dry year their famous, time-honored pastures were baked dry. Under such conditions, they took to the trees and saved their live stock thereby.

The result of all this is that European correspondents and reports are laden with the outcome of investigation of tree leaves as stock food, which is of much interest even if we never have to keep our stock that way. Our consul at Chemnitz, Mr. Monaghan, sends to the State Department an item giving French experience. The French recommend exclusively the leaves of the hazel, aspen (trembling poplar), ash, elm and willow. The yield of the leaves of these trees to a 100 parts is:

Kind.	Protein.	Extracts.	Wood Pulp.	Ashes.
Aspen.....	4	26.7	7.3	2
Ash.....	4.4	23.3	5.5	3.8
Elm.....	4.7	24.6	7.6	3.1
Willow.....	4.9	25	7.4	2.7
Hazel.....	5.3	26.3	5.8	2.1

According to the descriptions of practice given by Mr. Monaghan, the leaves, after being gathered, are spread on the barn floor to the depth of 3 to 4 inches, and are turned once a day. They dry in from 3 to 5 days, according to the weather. When dry they are piled up ready for use. It is profitable, before serving, to prepare each day's supply 24 hours beforehand. There is mixed with the leaves to be served each day a small amount of chopped-up turnips, leaving the whole to ferment. Just before feeding, clover hay or lucerne is added. This food has been found especially good for milch cows.

Young shoots and branches of trees with their new leaves are picked off every five years and fed to sheep. These animals are very fond of the aspen because of its resinous and sweet buds. Willow leaves and bark mixed with oats are regarded as a very pleasant, nutritious and strengthening food for horses.

It is not good to feed the leaves green; in fact, the cattle prefer them dried. Again, they should be served only with other fodder. The bitter and astringent juices, even in the dry leaves, unfit them for wholly taking the place of hay or other foods; they are a good auxiliary, especially at a time when other foods are dear. When the leaves are young they contain a large quantity of nitrogen. As the season advances this grows less, as do also their nourishing properties. When to begin to harvest the leaves is therefore an important point. Farmers who have experimented say that, in Europe, in July and August, when the leaves are full grown, is the best time.

Of the trees mentioned above as approved by the French we have several native species well distributed over the State, so that we can take to the woods if famine comes, and know beforehand how much protein and starch to expect from each tree we encounter. There is another interesting phase to the matter, and that is that an ornamental shrub or small tree which has been quite largely distributed in this State has secured high stand in Europe as a fodder tree, and is richer in nitrogenous or strength-giving matters than those already mentioned. It is the "strawberry tree" or Spanish madrone, *Arbutus unedo*, which is growing and fruiting freely in the University gardens in Berkeley.

We read in a London journal that there was recently sent to the French Minister of Agriculture, from the farm of Mons. Lang, in the island of Corsica, some leaves of the strawberry tree, and meal which had been made from them. Mons. Lang had for some time observed that horses and cattle, when being driven, would stop often to seize a few dried leaves of the strawberry tree. They did not taste the green leaf, evidently on account of its bitter taste. In Corsica, this discovery was looked upon with great pleasure, as forage is very rare there, while the strawberry tree exists in abundance, and will yield on an

average about 16 cwt. of dried leaves per acre. During the past year a ration of this feeding substance mixed with the thick leaves of the cactus was given to cattle, which contains 95 per cent of water. Varying it with 4½ pounds of cake and watering with a little salted water, it sharpened the appetite of the animals. Horses, after the second day, prefer the leaves of the strawberry tree even to ordinary hay. The leaves should be gathered dry, cutting with the sickle the extremities of the branches; but if they are cut green they should be dried in the sun, when they will lose about 60 per cent. According to MM. Grandeau and Boussingault, the composition of the strawberry tree leaf compared with hay is as follows:

	Leaves.	Hay.
Water.....	10.20	18.00
Nitrogenous matters.....	6.87	7.20
Starchy matters.....	62.87	44.20
Fatty matters.....	3.70	3.80
Mineral matters.....	3.74	7.60
Fibrous matters.....	12.60	24.20
Totals.....	100.00	100.00

Thus the records show the possession of fodder resources which in its fullness even hoary old Europe has but just discovered. They must have always been aware, as we have been, of the browsing of stock on low shrubs, but the feeding of stock on regularly gathered crops of tree fodder seems to be new. And what a sensation it must be to discover a new resource in Europe! It immediately adds another story to their pasture fields, for while there are good years when the grass will grow on the ground and the trees will store nutriment in their trunks and branches, there will come dry years when the ground will be bare and the diligent farmer will set his mower to a higher cut and gather in the tree tops. Surely this is not so bad a world after all, when we come to understand it.

We print on another page the plan upon which the raisin producers of the San Joaquin valley propose to proceed with the marketing of their product. Not only was a plan decided upon but a body of 11 directors was chosen to carry out the plan. It is widely significant that a committee having in hand such a vexed question, involving so many interests and the harmonizing of so many plans, should propose a scheme of organization which could be adopted without material modification by a representative body which had full opportunity for discussion and action. Certainly the committee must have worked well and wisely. It is also significant that the full directorate proposed by the same committee should have been chosen with but a single voice raised against a single man. It seems to us such determined and harmonious action must augur well for the success of the enterprise which means so much to one of our greatest producing interests. The general opinion is that better days for the raisin men are now at hand. The people have confidence in the present plan.

It is gratifying to note that the new movement is proceeding briskly. On Tuesday of this week the new board of directors met and prepared articles of incorporation. A committee of five of the directors was appointed to go to Hanford, Tulare county, and address a convention of raisin-growers there. Meetings will be held at once through the five counties and the enthusiasm felt for the association will be given full opportunity to take form in practical subscription to the stock. The whole affair has a very promising look.

How shall we reconcile the conflicting statements that the price to farmers for sugar beets should be reduced in view of the loss of the bounty and the other statement that arrangements have been completed for the enlargement of the Chino beet-sugar factory and the addition of new machinery? It is said that the capacity will be increased to about a thousand tons of beets per day. Nearly 10,000 acres will be planted to beets this season, 3000 at Anaheim and the balance at Chino and vicinity. The output of sugar last season was 7550 tons. This will be increased to over 10,000 tons the coming season. It would seem that if the business is good enough even with the loss of the bounty to warrant free investment of capital in enlarging factories, it should also be good enough to pay beet-growers profitable prices. We hope there is really no conflict in the matter, and that the beet-sugar business will live long and prosper in spite of hardships which we were so recently told would end it.

A CONTEMPORANEOUS writer says if there be anything on earth more voracious than the *vedalia cardinalis*, the enemy of the cottony cushion scale, it is yet to be discovered. From the cradle to the grave it does nothing but eat, and when the board is cleared of the scale, it turns in and eats its own relatives, until at last there is left but one big fat *vedalia*, with the concentrated blood in his veins of billions of insect victims. And to this we would add that there seems reason to hope that the new devourer of the lecanium scales will be as good in appetite and multiplication. Early reports from some of the colonies sent out from Ellwood Cooper's place last summer indicate this desired result. Let it come in its fullness.

From an Independent Standpoint.

There are many reasons for believing that there will be a considerable immigration into California during the current year. Hitherto such movements have invariably followed periods of hard times even in the face of high railroad rates and of boomed land prices; and it is believed now, when to our standing attractions are added the special inducements of cut rates and reduced land prices, that there will be something like a rush for the coast. We are at the beginning of what railroad men believe will be a long fight in the matter of passenger rates. The Southern Pacific and the Santa Fe are "bucking" each other with the present result of a twenty-dollar rate from the Missouri river to California terminals and with the possibility of even a lower rate in the near future. And this era of low fares conjoins very happily for the immigrant with the era of low prices for fruit and farm lands. The prevailing spell of bad financial weather has had the effect of squeezing the water out of land values, so that it is now possible to buy for anywhere from \$50 to \$300 per acre lands which up to a year ago were held at from \$200 to \$500 per acre. There has, perhaps, been no worse foe to the true interests of California than the exaggerated values put upon land during the past ten years. It has been, as everybody knows, almost impossible for a newcomer to get a home of his own without paying all that he could reasonably hope to get out of the land by half a lifetime of labor; and this fact has held back thousands upon thousands who would otherwise have come here and joined the productive forces of the State. The State of Washington and other new regions have been filled up largely by people frightened away from California by the cry of dear land. The vice of speculation has been the lion in the path and the chief sinners have been rich schemers who have engrossed large tracts in the hope of multiplying their fortunes at the expense of the tenderfoot. There is now a disposition to let go on more reasonable terms. In Kern, Merced, Tehama and Butte counties there are large offerings upon really liberal terms; and similar offerings are being made on a smaller scale in many other places. If this condition shall survive the times which have brought it about, the effect upon California's fortunes will be of the highest importance. Above all other needs, California needs population, and now is the time to get it.

For two weeks or more the House of Representatives has been in the throes of a deadlock very similar to that which prevailed in the Senate last summer. The majority want to enact a specific measure which has been fully debated, and they have the numbers to do it if the House could be brought to a formal ballot; but the resisting minority persists in breaking the quorum by refusing to respond when their names are called. In a situation precisely like this some years ago, when the Republicans were in the majority and while Reed was Speaker of the House, a set of rules was adopted by which all members present—and the sergeant-at-arms saw to it that a sufficient number were present—were counted for the purpose of reckoning a quorum whether they answered to their names or remained silent. The theory asserted in defense of this proceeding was that Congress was commissioned to transact business under the principle of majority rule and that obstructive tactics were opposed to the whole spirit of Congressional obligation and therefore properly subject to corrective discipline. The Democratic minority, on the other hand, contended that Congress was a deliberative body; that its members must in the nature of things be allowed to determine when they were or were not ready to vote on any proposition, and that no power voted in the majority to compel the minority members to vote or to be counted as voting against their will. But the Republicans were heavily in the majority, and they had their way in spite of the protests and maledictions of the Democrats. In the political criticism of the time, and in the campaigns which followed, the Reed rules were roundly condemned by the Democratic party, and, we think, by the public generally, as being in violation of the spirit of our institutions. In the present situation the Republicans are seeking to make the Democrats adopt the Reed rules and thus stultify themselves. They say, practically, you shall do no business until you adopt rules which will suppress the minority. Their idea is, apparently, to justify their own use of the Reed rules and to establish them as an accepted and permanent principle in Congressional practice.

All this is very wrong and very provoking, but the duty of the Democratic majority seems clear and we are glad to see that they show no sign of weakness in its support. They were right in protesting against the Reed rules, and are right now in refusing to employ for their own advantage the principle involved in them. When the powers involved in such rules are given to a majority, the minority

is practically eliminated and might as well go home. Under such rules Congress becomes a mere vehicle for registering and enforcing the will of the majority. Of course, under the old system there will be frequent deadlocks, but their evils are small when compared with those which must follow destruction of the deliberative character of Congress. The public soon comes to understand a deadlock and to put the blame where it belongs; and while delays are annoying and expensive they do nothing or at least say little in the way of ultimate harm. The Democratic majority in this instance is contending for a correct principle, and we trust that no persistence in the tactics of irritation and delay now being employed against them by Reed and his associates will cause them to falter in its support.

The progress of events in the world of commerce and finance is tending powerfully to promote the cause of international bimetallism. The recent successive steps in the decline of silver bullion have been so accurately reflected in successive declinations in the values of miscellaneous commercial commodities that the most hide-bound monometalists have been compelled to pause and consider. The persistent analogy between the current prices of silver and wheat are frankly accepted as highly significant; and, excepting in banking circles (where skill in the game of finance is strongly contrasted with ignorance of financial principles) it is no longer pooh-hoed as a myth or as merely an idle coincidence.

While the United States is suffering seriously through the destruction of values in silver, wheat, wool, stocks of every kind, manufactured goods and miscellaneous commodities, and in the stagnation of business following the wholesale destruction, the distinctively silver countries are suffering more seriously still. Last week the Central American State of Guatemala defaulted—in the lingo of the street, "went broke"—and all the other silver countries excepting Mexico, which seems in fairly good condition, are just staggering along from month to month. In India, where the decline in values during the past eight months has followed the decline in silver from par to forty-seven per cent discount, the business situation is said to be something appalling, to be, in fact, scarcely better than universal bankruptcy. Of course the great financial strongholds feel this severely, which accounts for the following in the London *Financial News* of last Saturday:

Guatemala to-day, other silver countries to-morrow. Default with most of them is only a question of time. The world's commerce is reeling to a crisis, yet the mischief from the appreciation of gold has only begun. Bimetallism in England is gaining many converts. It is understood Lidderdale, ex-Governor of the Bank of England, is a strong advocate of the international agreement for a joint standard. Bimetallism is no longer the creed of a handful of cranks. Nearly every economist of eminence is on its side. The international conference must be reopened. France, Germany and the United States are anxious that this should be done. Surely our interests are as great as theirs. If, in our pride as the gold mart of the world, we stand aside, punishment will fall upon our heads. It depends upon the British Cabinet whether the conference be fruitless or not.

The *News* is right in its assertion that the solution of the matter rests with the British Cabinet. America stands for bimetallism, France stands for bimetallism, Germany (so it is reported) will stand for bimetallism. England alone stands out in a dogged spirit characteristic of her statesmanship. She will, in the end, have to yield, and the sooner the better it will be for the world.

Leading Events of the Week.—Ex-President Harrison is en route to California, under engagement to deliver a series of lectures on law subjects at Stanford University. He is expected to arrive on Saturday of this week. Galusha Grow (Republican) has just been elected member of Congress at large from Pennsylvania by a plurality of 185,000, the largest ever given in the State. In 1892 the average Republican plurality was about 60,000. The issue between Grow and his Democratic opponent was the tariff, and the advocates of protection are making much over the victory. Prendergast, the crank who assassinated Mayor Harrison of Chicago, has been sentenced to be hanged. The officers and crew of the U. S. warship "Kearsarge," recently wrecked in the Gulf of Mexico, have arrived at New York. There are slight hopes of getting the vessel off the reef. Erastus Wyman, the widely-known New York financier, has been arrested on a charge of forgery. Chris Evans was committed to Folsom prison on the 21st, to serve a life sentence. He was at once put to work and will hereafter not be allowed to receive visitors or to communicate with outsiders, excepting his attorney and members of his family at proper times. A severe wind and sandstorm visited Los Angeles county on the 22d, doing some damage to the orange crop. Letters from Honolulu report that steps are being taken by the Provisional Government to form a republic. The Senate Committee of Foreign Affairs, which has been investigating the Hawaiian revolution, exonerates Minister Stevens from the charge of connivance in the revolution. A rate war is on between the Santa Fe and Southern Pacific lines,

and fare between the Missouri river and California points has been put down to \$20. Martin Sachs, the well-known millionaire, died on the 25th, at his vineyard near St. Helena. John Y. McKane, a political boss of Gravesend, N. Y., has been sentenced to the penitentiary for ten years for tampering with election returns. Chairman Wilson, who went to Mexico for rest immediately after his bill passed the House, is very low with typhoid fever. At Ithica (N. Y.), Cornell College students of the sophomore class, for sport interjected poisonous gas into a room where the freshman class was dining, the effect being fatal to a waiter. Some of the sophomores have been arrested. The tariff bill has not yet been reported back to the Senate by the committee in whose hands it was given when it first came from the House. While thus nominally before the committee, it is, in fact, before the Democratic caucus which is trying to reduce it to a shape in which all the Democratic Senators will vote for it. In this way, they hope to avoid extended debate. There are rumors, apparently authentic, that Mr. Gladstone is about to resign the premiership. He is soon to undergo an operation upon one of his eyes, which will require that he remain six weeks in a darkened chamber. It is the general opinion that Earl Spencer will succeed to the premiership. Mr. Gladstone, it is said, will not, in resigning the supreme post, abandon public life, but will retain his seat in Parliament and remain a member of the cabinet.

Mr. Coulter on the Status and Duty of a Congressman.

SANTA ROSA, Feb. 17, 1894.

TO THE EDITOR:—I have no disposition to take back any of the commendations of your paper, which I have lost no opportunity to express; but I do desire to controvert the idea set forth in the article in your issue of the 17th inst. ("From an Independent Standpoint") on page 123, approving the action of Mr. Geary on the Wilson bill. From the tenor of that article it appears that its author regards a member of Congress as a delegate to whom the people have committed the privilege of thinking, speaking and acting for them in accordance with his judgment and wishes.

I have learned to consider a member of Congress as a servant of the people, selected to execute their wishes, as expressed in the platform upon which he is made the candidate of the political party to which he professes to be attached. The platform on which Mr. Geary became the candidate of the democracy of his district was denounced by the opposing party as a free-trade platform, and it did express the tariff reform ideas embodied in the Wilson bill.

Mr. Geary's nomination was on account of his professed devotion to the principles laid down in that platform and his ability as an expounder of them. It was owing to that professed devotion and that ability that he received so large a majority of the votes in his district. He had for his opponent a very estimable gentleman running on a "protection" platform and very ably expounding the protective policy. He was beaten because his platform and his ideas of political economy were not in accord with the views of the electors of his district.

Suppose Mr. Davis had been elected, and had arrived at the conclusion that the enactment of the Wilson bill would be promotive of the best interests of our whole country, and especially of his immediate constituents; and, on the floor of Congress, had advocated it, and, on its final passage, voted for it, is it not likely that journals of the party that elected him would be found intemperate enough to call in question his fidelity? And would not the *PACIFIC RURAL PRESS* "From an Independent Standpoint" indulge in some mild and gentle animadversions on his defection?

I have not understood Mr. Wilson to be a party leader, whom it is anybody's duty to follow, but, as chairman of the House Committee on Ways and Means, as the mere instrument by which the party formulated the bill, by the enactment of which it proposes that members of Congress should redeem the pledges upon which the people reposed confidence in them.

S. T. COULTER.

The Raisin Men Approve a Plan of Organization.

Details of the Arrangement.

A large and representative gathering of raisin-producers of Fresno, Tulare, Kings and Madera counties was held in Fresno on February 24th, with D. T. Fowler as chairman and W. W. Phillips as secretary. There was free and full discussion, resulting in the adoption of a plan which the committee, consisting of D. T. Fowler, Alexander Gordon, Dr. Eshelman, Carrol Ghent, Frank Rowell, B. F. Hutchinson and J. S. Dore, worked over for five and one-half days.

The following is the plan as finally adopted by the committee:

1. This committee recommends that the raisin and fruit-growers of Fresno, Tulare, Kern, Kings and Madera counties, unite in a corporation for the purpose of concentrating in their hands the raisin industry of these counties, and the dried-fruit interests so far as practicable; that the corporation support the California Fruit Exchange in its general purpose, and invites the co-operation of the California Fruit Exchange in a spirit of reciprocity.
2. That each considerable neighborhood should establish its local packing-house for packing its raisins and other dried fruits, under a corporation plan.
3. That the entire raisin product of the San Joaquin valley should be placed in the hands of the Central California Raisin and Dried Fruit Association, a corporation to be established and to be controlled exclusively by growers, with headquarters at Fresno.
4. That the sales be made through such agencies as the association may determine.
5. That the proceeds of all sales be promptly distributed pro rata among all associations and individuals contributing fruit, according to the sizes and grades held by the association at the period of sale, which period shall not be longer than thirty days.
6. That the capital stock of this corporation shall be

\$250,000, divided into shares of \$1 each. The proceeds of stock are to be employed in making advances to growers, and, when necessary, in erecting warehouses for storage of such fruit as cannot be accommodated in the local packing-houses. The stock shall be held only by fruit and raisin-growers, and no man shall hold more than five shares for each acre in vines or fruit.

7. That the stock of the corporation, with exception of one share to each director, shall be placed in the hands of seven trustees elected by the commercial banks of the five counties mentioned, to be held and voted in trust in the interests of the raisin and fruit-growers of the San Joaquin valley.

8. That the growers of raisins and other fruit in the San Joaquin valley are expected to subscribe an amount not less than \$1 per acre of bearing vines or trees, to the stock of this corporation.

9. That all corporations and commission packing companies and all growers not connected with such, be urged to promptly agree, in writing, with said association, that it shall control the sale of their output, pack, or crop, for the year 1894.

10. That no attempt be made to injure the business of private packing companies, which companies do not attempt to control the sale of fruit, but simply pack, and that all commission houses now in the business be employed as far as practicable by the association in the sale of raisins or other dried fruit, but under its immediate direction.

11. That the association shall work in active fellowship and mutual helpfulness with the California Fruit Exchange, which shall be expected to aid in bringing the raisin and dried-fruit crops of other parts of the State into harmonious relations with this association.

12. That the association shall sell other dried fruit on the same terms as raisins.

13. That the association shall discourage to the utmost of its power the ruinous practice of accepting advances from commission houses or packers, and that it shall be one of the chief duties of the association to provide for growers the necessary advances from banking sources.

14. That the thanks of this convention are due to the bankers and business men of this city for the public-spirited way in which they have encouraged our efforts to rehabilitate the raisin interests, and for the proffers of aid so generously extended to us; and it is the sense of this convention that the Central California Raisin and Dried-Fruit Association, with the following board of 11 directors, be given the support of the growers of Fresno, Tulare, Kern, Kings and Madera counties:

Board of Directors—H. D. Colson, Fresno; L. F. Montague, Tulare; J. C. Kimble, Kings; R. Roberts, Madera; Alex. Gordon, Fresno; W. Forsyth, Fresno; C. Ghent, Fresno; A. B. Butler, Fresno; W. F. Rowell, Fresno; L. Einstein, Fresno; A. Gartenlaub, Fresno.

RESOLUTIONS.

Resolved, That it is the recommendation of this committee that the several grades of raisins should be established by the Central California Raisin and Dried-Fruit Exchange; and that the inspection should be done under the direction of the California Fruit Exchange.

Resolved, That we, your committee, desire the convention to thank Mr. Frank S. Johnson of the Johnson-Locke Mercantile Co., of San Francisco, and Mr. E. F. Adams of the California Fruit Exchange, and Mr. W. W. Phillips for able and untiring assistance they have rendered your committee.

After full discussion and adoption of each item separately the whole report was duly accepted and adopted by the convention.

Rainfall and Temperature.

The following data for the eight days ending 5 A. M. Wednesday, February 28, 1894, are from official sources, and are furnished by the U. S. Weather Bureau expressly for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total rainfall for the eight days.....	Total seasonal rainfall to date.....	Total seasonal rainfall last year to same date.....	Average seasonal rainfall to date.....	Maximum temperature for the eight days.....	Minimum temperature for the eight days.....
Yuma.....	....	1.42	.07	2.95	82	32
San Diego.....	.10	3.66	3.15	7.45	68	38
Los Angeles.....	....	6.24	17.48	14.35	72	36
Keeler.....	....	1.00	2.90	2.26	68	26
Fresno.....	.20	5.88	6.54	5.90	70	30
Sacramento.....	.08	12.48	18.31	14.36	66	38
San Francisco.....	.09	15.50	16.46	18.27	61	38
Red Bluff.....	.14	15.85	24.21	17.49	66	32
Eureka.....	.40	41.56	28.58	32.98	56	28

THERE is published a letter from A. B. Butler, the largest raisin-grower of California, who is now in Washington trying to have a tariff placed on Zante currants. Mr. Butler thinks he has convinced the Senators that Zante currants should be classified as Zante raisins and placed on the dutiable list with Spanish raisins. It seems almost ridiculous that the Washington tariff tinkers should have to be labored with to secure such a result, but the fact is that it is hard to make them understand that the dried flies from Zante grow on a grape vine. The wily Greeks try to show that their dried grapes are not raisins. But what foolishness it is, anyway! If they should claim that their product is chiefly Greek dirt, they would have an easier task, for dirt is not dutiable, or the Government could get all the revenue it needs from Castle Garden.

Citrus Fruit Premiums.

The Awards at the Southern Citrus Fair.

As described in last week's RURAL, the Southern Citrus Fair held in the Southern California Building at the Mid-winter Fair was a notable and creditable success. We publish below the list of awards. If some prominent orange counties had to take lower rank than they think themselves entitled to, they must credit themselves with lack of enterprise in not doing their best. Such consolation is only of use when it stirs up the vanquished to greater effort in the future.

It is very significant that some of the leading awards went to the newer regions at considerable distance from the great centers of production. The following is the list:

Class I.—For best exhibit of citrus fruit from any county in the district: First premium, San Bernardino county, \$200; second, Los Angeles county, \$125; third, Riverside county, \$75; fourth, San Diego county, \$50; fifth, Tulare county, \$35; sixth, Ventura county, \$25.

Class II.—For best exhibit of citrus fruit from any locality in the district: First premium, Porterville, \$125; second, Ontario, \$100; third, Redlands, \$75; fourth, Riverside, \$50; fifth, Highland, \$40; sixth, Duarte, \$25; seventh, Azusa, Covina, Glendora C. G. Association, \$15.

Class III.—The best exhibit of budded and seedling oranges grown by one exhibitor: First premium, G. F. Frost, Porterville, \$100; second, J. S. Harvey, San Diego, \$80; third, Harwood & Woodford, Ontario, \$60; fourth, W. H. Backus, Riverside, \$50; fifth, S. M. Marshall, San Diego, \$35; sixth, A. C. Thomson, Duarte, \$25; seventh, G. T. Stamm, Ontario, \$15.

Class IV.—For best exhibit of lemons grown by one exhibitor: First premium, J. W. Freeman, Ontario, \$100; second, W. S. Andrews, Sierra Madre, \$80; third, Harwood & Woodford, Ontario, \$60; fourth, San Diego Land and Town Company, \$50; fifth, Dr. A. E. McDonald, Ontario, \$35; sixth, R. Lindner, Porterville, \$25; seventh, W. W. Blanchard, Santa Paula, \$15.

Class V.—For best packed box of oranges, commercially considered: First premium, W. Stevenson Jr., Lamanda Park, \$20; second, Charles L. Wilson, Whittier, \$10; third, T. S. McKee, Duarte, \$5.

Class VI.—For best packed box of lemons, commercially considered: First premium, Ontario Lemon Growers' Exchange (Sicily box), \$20; second, Ontario Lemon Growers' Exchange (California box), \$10; third, D. H. Burnham, Riverside, \$5.

Class VII.—For best 30 specimens of Washington Navel, grown by exhibitor: First premium, B. B. Barney, Palm Valley, \$25; second, J. E. Cutter, Riverside, \$15; third, G. F. Frost, Porterville, \$10.

Class VIII.—For best 30 specimens of Mediterranean Sweets, grown by exhibitor: First premium, J. A. Maddock, Duarte, \$25; second, Mr. Bender, Glendora, \$15; third, Mathew Gage, Riverside, \$10.

Class IX.—For best 30 specimens of St. Michaels, grown by exhibitor: First premium, W. H. Backus, Riverside, \$25; second, John Scott, Duarte, \$15; third, Miss E. Freeman, Ontario, \$10.

Class X.—For best 30 specimens of Malta Bloods, grown by exhibitor: First premium, John Scott, Duarte, \$25; second, Essington Gibson, Ojai, \$15; third, H. A. Puls, Riverside, \$10.

Class XI.—For best 30 specimens of some budded variety of orange, not mentioned above, grown by exhibitor: First premium, G. F. Frost Sr., Porterville, \$25; Jaffa; second, O. S. Picher, Ontario, \$15; Targentine; third, J. W. F. Diss, Redlands, \$10; Valencia.

Class XII.—For best 30 specimens of seedling oranges, grown by exhibitor: First premium, G. E. Frost Sr., Porterville, \$25; second, A. M. Quinn, Porterville, \$15; third, T. S. McKee, Duarte, \$10.

Class XIII.—For best specimens of Lisbon lemons, grown by exhibitor: First premium, J. W. Freeman, Ontario, \$25; second, Frank Freeman, Ontario, \$15; third, Harwood & Woodford, Ontario, \$10.

Class XIV.—For best 30 specimens of cured Villa Franca lemons, grown by exhibitor: First premium, R. Lindner, Porterville, \$25; second, J. W. Freeman, Ontario, \$15; third, A. M. Quinn, Porterville, \$10.

Class XV.—For best 30 specimens of cured Eureka lemons, grown by exhibitor: First premium, G. R. R. Thayer, Cucamonga, \$25; second, J. W. Freeman, Ontario, \$15; third, R. Lindner, Porterville, \$10.

Class XVI.—For best 30 specimens of some variety of lemon (cured) not mentioned above, grown by exhibitor: First premium, J. W. Freeman, Ontario (Genoa), \$25; second, J. S. Harvey, El Nido (Bonnie Brae), \$15; third, E. S. Thacher, Ojai (Sicily), \$10.

Class XVII.—For best exhibit of limes grown by an individual: First premium, John Scott, Duarte (Mexican), \$10; second, A. C. Thompson, Duarte (Imperial), \$5.

Class XVIII.—For best exhibit of citron of commerce: First premium, W. R. Ingham, Highlands, \$10; second, I. H. Cammack, Whittier, \$5.

Class XIX.—For best exhibit of grape fruit: First premium, S. M. Marshall, San Diego, \$10; second, F. M. Douglass, Duarte, \$5.

Class XX.—For best exhibit of Shaddocks or Pamelos: First premium, C. H. McKeet, Santa Paula, \$5.

Class XXI.—For best exhibit of products of the orange and lemon: First premium, L. E. Allen, San Diego, \$20; second, Southern California Packing Company, Los Angeles, \$20; third, E. C. Drifill, Pomona, \$5; fourth, Pasadena Preserving Company, Pasadena, \$5.

Class XXII.—For best exhibit of semi-tropic products: L. E. Allen, San Diego, guava jelly, \$2; L. E. Allen, San Diego, guava fruit, \$2.50; L. E. Allen, San Diego, fig preserves, \$2.50; L. E. Allen, San Diego, fig jam, \$2.50; Jacob Miller, Cahuenga, bananas, \$2.50; Jacob Miller, cherimoyas, \$2.50; F. A. Kimball, National City, olive oil, \$40; R. C. Allen, Bonita, pickled olives, \$7.50; H. O. Bowen, Escondido, dried figs, \$2.50; Mrs. Mary McLaren, San Diego, crystallized fruit, \$5; Mrs. Mary McLaren, San Diego, jellies, \$7.50; C. H. Conant, Ontario, olive oil, \$20; J. L. Howland, Pomona, olive oil, \$30; Thacher & Sons, Pomona, pickled olives, \$15.

THE Government Statistician is reporting from Washington that Californians are forsaking the horse and cleaving unto the hog. There has been a decrease in the number of horses in California since January of last year. The report says of California that in many parts of the State the horse-breeding industry has been curtailed, as prices are too low to warrant a large production. The prices paid for cattle are low and the prospect for an increase is poor, owing to the number of cattle shipped from Arizona and New Mexico to the California market, thus making additional competition for home-raised stock. Wool is a drug and mutton very low. Hogs are in demand at very good prices. Stock hogs are not offered at all. The present low price paid for grain warrants the grower in fattening hogs for the market. Of all live-stock industries in California the raising of hogs seems to be the best at present. Unless we get better packing arrangements, however, we shall very soon have too much hog. If the importation of western pork products is allowed to continue the California hog will soon be begging somebody to stick him. But if cheap, raw pork will bring capital to a recognition of this local need and opportunity, it may be a good thing in the long run.

State Horticultural Society.

Methods of Treatment for Red Spider Discussed. The Perkins Process Explained, Etc., Etc.

At the regular monthly meeting of the State Horticultural Society in this city on Friday last the special subjects of discussion were:

- (1) Treatment of Orchards Affected with Red Spider.
- (2) The Perkins Process for Preservation of Ripe Fruit in Transit; and
- (3) Fruit Marketing.

The first subject was opened by a paper written by Mr. Alexander Crow of the State Board of Horticulture, as follows:

Red spider or mite (*Tetranychus telarius*) is a native of Europe, but with the distribution of plants and trees it is now widely scattered. California's warm, dry summers are particularly well adapted for the increase of this pest and this is the reason why it proves so injurious when no efforts are made to check it. Nearly all our fruit trees are more or less subject to its attacks. Even weeds are sometimes covered with them. The perfect spiders are scarcely visible to the naked eye and are liable to be overlooked until they have damaged the tree or plant on which they feed. Upon evergreen or soft wooded plants perfect spiders can be found during the winter months. Those infesting deciduous trees deposit their eggs in the fall on the under side of the branches or around the buds on the smaller twigs. These are spherical and bright red in color and hatch in the spring after the tree starts to grow. When the mites are hatched they have six legs but after moulting we find they are provided with another pair. This is the perfect state. In this stage they vary in color from a blood red to a very pale red, according to the plants they feed upon. With a good pocket lens their delicate threads or web can be seen, under which they congregate, destroying the epidermis of the leaf and extracting the juices therefrom, leaving it blanched or colorless, and soon thereafter it falls, leaving the tree leafless and stunted in mid-summer.

The destruction of this pest while in the egg state has not been satisfactory, unless the solution was strong with caustics, and in that case it is liable to cause injury to the buds or bark. The summer washes of rosin or soap and the kerosene emulsion have also given good results when carefully prepared and applied, but are more or less hurtful to the deciduous tree during its growing period. The use of sulphur in various forms as a repellent has been known to the horticulturists of Europe and America for a great many years. In hothouses, where this pest is frequently very troublesome, the heating pipes or flues have been covered with a paste containing lime and sulphur, the latter predominating. The great drawback to sulphur has been the cost of applying it to orchard trees. This has been overcome by the invention—or rather practical application of an old invention—of Mr. George Ditzler, of Biggs, Butte county. He has so constructed a broadcast seeder that it distributes the sulphur in a dense cloud through from three to six rows of trees in the time necessary to drive through. The sulphur is thrown in one direction and is applied in the morning when the leaves are damp. An almond orchard that was treated by Mr. Ditzler in this manner for the past two seasons has retained the leaves until late in the fall, whereas other orchards in the same district not sulphured dropped their leaves in August and September. Mr. Ditzler's apparatus will be fully illustrated and described in the forthcoming report of the State Board of Horticulture, so I will not occupy your time in describing it.

Mr. A. Scott Chapman, of San Gabriel, Los Angeles county, has been experimenting with sulphur for the past season as a remedy for smut and to prevent the increase of scale insects on his lemon and orange trees, and reports good results. Of course, sulphur acts more as a repellent of insect pests, but the good results and its cheapness and its well-known fungicidal properties will warrant a more general use of it during the growing season. The same treatment is recommended for the "yellow mite."

Judge Tilden of Niles asked what was the best time to apply the sulphur as directed by Mr. Crow. He said that in making this inquiry it was a good time to add that instructions for spraying, etc., were usually indefinite as to the time of application.

Mr. A. T. Hatch said that the time to attack the yellow mite and the red spider was during the season of growth; that seasons and localities varied so much that it was quite impossible to state specific times to do specific things. A good rule would be to put on the sulphur when the bugs begin to crawl.

The president, Mr. Lelong, said that the yellow mites came in May and June and that any time during those months was a good time to apply the sulphur, or it might be put on sooner with advantage.

Judge Tilden had tried different sprays at different times without benefit. His experience in sulphuring for red spider was that he got the best results in the month of May. It did some good in June and none at all in September. His situation was in the low valley country in the neighborhood of Niles.

Prof. Allen of San Jose said (referring to Mr. Hatch's remark that the time to apply dry sulphur for red spider was during the period of growth) that not so much the condition of the tree as the state of the insect should determine the time of sulphur treatment. If the orchardist would make a little use of the microscope and thus learn when the insects were hatching, he would have no trouble in determining when to turn on the sulphur. Put it on, he said, during the predatory life of the insect—while it is feeding. He had used sulphur for red spider with the best results.

Mr. Hatch referred again to the point made by Judge Tilden. It would, he thought, be very wrong to give out under the authority of the State Horticultural Society, any specific directions as to the time of applying sulphur or other parasite-destroying treatments, because it would, under the varying conditions of seasons and climates, be misleading and do more harm than good.

Capt. Brainard of San Jose said that the red spider was especially destructive in the case of grafted trees; that in infected orchards they swarmed about the grafts especially when the leaves were just coming out.

Mr. Lelong showed drawings of a barley-seeder with sulphuring attachment as used by Mr. Ditzler in the Hatch & Rock orchard at Rio Bonita. The whole of the great orchard of 1650 acres had been finely dusted with sulphur during the past two or three years and with the best results. That this treatment had been of great value to the orchard was made manifest by the fact that trees across the road and not sulphured had been seriously delayed in their development by the ravages of the spider. Replying to questions, Mr. Lelong said that the sulphur dust would adhere better to the trees if they were sprayed with water

(Continued on page 169.)

CORRESPONDENCE.

In the Heart of Orange Land.

GLENORA, Los Angeles Co., Cal., Feb. 16, 1894.

TO THE EDITOR:—The visitor to southern California is always meeting with surprises in the form of variations of climate, for which to ordinary observation there seems no adequate cause. Within the brief journey from Los Angeles to San Bernardino and return, taking in Pasadena, Ontario, Pomona, Colton, Redlands, Glendora, Riverside and twenty other notable points, there may be found almost as many climates as there are railway stations, each with some peculiarity differentiating it from every other locality. This is, indeed, one of the charms of the country, and, as well—for in this material age it is not enough that a country should simply be charming—it is one of its very notable advantages. It is the basis of that infinite variety of production and of that specialization of industry which so distinguish southern California from other lands. Without it, horticulture, which in its practice here is not only a business, but a science—a source of delightful study as well as a source of profit—would become a mere treadmill grind like some older forms of agricultural industry.

These reflections have been called to mind by a stay of something less than a week at Glendora, with whose attractions I have been greatly impressed, and which, with your permission, I shall attempt to set forth for the benefit of the RURAL'S many readers. The beauty of Glendora is the beauty characteristic of southern California. All the variations of color, all the vicissitudes of elevation and distance, are here in perfection; and if one had nought to do but to dream life away amid delightful scenes and balmy airs, here would be indeed an ideal place to do it. That this part of Glendora's attractions has not passed unnoted is made evident by the presence of many winter visitors from colder regions and by a continuous procession of tourists.

The special claim of Glendora is exemption from frost. The cold spell of last month, which left marks that may still be traced in many orange groves in this and adjoining counties, passed clean over the little district of Glendora (about three thousand acres) without touching it; and there is not a withered leaf to show that the frost king was ever close about. The district is also free from fogs, and this is believed to be one reason why the scale bug, so damaging in other localities, has never succeeded in establishing himself. The earlier settlers found it difficult to get water in sufficient quantities, but there is now no deficiency in that respect. Under the Wright law, the people formed an irrigation district, and by an issue of bonds in the sum of \$170,000 have constructed a magnificent system of water works. The supply comes direct from mountain sources and is ample for all requirements. The fall is sufficient to give any desired power—a fact of the highest significance in its relation to future industrial development.

I have long been familiar with southern California land prices, and it was a surprise to find the very best soils going at prices ranging from one hundred to five hundred dollars per acre. Lands of really less productive worth, in situations less inviting and advantageous, I have seen sell readily for one thousand dollars per acre and even better still; and as I look at this district with its fatness and sunshine, with its wealth of material resource and of beauty, I realize that the report which says that all the best districts in southern California have already been "snapped up" is not true.

It may truly be said of Glendora, as, unhappily, it cannot be said of all places, that the people match their surroundings. The place is full of stirring men, and when I name Messrs. Miller, Daly, Allen, La Fetra Bros., Ferguson, Needham, Call and Muir it is only as personal representatives of a community wide awake to every project calculated to promote the general welfare. And in this connection I was more than pleased to see that the prevailing theory of the public welfare was the promotion of industry, thrift and the good causes of education and public morals. There is, in truth, no other way to build up a community in strength, and it is well for the Glendora of the future that the men of Glendora of to-day have the right sort of mettle in them.

If what I have written seems wholly in praise, it is because I have been pleased with everything and have seen nothing to condemn. Indeed—I am speaking wholly for myself—I have seen no place in southern California or elsewhere which has so matched my ideal of perfection as this bright and smiling vale, and when I write of it in terms of enthusiasm it is only to express what I feel.

Glendora is twenty-seven miles east, or a little north of east, of Los Angeles, in the county of that name, and is on the line of the Santa Fe railroad. The elevation of the district varies from 700 to 1100 feet above sea level—a condition which combines genial temperatures with freshness and vitality of atmosphere. Let those who wish to reach the center and heart of the orange land—to see the citrus belt at its best—follow my footsteps to Glendora.

Wants Help with the Linnet.

TO THE EDITOR:—*Carpodacus* (a cuss)—*Frontalis*, yes, that's him, "he's a bird," he is. I'm not a latitudinarian or a birdologist, but I suppose that means in plain, every-day North American a cuss who is always in front or who "never gets left." Very appropriately named considering the character of the beast, but that's not the question at present. I thought to head him off my prune buds last year by applying the lime and sulphur wash, and thereby kill both bugs and birds with one stone. It didn't work. He took the lime for a tooth powder and the sulphur as a remedy for that tired feeling. I want to try him a round with Paris green this spring, and would like to know what sized dose you would recommend considering the foe, the tender buds and the tenderest spot in my anatomy at present—my pocket-book?

W. F. WILLCOX.

THE IRRIGATIONIST.

The Water Supplies in the Arid Regions.

Part III.

By J. W. Powell, Director of the U. S. Geological Survey.

Sources of Water Supply, Continued.

[Major Powell uses a specially prepared map to show estimated runoffs from the different regions of the United States, and continues as follows:]

In the construction of the runoff map the laws heretofore explained have been used, and topographic features have received consideration. It will be seen that the runoff map does not wholly coincide with the rainfall map, from the fact that topographic features play a more important part in runoff. Altitude affects rainfall, and altitude and character of surface affect runoff; and as rainfall becomes less, runoff is affected by character of surface in a steadily increasing ratio.

Turning to the districts represented in the map, the following statements may be made: It has been seen that the practical duty of water is 24 inches. Now, where the runoff is from 5 to 10 inches, if all the runoff were caught and used in irrigation, nearly one-third of the land could be irrigated, but in that region the rainfall itself is usually sufficient for agriculture, and irrigation is only needed as supplementary to the rainfall.

Effect of Topography.—Where the runoff is from two to five inches the total is about one-seventh of the amount necessary for irrigation; that is, a catchment of seven acres, if all is utilized, will irrigate one acre. Where the runoff is from nothing to two inches some interesting conditions are found, which must be more fully explained. Here the topographic conditions are controlling, and very large districts exist where there is no runoff, and other districts where the runoff is very slight, it being found only in storm-water streams and very infrequent springs. We may divide this district where the runoff is from nothing to two inches into three portions, which appear to be nearly equal. As determined by topographic conditions and diminished rainfall, one-third will have no runoff, another third will have a runoff of one inch, and the remaining third a runoff of two inches. If all this water could be caught and used upon the land in irrigation, then on the land where there is no runoff there would be no irrigation; on the second portion, where the runoff is one inch, one acre in twenty-four could be irrigated; on the third portion, where the runoff is two inches, one acre in twelve could be irrigated.

Absolute Catch and Possible Catch.—So far we have considered the problem only on the supposition that all of the water can be caught, but this is not possible. The total runoff we will call the absolute catch, and we will now proceed to find the possible catch, the practical catch and the crude catch, as we have defined the absolute duty, the possible duty, the practical duty and the injurious duty of water.

The water which is used in irrigation must be caught. The season of irrigation is short as compared with the remainder of the year. All the water which is not used as it is caught must be stored in reservoirs; but from these reservoirs a part of the stored water will evaporate, the amount varying in different latitudes and altitudes from 50 to 100 inches annually. That is, if a reservoir has a surface of 10 acres, then 10 acres of water 50 to 100 inches in depth will be evaporated annually. It is not possible, therefore, to hold all the water stored; but if we suppose that the catch of the waters be perfect, which can be effected only at an enormous and impracticable expense, then the possible catch is that which is used immediately after being caught and that remaining in the reservoir after evaporation. This possible catch will be 30 per cent less than the absolute catch. Space does not here permit of a discussion of the facts which lead to this conclusion, and only the simple statement is made. The possible catch, then, is 70 per cent of the absolute catch.

The Practical Catch.—The possible catch is impracticable by reason of excessive cost; and we have a further reduction to make. Where the catch is concentrated by greater rainfall and most favorable conditions of topography, the practical catch is comparatively large; where the rainfall is less and the topographic features more unfavorable, the practical catch is very small. It will never pay to impound the storm waters of sand deserts; it will never pay to impound the storm waters of bad lands; it will never pay to impound the storm waters of land of volcanic scoria; and there are many other minor conditions of storm-water catching which are inhibitory. Storm waters can rarely be caught at a practical expense where the rainfall is less than 12 or 15 inches. All such waters must therefore be neglected as not entering into the problem of the catch. But where there are mountain lands which condense an amount of water greater than the adjacent lowlands, and where at the same time the catchment surfaces are topographically advantageous, very large quantities of storm waters may be secured; but to a large extent they are added to perennial streams, and their catch, therefore, depends upon the control of perennial streams.

Limitations upon Cultivation.—There is still another important factor to examine in this connection. Rains fall in intermittent storms. Some showers are gentle and furnish small amounts of water; some great storms furnish large quantities of water. The maximum storms which cause destructive floods fall at intervals of years. Now it will never be practicable to catch all the water of maximum storms, because of the great expense of constructing the necessary works. On every stream where works are constructed for diverting the water, spill-ways are necessary to provide against the maximum storms. Practically, it will be found economic to waste all the water of storms which

much exceed the mean, and these are the rains which serve greatly to increase the runoff.

We have, then, to deduct from the possible catch that portion of the storm-water streams which must be neglected and that portion of the great storm floods which will be spilled, which together amount to about 30 per cent. Thus the possible catch will be reduced to the practical catch. The reason for reaching this conclusion cannot be entered upon here for want of space. It is thus found that there are inexorable conditions which limit the amount of land which can be practically cultivated in the arid region. The practical catch and the practical duty of water set these limits.

How Mountains Effect Rainfall.—Before proceeding to apply these laws in estimating the amount of land which can be irrigated, another important fact with regard to the water supply should be pointed out. Mountains concentrate the rainfall. Thus, in the great system of the Park mountains of Colorado; in the Wasatch and Uinta mountains of Utah and Colorado; in the Black Hills and the geyser mountains of Wyoming, stretching up into Montana; and in the great mountain systems of Montana and Idaho, large areas of increased rainfall are found. Again, in central Washington, Oregon and eastern California, the Cascade mountains and Sierra Nevada furnish another example of increased rainfall. This gives to the arid lands of these States, where irrigation is necessary, large streams of water having their sources in the mountains where the rainfall is great and the runoff is also great. In the upper regions little or no irrigation is necessary, and only small areas can be cultivated because of the mountainous character of the country. These mountain-born waters, therefore, may be used upon the mesas, plains and valleys below. This gives to all of these districts a large source of water supply, which is often limited only by the distance to which it can be practically carried in canals. In making a general statement of the amount of land which can be irrigated in the United States, it is necessary to consider these facts also.

Amount of Land that Can Be Irrigated.—It is proposed now to consider those areas of country in the western half of the United States where the rainfall is 20 inches or less. There are large districts of country which can be profitably irrigated where the rainfall is more than 20 inches, but for present purposes these are neglected.

The total area where the mean annual rainfall does not exceed 20 inches is about 750,000,000 acres. The water to be used in irrigation in all of this country, with some slight exceptions hereafter to be noted, is the natural runoff from the same areas, to which must be added the amount of water caught in the mountain regions where the rainfall is more than 20 inches, but which runs down where it can be taken upon the lands having 20 inches of rainfall or less. When we compute the absolute runoff of all of this region, it is found that if it could be all caught and all distributed upon irrigable lands at the rate of 24 acre-inches to every acre of crop, the amount which could thus be irrigated would be about one-tenth of the whole, or 75,000,000 acres. But this supposes an absolute catch, which is impossible. Reduced to the possible catch (which is not practical) the amount is little over 52,000,000 acres. This reduced again to the practical catch gives a little over 36,500,000 acres. This, then, is the amount of land in the arid region where the rainfall is 20 inches or less which can, under practical conditions, be redeemed for agriculture by irrigation through the use of the natural runoff. But to redeem it, all the practical catch from the arid region and from the mountains which deliver their water into the arid region must be utilized.

In the above estimate only natural runoff has been considered. We must now turn attention to other sources of water to which reference has been made from time to time.

It will be seen that in making this estimate it is proposed to transform runoff water into flyoff water through the agency of growing crops and the evaporation consequent on the processes of irrigation. Now a portion of the natural flyoff can be caught before it is evaporated and can be used in irrigation.

Supplies by Pumping.—First. Some of the rainfall sinks away into the earth, where it in part runs off by spring, but in chief part by slow evaporation, coming to the surface by slow evaporation, coming to the surface by capillary attraction. This water which sinks into the soil can be utilized as an important supply, adding to the total only a small percentage, it is true, but when measured in acres the amount is worthy of consideration. Into the surface soils and rocks wells may be sunk and the water may be pumped upon the land for irrigation. The actual experience of mankind throughout the world exhibits the fact that millions of acres are thus cultivated. The tracts redeemed by single wells may be small, but such pump wells in the aggregate furnish considerable quantities of water, even in measures which irrigation requires, by acre-inches and acre-feet.

Artesian Waters.—Second. Waters which sink away underground are often carried to considerable depth, and may be returned to the surface by hydraulic pressure under proper geological conditions. These supplies are known as artesian waters. In the practical operations of irrigation throughout the world, it is found that artesian wells may be made to supply considerable quantities of water for irrigation. Single artesian wells furnish on the average much greater quantities than single pump wells; but artesian wells are successful only under greater intervals of areal space.

Floodplain Waters.—Third. Along the course of storm-water and perennial streams there is usually found a floodplain—a belt of country on either side of the stream which receives the overflow from the stream when great storms occur that swell it beyond the capacity of its banks. In such floodplains accumulations of sand and gravel are found irregularly distributed among soils and clays. These sand and gravel deposits become natural reservoirs for water, which comes down in part from the adjacent hills, but in larger part from the great floods. Now, these floodplain

waters can be secured for irrigation, either by tapping them with canals that lead to lower ground, or by sinking wells and pumping out the water. In actual practice both the gravity method and the pump method are used, but in general the pump method is found more economical.

The irrigable area of the arid region can therefore be increased from these three sources, but the quantities cannot be exactly defined without most thorough geological research. Some districts will afford much, some little, by varying geological conditions, but actual experience proves that the amounts are considerable and worthy of notice in such an account of water supply as we are now giving. It seems probable from the general experience of other lands that three or three and a half million acres may be added to the total for the arid region by the use of pump waters, artesian waters and floodplain waters. This, then, will give to practical irrigation in the arid lands where 20 inches of rainfall or less is found, a total area of 40,000,000 acres.

Amount of Land Under Cultivation.—In no civilized land is all the land cultivated. Denmark has the greatest amount, where 75 per cent is under the plow. When these 40,000,000 acres are cultivated by methods of irrigation they will be found wonderfully productive, and their products will support a population as great as that found in the United States at the present time. It must be many decades before it is all redeemed. As from district to district farmers come nearer to the realization of the practical catch, more refined methods of catch will be adopted and the practical catch will be increased; but this will not result in increasing the acreage cultivated, for, at the same time, better methods of irrigation will be developed, from which a greater production will result and which will require a greater practical duty of water; in fact, it seems probable that intensive agriculture by increasing the product will decrease the acreage, so that the total amount here estimated will never be realized.

A word must be said about the character of this investigation and the degree of probability which inheres in its results.

In measuring rainfall and runoff, only averages can be given. A farmer sells a field of corn standing in the shock. In order that he may establish its value, he husks and measures a few shocks and derives therefrom an average which controls the quantity in the terms of the sale. The average thus obtained will never, except by accident, be exactly that of any one shock of corn, and yet an approximation to accuracy will be reached sufficient for practical purposes of trade. In like manner, the statements made in this paper are rarely, if ever, absolutely accurate for any one small district of country, and the quantities must always be taken as mean quantities, which only approximate accuracy. The investigations have been carried on but for a few years, and to be complete by small districts it would be necessary to multiply greatly the stations for rainfall gauging and stream gauging. Notwithstanding all this, the general averages may be taken as approximately safe.

Most of the lands now irrigated are watered by streams and irrigating works that do not require the most expensive plants; that is, the small streams are nearly all taken out upon the land, and a small stream irrigates a small area at a correspondingly small total cost. As irrigation is extended, larger and still larger plants are generally, though not always, necessary, and for this purpose aggregated capital is necessary. This capital will sometimes be secured by co-operation among the irrigators themselves, and sometimes capital will itself lead the way, for the purpose of increasing the value of lands and selling the same with water-rights to the farmers. Whatever method is pursued, aggregated capital must be employed. Therefore the farmer and the capitalist alike are interested in these results. Before money or labor is to be invested in irrigating works, it becomes necessary to consider the water supply. Is there land? is the first question raised; Is there water? is the next question; and, Can the water be carried to the land with reasonable economy? is the third. Many canals have been constructed without a proper consideration of these three questions, and already capital has been wasted, and we have now reached a time in arid America when these three primary questions relating to irrigation enterprises should be properly answered, before lands are bought and sold, homes established, labor organized and capital invested. Without these precautions bonds are worthless.

In the next annual report of the Geological Survey the subject of this article will be treated at length and the facts arrayed in a more elaborate manner.

THE FIELD.

Asparagus Growing in Southern California.

At the last meeting of the Southern California Farmers' Institute, S. J. Murdock of Westminster read the following important paper:

The growing of asparagus in southern California has been neglected in the past. The increasing demand and consequent remunerative prices obtained for this vegetable, as well as its availability for transportation, when we take in consideration the large area that is well adapted for the successful cultivation of this succulent, hardy perennial plant, surely renders it an object worthy of the careful attention of the gardener.

As a general rule asparagus thrives best near the sea coast, where the humid saline air seems to be better adapted for its growth.

It can be and is successfully grown far from the coast and on almost any kind of soil. The soil best adapted for growing asparagus is a deep, rich sandy loam, and as it is a gross feeder the plot cannot well be made too rich; unless the manure is buried so deep as to lose its fertilizing qualities, etc., the roots reach it. For instance, in the old laborious and expensive way of trenching two or more feet deep, with the manure mixed to the bottom, on most soils

it would lose its strength before the roots would penetrate so deep. Yet great care should be used in the beginning, for, if rightly planted and properly cared for, the crop should be as good or better at 20 or 25 years as at three or four years from the starting of the bed; the above-mentioned excessive deep trenching is considered unnecessary, but deep plowing and thorough pulverizing is not to be neglected. Bestow a liberal quantity of fertilizers, for it is this which helps to give the quick growth of tender shoots and to secure them of good size; and also, if we want our bed to last a quarter of a century, we must not crowd our plants at the start. The rows should be four feet apart and the plants 18 inches from each other in the rows, and even more room would be better if the land is not too valuable. We like the following mode of planting for field culture: After the ground is well plowed and finely harrowed, mark out the rows the desired distance apart with a plow by going twice in each row, throwing a furrow each way from the center of the row, and from 8 to 12 inches deep; then go one or more rounds in this with a cultivator, closed up, so as to loosen up the soil well in the bottom of the row. Now, if you have any fine fertilizer put it in the row where you want to set your plants; mix well with the soil and set your plants over it.

The work of planting can be done any time from November till April, or even later. We like early planting the best. Use one-year-old plants; they are better than older ones, if they have been properly grown. Place the plants in the bottom of the prepared furrow, spread out the roots and cover crown and all about two or three inches—the lighter the soil the deeper the plants should be placed—so as to secure the proper moisture till they begin to strike root. After the planting has been done, a light steel garden rake, or, if the rows are even enough, we would prefer the wheel hoe with the rakes on, and stir the soil the whole length of the rows. Then, when the shoots begin to grow and show themselves three or four inches high, the soil should be gradually hoed or cultivated to the plants till the surface is level. The ground should be kept moist, and in most localities irrigation will be found necessary to secure the best results.

Do not neglect thorough cultivation, but after the roots begin to fill the ground do not work too deep, as there is danger of injuring them. Do not cut any shoots the first year after planting, and but sparingly the second, as it weakens the plant when cut so young. If the after care, as recommended further on, is carried out, the bed should increase in yield for three or four years. The edible part of the plant is the undeveloped stems. These, if cut away as they appear, will be replaced by others which start from the crown. Cut all the shoots clean at each cutting during the season, whether they are large enough to use or not, for if part of stalks are allowed to grow they will prevent other buds from throwing up stalks, and make your season's cutting short. Keep the ground well cleaned during the harvesting period, and if you have been liberal with your fertilizers and have kept your ground moist, your crop will last as long as a profitable demand is likely to exist. Yet, beware of prolonging the harvesting period too late, so as to weaken the next year's crop, as the nature of the crop requires that, to reproduce annually its crop of shoots, something must be left to grow so as to foster the formation of new roots and a new set of buds. If your season commences early you should lay by the knife later on to correspond. Let all the tops grow and do not cut out the large shoots. In the fall or early winter, when the tops have turned brown, the ground should be cleaned and all rubbish burned, for if delayed the seed will drop and get scattered, which will come up and may prove eventually to be the worst weed the grower will have to contend with, for if allowed to grow after once started it will soon fill the whole ground with a mass of roots, and very soon spoil the whole patch. As soon as the ground is cleaned the whole field should be well cultivated, and coarse manure spread over the entire surface, so that the rains can dissolve and carry down the soluble plant food to the roots. As the period of rest here in our mild and warm winters is very short, with this strong and persisting plant no delay should be indulged in furnishing the necessary plant food.

There are knives made expressly for cutting the shoots, but we find that the ordinary long blade butcher's knife answers the purpose satisfactorily. It should be kept keen and sharp, but the wielder of that knife should handle it with thoughtful care, else he may destroy many unseen shoots. The time that should elapse between cuttings varies in different soils, some being warmer and consequently quicker than others; then again, much depends on the weather; some years we will have warm days in February, which will necessitate cutting twice each week, and it may be followed by cold days in March, when the cuttings will be meager once a week; and again in the warm days of May it may require three cuttings per week to prevent the heads from bursting, which spoils it for market. When cutting, lay in convenient piles along the rows. Gather in baskets, but do not let the cut grass lie in the sun so as to wilt; wash clean before tying; tie into round bunches. As there seems to be no uniform or standard size, we uniformly tie in half-pound bunches, and use raffia for that purpose. It is a good material for the tying of many articles, and is fast superceding Cuba bast, both in garden and nursery. The butt ends of the bunches should be cut off square. For shipping it is usually packed in light boxes and sold by weight, and if to be shipped a long distance, all shoots laid one way and the box marked so the tops of the plant can be kept in an upright position, or else there are liable to be many crooked shoots when unpacked.

As to variety, we grow mostly Barr's Mammoth and Conover's Colossal, and we are also trying Palmetto and Donald Elmira. Our preference at present is Barr's Mammoth, on account of its earliness and fine, large crisp shoots. Other varieties may prove as valuable after longer trial.

As to returns from the crop—which, to most every grower, is the most interesting part—would say that it varies with the seasons; yet for good early grass there is always a demand, and at figures that few other crops will

equal. It is not uncommon for it to bring twenty or twenty-five cents a pound, while later in the season we have seen it sell so low as to barely pay the expense of marketing. Yet, take it one year with another, we consider it a very valuable crop, for when we take in consideration its being so well adapted to shipping long distances to large Northern cities, the outlook is surely good.

THE DAIRY.

Effect of Feed on Quality of Milk.

TO THE EDITOR:—There is still another subject, or rather theory, recently advanced and said to be founded on a certain class of experiments in feeding milch cows. It is, in substance, that a cow will give the same quality of milk be the feed poor or rich that is given to her. I believe that one of our learned authorities on rations has given it out as a fact that a cow will give milk as rich in butter fat when fed on wheat straw as when fed on grain, as "long as the cow holds out." I suppose that means as long as the reserve of "cow meat" lasts.

That is a bold statement, if nothing else. It looks like going to extremes, and though California is said to be a country of extremely big things, our rainless summers making the very best straw in the world for feeding purposes and all that, yet we have never found out the great advantage there is in keeping our milch cows upon it. Of a truth, we are slow to learn. No, there is not a dairyman in California who will believe that poor feed makes as good milk as rich feed. We have had too much experience in that respect. Why, if no one ever uttered an objection to such a theory, the very grass itself would cry out at such an injustice to it.

I am not putting forward any claim that good feeding will make good cows out of poor ones, but all dairymen in this State know that as the grass begins to approach toward maturity fewer pounds of milk are required from the same cows to make a pound of butter than it took when the grass was young and succulent. The cows give more milk when the grass is in the latter state, but the churn won't give forth as much butter from a given quantity of milk as it will later on in the season. As the grass begins to lose something of its watery nature, the cows begin to get fat, "look sleek," and give milk that produces more pounds of butter to each 100 pounds of milk.

Allowing for the fact that, as a rule, the longer a cow has been in milk the richer will be the milk she gives, the above is the experience of California dairymen in general.

It may be that the habit of giving richer milk at a certain time of the year has become hereditary in the native cattle. There may be something in that, but still I have an idea that if the straw stack was substituted for the rich, nutritious grass the heredity would be quickly thrown out of the system, and the churn, too, would "a tale unfold."

I will briefly refer to the tables of the Columbian tests. All who have studied the tables, as published in the *Breeders' Gazette*, for the purpose of comparing the quantity and quality of any or all of the cows' milk, will have noticed that the majority of the cows that went through the three tests gave richer milk in the month of September than in the month of May. There were 26 of these cows; viz., ten Jerseys, seven Guernseys and nine Shorthorns.

This fact is plainly shown in a tabular statement prepared by Prof. E. H. Farrington of Champaign, Illinois, and published in a recent number of *Hoard's Dairymen*. The table shows three things; viz., the loss in quantity of milk, the gain or loss in per cent of butter fat, and gain or loss in live weight of each cow, or, in other words, the difference between the average milk yield and fat during the 15 days in May and the 30 days of September.

It will be observed that the two cows, Nos. 24 and 25, had increased a little in the quantity of milk they gave. No. 24 was one of the five cows that showed a decrease in per cent fat, but she gained in live weight 145 pounds, while No. 25 not only gained 202 pounds live weight, but also made a gain in quantity of milk and the per cent of fat. Only one cow, No. 14, shows a loss in all three columns of figures. Further comment is unnecessary; the figures speak for themselves.

TABULAR STATEMENT.

Difference between average daily weight, and also test of milk produced in May and September.

Cow No.	Milk		
	Loss in lbs per day.	Gain in per cent fat.	Gain in lbs live weight.
1.....	9.4	0.73	40
2.....	4.8	0.83	60
3.....	12.0	0.77	91
4.....	13.0	0.65	91
5.....	19.1	1.63	-71
6.....	6.1	-0.02	87
7.....	4.3	0.60	115
8.....	9.2	0.58	83
9.....	7.2	0.34	114
10.....	6.8	0.20	25
11.....	2.8	0.46	69
12.....	3.6	0.55	21
13.....	7.5	0.67	74
14.....	3.9	-0.83	-33
15.....	4.1	0.14	56
16.....	6.3	0.05	35
17.....	0.3	1.03	85
18.....	9.6	0.04	160
19.....	10.0	0.08	131
20.....	0.6	-0.15	229
21.....	11.5	0.40	-12
22.....	8.6	-0.26	54
23.....	1.5	0.73	190
24.....	+1.5	-0.11	145
25.....	+1.5	0.04	202
26.....	4.9	0.34	162

After some remarks on the individuality of certain cows, Prof. Farrington says that unless "some abnormal occurrence caused a temporary extreme variation, each cow produced milk that did not vary much more from her standard than the figures given in this table, unless there was a

decrease of milk." He then asks: "Is the difference in the per cent fat in the milk as large as would commonly be expected from so long a time of heavy grain feeding?"

As the length of time referred to is only 135 days, or less than half the ordinary time a cow is giving milk each season, I do not think it long enough to make any permanent impression, such as would affect breed characteristics by a longer period of good feeding, but there can be little doubt that some of the increased per cent of butter-fat was due to the good feeding, as it is not at all unusual for a man handling milk that has been set for cream to notice a change to cream, without his knowing anything about the change of feed which has caused it.

It is only reasonable to suppose that if the flavor, texture, grain and solidity of butter are all, or any of them, so easily influenced by the quality of the feed, that the same improved system of feeding that makes an improvement in the quality of the butter should also have some influence on the quality of the milk that produces that same butter—consequently an increased quantity of the latter.

Since writing the above it has occurred to me that there might be some facts bearing on this subject in the experiment of Mr. Thomas Horsfall, as published in his work, "The Management of Dairy Cattle," about 40 years ago, and added as an appendix to Flint's work on "Milch Cows and Dairy Farming."

Mr. Horsfall appears to have conducted his experiments in a practical and systematic manner, with his own cows, and at first for his own special benefit, though afterward he came to the conclusion that, having learned so much, it was his duty to give the benefit of his experience to his fellow dairymen. He freely expresses the opinion that the quality of milk can be improved by feeding. Referring to a class of cows he was in the habit of buying, as strippers, that had been kept on the ordinary food of the farm, he says, page 372: "When they come under my treatment increase their yield of milk until after a week or two they give two quarts (certainly not wine measure, but some larger measure, as he says one quart of cream made 25 oz. to 27 oz. of butter) per day more than when they came, and that, too, of a much richer quality."

Again: "I am clearly of opinion that you can increase the proportion of butter in milk more than that of casein or other solid parts. Mr. T. Garnett, who has used bean-meal largely, tells me that when rape-cake is substituted his dairymaid, without being informed, perceives the change from the increased richness of the milk."—Page 387.

Mr. Horsfall had, at different times, samples of milk and butter, as well as different kinds of feed used by him, analyzed, so that he knew exactly the quality of the food that he was using, as well as the quality of the produce of his cows, of which he made periodical weighings, so as to know the gain made in live weight.

He concludes his work by saying: "These results are important, and completely establish the conclusion I had previously formed, that the quantity and quality of butter depends essentially on the food and treatment; and that by suitable means you can produce as much and as rich butter in winter as in summer."

Mr. Horsfall was undoubtedly ahead of the times in which he lived and conducted his experiments, about which there was certainly no guesswork. He was even ahead of the majority of the dairymen of the present day, for how few are they who can say as he said, "that they can make as much and as rich butter in winter as in summer."

ROBERT ASHBURNER.

Baden, San Mateo Co., Feb. 23, 1894.

THE STABLE.

Horses and Cows on a Fruit Farm.

An essay by D. Edson Smith of Santa Ana, read at the last meeting of the Southern California Farmers' Institute.

The committee on programme asked me to present at this meeting my views on the economical methods of keeping a horse—or horses—and cow on small ranches. I presume they meant on small fruit ranches, for there the problem is more difficult of solution. The best I can do in this line is simply to give my personal experience in the matter, for were I to begin again I should do the same.

The problem as I understand it is: Having a small ranch newly and almost, or quite entirely, set out to fruit trees, and no bank account with which to buy horse and cow feed while the trees are growing into profitable bearing, how shall food be provided for the horse—or horses—and cow?

I would like to preface my remarks with the sayings that "there are cows and cows" and "there are horses and horses"—that is, you may have two cows giving equal amounts of milk, but one will require but half the amount of feed during the year that the other does. And so you may have two horses doing equal amounts of work during the year, yet one will consume only about half the amount of feed as compared with the other.

There is a great difference of economy in animal machines as well as in mechanical ones; and it is cheaper always to buy the best.

I set out all of my ten acres to trees except half an acre which I sowed to alfalfa, after subsoiling and thoroughly pulverizing the ground. I sowed 15 pounds of seed on the half acre of ground; but I could not expect a great deal of feed from this ground until the second year, so I sowed an acre of ground in one corner to barley and set out 27 soft-shell walnut trees on this acre. I kept the ground for several feet on all sides of the trees well softened with hoe and shovel, and free from the barley. The ground was so well prepared that the acre of barley yielded me over four tons of feed.

Then between a few rows of apricot trees, which were 24 feet apart, I planted beets, sowing four rows three feet

apart between two rows of trees. These rows were 40 rods long. It is simply surprising to one who has never tried it how much feed can be produced from eight rows of beets, 40 rods long, under a high state of cultivation.

Where one has but a small acreage, he can afford to give very deep and most thorough culture to everything grown. Beets have been my chief cow feed the year round for the past ten years; and on this feed I estimate that my Jersey cow has brought me in about \$100 each year.

Beets sown in January will be ready to feed in May, and will remain in good condition for a year. When the beets are ready for feeding, I stake the cow in the morning at one end of the beet rows, with staking chain shortened so that she cannot aid in trimming my trees, for I have always found that cows lacked good judgment in trimming trees. I have a large, strong box made of inch and a half plank, in which I put the beets for the cow to eat. Simply pull the beets from the ground, knock off the dirt, throw them into the box, and the cow will do the rest.

At night when I bring the cow to the stable to be milked I give her a few quarts of equal parts of bran and rolled barley, moderately wet with water. I also allow her to eat either alfalfa or barley hay for half an hour, and then return her to the beet patch. In the morning repeat the evening feed. I only feed each time the amount of beets that she will eat up clean.

Where one raises beans or peanuts between the rows of trees, the bean and peanut straw can be substituted for the alfalfa or barley. For a few years I also raised pumpkins between several tree rows; and then the night feed would be pumpkins instead of beets. I have also raised more or less melons, and have found that any that would not readily sell would make excellent feed for both cow and horse. There is nothing they are more fond of than watermelons. A limited amount of carrots is also excellent feed to raise on a small acreage. A portion of the cow's butter can be readily exchanged for the bran and rolled barley that is fed at milking time if the value of the manure does not compensate for that outlay.

I think it better to cut the grass on the alfalfa patch—if you have one—than to feed it off. Since my trees have come into profitable bearing, I have thought it better to plow up my alfalfa patch and put the ground in trees or berries and buy what alfalfa or barley hay I need to supplement the beets. But the beets remain the chief cow feed.

While I have fed many tons of beets, melons and pumpkins during the past ten years to my horses, still I fed them a larger proportion of either alfalfa or barley hay. I have always grown more or less barley between my walnut trees, and have fed rolled barley to my horses when at hard work. It is also surprising how much a horse can be kept on an acre of beets. The beets for the horses are drawn from the field on a sled and thrown into boxes or mangers to be eaten. Never are they cut in any way for either horse, cow or chicken. Tops and roots are entirely devoured by all.

I have never had any difficulty in getting any of my stock to eat beets, pumpkins or melons without any preparation, excepting that I remove most of the seeds from the pumpkins.

One of my nearest neighbors has kept two or three horses and a cow on a small acreage for the past ten years without paying scarcely a dollar for feed. He has kept a much larger alfalfa patch than I, which he has staked off instead of cut off; and he has raised but very few beets and many more pumpkins than I, but I think my horses have been in much better condition at all times for service than his, and that my cow has given me much greater money returns by my method of feeding. However, our two little ranches show conclusively that a cow and horses can be kept quite economically on a small fruit ranch.

I have tried a good many varieties of beets, and have found nothing quite equal to the Golden Tankard unless it be the Giant Tankard, a new variety which promises to surpass the Golden Tankard in some respects.

Of course, where all the ground is cropped so heavily, care must be taken to return to the soil, in the shape of manure, as much plant food as you take out of it. If every bit of the manure from a cow and two horses is fully utilized, it will fertilize the soil around a good many trees in the course of 365 days.

THE APIARY.

Beekeeping in California.

In our report of the recent Los Angeles convention of beekeepers we alluded to an essay by Prof. A. J. Cooke, the well known authority on apiary matters, who is now a resident of Claremont, Los Angeles county. The following is the very interesting document:

It is rare for any single State of our Republic to excel in more than one desirable peculiarity. To distance other States in their important characteristics would be cause for loud acclaim. What great glory then for this wonderful State of California that she outstrips all other States in four important particulars. Her mining possibilities, if not her actual resources in that line, stand in the lead; her salubrity, which must ever make her the most sought after of all our American commonwealths, is surely unparalleled on this continent, if not in the whole world. As a fruit State she is certainly unrivalled—and last, she knows no peer as a beekeeping country. While in actual cash product this last does not rank with the output of the mines, or the receipts from the orchards, yet I feel free to state that in real importance this apiarian industry stands well up among the other pursuits. We need offer no apology, then, for any effort that we make or any enthusiasm we may show, in the direction of fostering the beekeeping industry by advancing the general knowledge of beekeeping, or essaying to bring into general practice the very best methods known to the craft. Nor should we

be slow in working for investigation that would confirm all of the great importance of this industry, and would secure in our midst the general adoption of even better methods of management than are yet known or practiced by even the leaders among apiarists.

I am told that at the recent great exhibition at the wonderful White City, the Empire State, through her able and wide-awake representatives, claimed a first place in apiculture; not only in the actual product, but also in advancement and possibilities. Far be it from me to wish to decry New York's well earned reputation and position as a leader in apiculture. Vermont, New York, Michigan, Ohio, Indiana, Illinois, Wisconsin and Iowa—and I might add many others to the list—may well be proud of their achievements in apiculture, and possibly may have advanced further in real skill and possibly in actual product, than has California. But I am quite convinced that in possibilities California will distance them all. One of the best informed and most skillful beekeepers of this State, formerly of the Empire State, where he was an acknowledged leader in apicultural skill and practice, said to me within a few days that he considered California as ahead of all other States in the inducements she offers to the beekeeping industry.

In all the Eastern States disastrous wintering comes more than occasionally to blight the hopes and the prospects of the beekeeping public. Often the entire apiary is swept off as by fire, and only the most advanced and experienced beekeepers escape. This arch enemy, which, like Banquo's ghost, "will not down" in the otherwise favored East, can never gain any foothold in California. Her genial climate and warm sunshine, even in the months of shortest days, securely locks the door in its very face. Again, since the linden forests of the East are being ruthlessly destroyed, and the clover root borer is mowing the clover down over large areas, the business of honey production is becoming very precarious. Three, and in some cases four, successive years of failure have cast a thick cloud over this important industry. In many localities where formerly the success in honey production was marked, if not phenomenal, there has had to be feeding on an extensive scale to save the bees, and that for two or even three years in succession.

The great native honey plant of the East, the linden, which formerly helped to form grand forests, is comparatively a thing of the past; and the remaining forests are rapidly falling in the greed of man for wealth. The other great honey plant—white clover—is of late fitful as a honey producer, and is also endangered by a serious insect pest, the clover root borer. In the East, too, 100 pounds per colony is a wonderful production, even in the very best seasons.

In the more favored clime of California, where the honey plants are indigenous, and of no value in commerce, and where they crowd the mountain gorges and ravines, there is no danger of their removal. Their best, if not their only use, is to furnish nectar for the bees. Thus in California we stand in little or no danger of ruin to the beekeeper's business. The white and black sage are natives, and have grown up with all surrounding enemies, and have so developed strength to hold the fort in the great struggle for life, that California's nectar fountains are little likely to dry up. Again, they are so bountiful in their offerings that 300 pounds of honey per colony—and even 500 pounds—are recorded. If I am rightly informed, these enormous yields come, on the average, as often as once in three years, and thus equal the banner localities of the East at their very best. More than this, one of the beekeepers of southern California, who has had years of experience, tells me that he has never had to feed to save his bees; that nearly every year they have paid expenses, and that oftener than once in three years he has had enormous production. Thus we see that California, by actual accomplishment, proves her right to stand at the very front as a beekeeping locality.

If I have in any way misrepresented in these statements, or unduly praised this favored region, I hope in the discussion following this paper that I may be corrected and the exact facts stated.

Again, the important relation existing between honey production and fruit growing makes the business of beekeeping here a very important one, and makes it very desirable that this phase of the subject should be carefully investigated, that the exact truth may be known. The facts in the case should be scattered widely among the fruit-growers, that they may know and appreciate the value of bees in their business, and thus not stand in their own light by antagonizing a good friend.

It has been shown often that most of our fruits and vegetables depend upon insects for a full production of fruit. Perfect pollenization is necessary for a full production, and insects are necessary to full pollenization. I tried some very careful experiments in Michigan two years ago, with results that were very startling and suggestive. I enclosed an equal number of blossoms—just before any of them had opened—with fine gauze, on adjacent branches of apple, pear, cherry, plum, quince, blackberry, raspberry, and strawberry. To one set of these blossoms after they opened, the bees were given access, while bees were wholly excluded from the others. After the blossoms withered the gauze was removed. The fruit was watched carefully and the productiveness noted. In every case where the bees freely visited the flowers there was a large and exceedingly abundant production of perfect fruit, while, with the exception of the strawberries, there was a marked lack in all the others; they ranged from no fruit at all to a very meager production. The strawberries seemed to do as well when the bees were excluded as when they had access to the flowers. In this case the gauze did not wholly cover the plants, but the ground underneath would prevent subterranean insects from visiting the plants or flowers. I do not know whether or not this had any influence in the exceptional results. It might be asked why any fruit was secured if pollenization by insects is essential? I cannot explain this positively. Possibly pollenization by insects is not necessary in all cases, but that it is necessary to full

fruitage these experiments and others by Darwin, Gray, Beal, etc., do fully prove. There can be no doubt but that we must have pollenization by insects if we are to secure full crops of fruit in orchard and gardens.

In the East we must have the bees, as other insects are too few and far between at the early season of fruit bloom. It is presumable that the same is true here, yet careful experiments should be instituted at once, that we may positively know the exact facts in the case. Are any of our fruits of southern California dependent on bees for full fructification, and if so, what? These are questions that the beekeepers deserve to have determined, and it is even more important to the fruit men that these points be accurately settled.

I note that at the recent pomological convention in this city some of the fruit men argued that bees were necessary in the orchards. Mr. E. A. Gammin, on the Sacramento river, who produces from \$12,000 to \$16,000 worth of fruit—pears, cherries, plums and apricots—annually, has noticed for some years that not a little of the fruit on his trees fails to set. He sent some of this to the distinguished horticulturist, Professor L. H. Bailey of Cornell University, who informed him that insufficient pollenization was the cause of the failure. Mr. Gammin has secured a large apiary, which will be placed close beside his orchard, purposely to perform this service.

There is little doubt but that the apiarist and pomologist can be of great reciprocal benefit to each other in this direction. The fruit is imported here, and very likely the best success demands that the bees be also present. Surely this matter should be settled, and if the facts warrant the above conclusions, as they almost surely will, then the facts should be widely published, that these two industries, which succeed so admirably in this locality, may dwell side by side in the most perfect harmony. Thus while beekeeper and fruit-grower are alike engaged in the most lovable work of producing delicious and valuable products, they are at the same time helping each other.

Of course, it may be true that in places where raisins and other fruits are dried the bees may cause some annoyance. In such cases both parties must be patient and work to make the evil as light as possible. If the fruit man is made to see that the bees are helpful, then half the battle is won. He will be willing to bear some annoyance, as he is conscious of the benefit he derives.

I fully believe that in time there will be mutual recognition on the part of both beekeepers and fruit men of the value of each to the other, and then each will appreciate the other; in lieu of prejudice or ill will there will exist the heartiest friendship, and each will rejoice in the others work and success; there will exist between them, as there should always between workers in any useful field, the best fellowship and most heartfelt sympathy.

SWINE YARD.

Wheat-Fed Pork in Oregon.

The Oregon Experiment Station has just published the results of an experiment in fattening pigs on wheat, which will interest many of our readers. The report is by Prof. S. T. French, and the experiment was undertaken with a view of establishing, if possible, the fact that pork can be successfully and profitably produced on the farms of Oregon, without the aid of corn. Where corn can be grown, as in some of the southern counties of the State, it will continue to be one of the chief food materials for fattening swine; but over a large portion of the State, it will never become of great importance in this work, owing to climatic conditions which hinder its growth and maturity. The results are such as to dispel all doubts from the minds of those who have thought that wheat could not be made to produce pork, equal in quality to corn-fed pork.

Prof. French remarks that the lean meat was very juicy, and light in color, which characteristic has marked all of the results in feeding wheat to pigs, thus far carried on at the station. In the rate of gain produced, the results will compare favorably with those obtained from feeding corn. By referring to the table, showing results by periods, it is seen that during the first period it required a larger amount of grain to produce a pound of gain in lot 1 than in lot 2, and this is the only period during which this is true. It was very noticeable also that the pigs did not enjoy the pure chopped oats, which were fed at first before the regular wheat feed began. The pigs do not like the coarse hulls which are present in such abundance in chopped oats. During the second period chopped wheat was substituted for the oats, and there is a much better showing in favor of this material.

During this period there was $13\frac{1}{2}$ pounds of gain for each bushel of wheat consumed. This is a significant fact to those who are discussing the practicability of feeding wheat to pigs instead of selling at present prices. During the third period there was a slight increase in the amount of food required to make a pound of gain in lot 1; but a still larger increase is required in case of the mixture. In this experiment the mixture has not given as good results as they had been led to expect from published reports of similar work. Our conclusion from present experience would be that, unless we can substitute a cheaper substance for a portion of the ration, a mixture is not especially desirable in fattening pigs.

During the fourth period the difference is still greater in favor of the chopped wheat. Lot 2 made very small gains during the last period. The pigs in this lot had passed the point of profitable feeding at the end of the third period. They did not get about as well as those in lot 1 after this time. Had they been slaughtered at the end of this period there would have been less difference in favor of the wheat in the amount of food required to make a pound of gain. Taking an average of the several periods we find that it

required 5.02 pounds of grain to make a pound of gain in lot 1, and 6.12 pounds in lot 2.

In round numbers lot 1 consumed $2447\frac{1}{2}$ pounds of grain, at a cost of \$19.41, or 3.9 cents for each pound of gain in live weight. In this case wheat was valued at 45 cents per bushel, the price paid at the time of threshing the grain. Oats were reckoned at 36 cents per bushel.

Lot 2 consumed 2325 pounds of grain, which figures the same as in lot 1, \$19.41, or 4.66 cents for each pound of gain in live weight. The latter increase per pound is due to a smaller total gain in live weight. Wheat and oats were figured at the same price as in lot 1; and the bran at 75 cents per cwt., and shorts at 90 cents. These prices make the by-products, bran and shorts cost more than wheat, which is the case at the present time.

As to the profits, lot 1 makes a very good showing; and there is no less in lot 2, at a cost of 4.66 cents per pound of gain, with pork at 5 cents gross. With the small percentage of shrinkage the profits were materially increased by dressing and selling at 6½ cents, which was easily obtained at the time of slaughtering.

The quality of the meat was all that could be desired in fat pork. There was a good thickness of fat, and at the same time a good distribution of lean meat. The meat was pronounced excellent by all who tested it.

The pigs were only 11 months old at the time of slaughtering. In lot 1, they made an average gain of 1.4 pounds per day from birth, while those in lot 2 made 1.3 from birth.

Previous to the experimental feeding, the pigs were fed slops from the kitchen with a few shorts added. No effort was made to crowd them, but simply to keep up a healthy and vigorous growth. The pigs were not permitted to run to pasture at any time. Small yards, in which the pigs can get to the ground, were connected with the pens. The pigs were fed twice each day—at eight in the morning and five in the evening. Each ration was weighed out and allowed to soak until the time for the next feed. A handful of salt was added to each feed. Charcoal was given to them, as they required a shovelful twice a week.

The breed of pigs used in this feeding test was a cross of the Poland China and Berkshire, with the Berkshire predominating. The pigs were purchased for the experiment, and no definite knowledge could be ascertained as to their exact breeding. They were taken from a litter of nine, and, at the beginning of the experimental feeding, were very uniform in size.

FRUIT MARKETING.

California Summer Fruits in Chicago.

This is a trite subject, and yet it is one which, in the nature of things, will have fresh interest for California growers, because the great western distributing point holds the key to our prosperity, as things now are. A competent observer who spent the summer and had good opportunities for important observations was A. Warren Robinson of Napa. At a recent meeting of the Napa fruit-growers, Mr. Robinson read a paper from which we take the following:

If my memory serves me aright, the first deciduous fruits of the season that appeared in the Chicago market last summer came from Texas and Alabama. Fruits of the earlier varieties arrived from these States two or three weeks before like varieties from California put in an appearance, and then much of the latter was far from being ripe and palatable. Many fruit-shippers were in too great a hurry to get their fruits to market, but, after all, so fruit hungry were those large crowds early in the season that almost anything in the shape of fruit sold at good prices on the fair grounds, down town, here, there and everywhere.

Greater efforts than have heretofore been made by orchardists in some of the Southern States will hereafter be exerted to send their early fruits to Chicago, their facilities for doing so being excellent. Of course, it is desirable for fruit-growers in this State to get their product to market as early as possible, but Alabama and Texas seem to have the advantage of us in this respect. But we have little to fear in that direction, for the amount they now send is comparatively trifling. However, I was told by prominent horticulturists of Alabama and Georgia that increased attention would be given to this pursuit in the States named, in the future. But, at the same time, I was also informed that, generally speaking, there was not enough push, energy and enterprise there among the farming class to enable them to cut any figure in this matter.

I do not remember of seeing any fruit from Napa during the last summer, among the thousands of packages that came under my observation. You must understand that the whole output of this county would be but as a drop in the ocean in that large city of over two million people.

California Cherries were unmistakably the best seen in the Chicago market last summer, and must be every season. They were generally put up in good shape, in attractive packages, and readily sold at paying figures; that is, from the fruit stands. Of these there were thousands.

The different varieties of this fruit raised in this State cannot be duplicated in the Eastern markets, so far as shipping quality, taste and attractiveness is concerned. So far as my observation went, this fruit coming from our State was well packed, which remark cannot be applied to many other varieties sent to Chicago last season. Cherries were the first fruit from this State I recollect seeing in the Chicago market last summer. John Rock of San Jose forwarded to the California building one consignment of 20 varieties, the best raised in this State. This lot the writer opened and exposed for exhibition in the horticultural building. The fruit was about two weeks on the road, if I remember aright, and one had an excellent opportunity of comparing the shipping qualities of the different varieties. This is one of the principal things to be taken into account

in raising this fruit for the Eastern market, as you well know.

As might be expected, the Bigarreus led. They bear transportation long distances better than many other kinds. Napoleon, Schmidt's and Rockport came to hand in the best condition. Ludwig and Black, better than Cleveland. The Centennial proved, without doubt, the best shipper. Eastern fruit experts, who had never before seen this cherry, marveled at its size, firmness, color and general appearance. I think there were more Black Tartarians sold in Chicago last summer than any other one variety of cherries. They are very popular. They came through in fair order.

Ten was the standard of perfection adopted by the judges of fruit at the fair, and the last named cherries were placed at nine, Belle d'Orleans four, May Duke five, Early Rivers six. Coe's Transparent, while not a good shipping cherry, being too tender, has a delicious flavor and was given a ten rating on that account. Gov. Woods five, Burr's Seedling seven, Pontiac nine. Later in the season Oregon sent in some fine cherries, but I knew of Oregonians selling California fruit as coming from their State. They were too impatient for theirs to ripen. Although this might have been construed as a compliment for California, we were not pleased with it.

I regret that I did not preserve quotations of California cherries during their season. When they first arrived I remember of pricing them at street fruit stands, the figures being from 20 to 25 cents per pound. June 1st Chicago papers quoted cherries at \$2.25 and \$3 per case of 24 quarts, but whether these were from this State or from southern Illinois I cannot say. July 29th the figures were \$1.50 to \$1.75 per case of 16 quarts. About the same in the month of August.

Peaches.—With the exception of Early Crawford peaches and possibly one or two other varieties, our freestone peaches made a poor showing, but, nevertheless, everything in this line sold. On account of their better shipping qualities Clings sold in larger quantities and the amount of Orange Clings worked off was prodigious. I think the best California peaches I saw came from Placer and Kern counties. Twenty-two inches in circumference was the largest Orange Cling reported from the last named county.

A large, well-colored peach sells readily in the Chicago market, but there were large quantities disposed of, which, at home, we could call refuse; hardly fit for drying.

Late in the season Missouri sent in some excellent peaches for exhibition, but one saw few of them on the street fruit stands. They fully equalled, in appearance, those on the California tables. But there were but few varieties and they did not last long. There is but a small section of that State adapted to this and similar fruits.

In September California peaches sold for the following prices. These are figures at Porter Bros.' establishment, where we bought hundreds of different varieties of California fruit in July, August and September. The firm named purchased them at auction, daily, showing me their figures, or what purported to be their figures and generally we got the fruit at an advance of from 5 to 15 cents per box over first cost. The same remarks apply to other prices herein quoted. Peaches: White Cling, \$1 per box; Orange Cling, \$1.30; Late Crawford, \$1.30; McKeivitt's Cling, \$1.25; Salways, \$1.35; Susquehanna, \$1.30. Prices would vary little from day to day, according to the supply and demand.

The Greatest Fluctuation of fruit of any kind was on Bartlett pears. Of this fruit enormous quantities were sold all over the city, often at very low figures, the street vendors giving at one time, from five to ten for ten cents. The market reports show that on August 23d prices were from 55 cents to \$1 per box; September 15th, 90c to \$1.25; September 20th, \$1.50 to \$1.85.

A very large proportion of Bartletts received were small ill-shaped, and of second or third grade. I came to the conclusion that Bartlett pears were a failure in our State last season for, opening scores of boxes, I found less than a half dozen that were anywhere near first-class.

Hardy's came in good shape and were of excellent quality, better eating but not so attractive to the eye as B. Clairgeau. We had some fine Winter Nelis and a few other varieties. Our Pound pears on exhibition were wonders and visitors in our department would hold their breath as they caught a glimpse of them. Specimens weighing seven pounds were sent East. Chicago and her millions of visitors feasted for awhile on our California pears, especially Bartletts, but their day soon passed. I paid in September at various dates \$1.75, \$1.85, \$2.35 for Bartletts, and \$1.50 for Clairgeaus and Hardy.

Apricots.—The finest apricots that came to hand were the St. Ambrose and the Blenheim and Mammoth. I never have seen their equals here at home. Their size, color and flavor was a revelation to many a visitor. A large proportion of eastern people do not know an apricot when they see it, classing it with the peach. The same may be said of nectarines. But the amount of this latter named fruit sent East is very small. They sold from 75c to \$1 per box.

The firmer, large, well-colored grapes from California sold the best. Flaming Tokay, Muscat and Malagas led. One day I paid \$3.50 for a box of Flaming Tokays, but they were extra, as you may imagine. It was their color that sold them. Generally they brought from \$1 to \$1.75 per box. But there are many eastern people who do not fancy our grapes. They seem to think that a grape without a firm pulp, like that of the Catawba or the Isabella, is not worth eating. They think they must swallow the skins of our grapes, because they do not slip off the pulp as readily as from off the American varieties. I used to think the Malagas were about the best eating grapes we received from this State. At one time there were one hundred varieties of California grapes on our exhibition tables.

Plums.—Plums followed cherries in large supply until late in the season. This fruit coming from Illinois or neighboring States was small, being for the greater part of the Wild Goose varieties, looking very inferior by the side of ours. Yet they seemed to be highly esteemed by eastern

people and we Californians smiled at their ignorance. When, later in the season, our plums came on in large variety and quantity their astonishment was great. The large size of several varieties, their exquisite bloom and the splendid flavor of some kinds elicited much favorable comment. But in the early part of the season many plums arrived far from being ripe. They were green and very acid. Many growers were in too great a hurry to get their fruit into market. Frequently people would say: "Why don't your plums and peaches have a better flavor?" When told that the fruit had to be picked a week or more before it was ripe in order to stand transportation 2000 miles they were sometimes convinced, but not always, that the flavor of our fruits equalled their own.

Not many Green Gage plums were seen. Columbias, Duane's Purple, Bradshaws and Washingtons were popular. I know that Kelsey Japans, Yellow Eggs and Silver prune—for we will class prunes with plums here, as a number of varieties were sold for plums and were eaten out of hand—when well ripened, were revelations to many who were not acquainted with them. Very many Kelseys were small and not well colored, but some came under my care that were of good size, well colored and of excellent flavor. The Yellow Egg plum, when of good size, sold on sight. One of the judges of our fruits, the President of the Alabama State Horticultural Society, pronounced the splendid samples of Silver prune on our tables the finest fruit of the plum family he had ever tasted. Other judges were of the same opinion.

The Blood plum of Satsuma, and the *Prunus Simonii* were excellent. Larger quantities of the Gross, or Hungarian, prune were sold throughout the city than any other kind, probably, their size and color creating the large demand. Fellenbergs and Tragedys were well represented. I would place *Prunus Simonii*, Kelsey Japan and Yellow Egg plums and the Gross and Silver prunes at the head of the list of good marketable fresh plums and prunes. I did not see any Clyman plums. [But they sold well.—ED.]

Our Apple Exhibit was, unfortunately, a failure. It is generally thought in the East that we cannot raise good apples here. We know we can, and excellent ones. One thing is certain, the finest quality of dried apples to be found in Eastern markets come from this State. Right here I might say that a member of a Chicago house that has for years handled dried fruits, told me that slowly, but surely, our dried prunes and our raisins were crowding out those from France and Spain.

Business men from different countries of Europe, from Australia and New South Wales, pronounced our dried fruits wonderfully fine.

In Conclusion.—In the matter of fruit, Chicago would have fared slim last season had it not been for California. From 10 to 15, or more, carloads of our product were sold every day and scattered throughout the city and to a considerable distance outside. There has been for the last two years a failure, or partial failure, of fruit crops in the upper Mississippi valley and in States farther east, especially in apples, the main standby of that section. It is impossible to raise plums in the East on account of the ravages of the curculio and the black knot, and orchardists have well nigh given up trying, so I was informed. The peaches raised in Illinois and neighboring States looked small, as a general thing, and more or less covered with a fungus growth. New Jersey, Delaware and Alabama sent some fine peaches to the fair, and we must not omit Missouri.

But, for the above-named reasons, many Eastern horticulturists are looking for other sections in which to locate. Statistics often quoted were to the effect that in Illinois there are 30,000 acres of orchard, and yet to make out her display that State had to place on her tables apples of 1891, they having been kept in cold storage. More attention will hereafter be paid to fruit raising in Alabama, and possibly Louisiana, than in years gone by, and many interested in this business are turning their eyes toward California. There is a vast amount of country east of the Sierras to be supplied, and an enormous quantity of fruit will be required to go around. Thousands of people in the East have never tasted our fruits.

Things to Consider.—The California fruit-grower must take several things into consideration, viz.: The best varieties for shipping to Eastern markets. Size, color and quality may be named as three important items. Then comes careful packing in attractive packages. There is no use to ignore the fact that very often fruit sells when it appeals to the eye, even if it does not to the taste. I am quite sure that all our Napa fruit-shippers take great pains in packing their fruit attractively and honestly. Very much fruit of all kinds goes from this State to the Eastern market dishonestly packed. It is a shame. The writer opened scores of boxes last summer in Chicago in which the first layers presented an attractive appearance; those beneath grew smaller and poorer as one layer after another was removed till, at the bottom, scrubs would be found. When will fruit-packers realize that to "deacon" fruit will not pay? Any one who does this cheats himself and swindles the purchaser. Honesty in this matter is the best policy, as well as in every other.

Then comes the matter of transportation. Many consignments of fruit from California to Chicago were days, and sometimes over a week, behind time last summer. Some fruit was worthless when it arrived—a dead loss to the shipper.

Then there is the consignee. Aye! there's the rub. It would be extremely difficult to convince all our fruit-shippers that those to whom they have shipped in the past, in the East, are honest and thoroughly reliable. The method of disposing of much of the California fruit in the Chicago market auction houses is, like Bret Harte's heathen Chinese, "very peculiar."

Fruit carefully selected, well packed and attractively labeled ought to sell well in any Eastern market, if rapidly transported. If it does not there's a "nigger in the fence" somewhere. It behooves our fruit-growers, having their past experience in mind, to inaugurate some other method of marketing their product. "Protection" in this matter, as in many others, is better than "free trade."

State Horticultural Society.

(Continued from page 164.)

or if the dusting were done in the early morning before the dew was dissipated. Any time after the leaves are out and the bugs are there, is a good time to apply the sulphur.

Prof. Wickson said that it was usually a good deal easier to examine the egg clusters than to prospect for the insects themselves, though there was no trouble about finding them after they had gotten a little start. The eggs are a beautiful ruby color and after hatching there is left a transparent, colorless shell. If in any egg cluster there should be found some of these shells it would surely indicate that the process of hatching was going on.

Judge Tilden asked if sulphur would clean trees of black smut, to which Mr. Lelong replied that it would be useful, though it was not a sure cure. Mr. Lelong explained that the black smut was due to the presence of the scale which he thought would soon be eaten out by the new parasitic bug just now being introduced through the agency of the State Board of Horticulture.

Mr. Hatch said that he was so entirely convinced of the value of sulphur dusting that he intended to apply it to all his trees regardless of their condition. It was his experience that it helped even trees to all appearances healthy, assisting them to resist contagion and to a better growth and higher fruitfulness.

Mr. Rock said that he found it best to apply the sulphur when a light wind was blowing, as it bore the dust in a cloud among the trees. When there was no wind, much of it settled to the ground and was lost. His experience with the Ditzler device was that it made the sulphur go much further than by the old hand method. He could not say how much was required for a tree, because in the Hatch & Rock orchard, where he had used it, they bought it by the ton.

Prof. Allen said that he had applied it by attaching a bag of sulphur to the end of a pole and shaking it over and through the tree, though this was certainly a very expensive method, both in the quantity of labor and of sulphur required.

THE PERKINS PROCESS.

MR. PERKINS EXPLAINS ITS PRINCIPLE AND DISPLAYS SOME FRUIT PRESERVED NEARLY THREE YEARS AND STILL FRESH.

The discussion above detailed was followed by an address from Mr. A. T. Perkins in explanation of his process for preserving ripe fruit in transit. This process has recently been described in the *RURAL*, and it is therefore unnecessary to reproduce Mr. Perkins' explanations in full. The plan is to keep the fruit dry and cool, these conditions to be maintained under familiar natural laws by compression and expansion of the air. Mr. Perkins said that the extra weight of a car fitted for his process, would be within three tons, as against an extra weight of 15 or 16 tons in an ordinary refrigerator car. Mr. Perkins dwelt at length and with emphasis upon the advantages to be gained by getting our fruit ripe and fresh into the Eastern market, his remarks meeting with the fullest approval. He said that the experiments which he had conducted during the past several years had consumed every dollar he could spare; that he had a process in which he had perfect faith, but that he had no means to carry it to a practical demonstration.

Mr. Hatch followed, saying that, in his opinion, Mr. Perkins' process was a practical one, and that its adoption would make the difference between profit and loss for the shipper of California fresh fruits. It would take, so he was informed, somewhere from five to eight thousand dollars to test the matter practically, and he thought the fruit-growers ought to provide the money in the form of stock subscriptions. He had personally spent and lost \$11,000 in experimentation before refrigeration was demonstrated to be a success, and he thought no one man should be required to bear the brunt of putting this new process, which promises so much, upon its feet.

Prof. Allen bore testimony to the keeping qualities of fruit treated by the Perkins process. He said that certain California fruits having been carried in the ordinary way to Chicago during the fair and then subjected to the compressed-air treatment, "stood up" for three weeks on the exhibition tables in the California building during the fair. It kept much better than under refrigeration, and was, furthermore, of better appearance and flavor.

Mr. Rowley thought that only a very strong special company or a railroad company could introduce the process. The railroad company, he said, was directly interested in the company which supplies refrigerating cars, and, besides the profit from freight, made another profit from the refrigerating cars. He pointed out that in the north—Oregon—the railroads furnished refrigerator cars without extra charge. The prejudice against the new system here, he declared, would be a prejudice growing out of an interest in the business of supplying refrigerator cars.

Mr. Hatch said that he did not complain that railroad rates were too high; he knew, as a matter of fact, that they were cheaper than elsewhere in the United States. He thought it the duty of the railroad not to reduce rates, but assist in experimenting and in other ways to help those who shipped with them.

Here the discussion came to an abrupt end. Nothing was done toward putting the Perkins process in the way of practical test. Mr. Perkins explained that he would not sell it; if there was anything in it, he wanted a share of the benefit; if there was nothing in it, he didn't want to take anybody's money for nothing.

FRUIT MARKETING.

MESSRS. HATCH AND ALLEN ATTACK THE CHICAGO AUCTION SYSTEM AND MR. ROWLEY DEFENDS IT.

The next subject discussed was the marketing system. Prof. Allen started the ball to rolling by giving the results of his observations in the Chicago auction rooms, where it seemed to him the fruit producer was at the mercy of the

dealers, who appeared practically to have it all their own way. He told how they apparently entered into collusion as to how much they should bid for certain lots, declaring that the only protection was certain by-bidders who were put on the floor by the consignees to prevent prices from being cut to nothing at all.

Mr. Hatch's observation was in line with that of Prof. Allen. The buyers, he said, before the fruit was offered, went about and apparently agreed among themselves as to the amounts that should be bid.

This brought Mr. Rowley of the *Fruit Grower* to his feet. The Chicago fruit dealer was not, he said, in business for his health or for the benefit of the California fruit producer. He had heard the statements just made often before, and he would like to know how it was possible for them to enter into collusion as alleged. He would like to hear the matter explained.

Mr. Hatch explained that the fruit was on exhibition in lots subject to inspection for two hours or more before the time of sale, and that the ring of buyers would agree upon who should have certain lots, and the price should be within a certain figure agreed upon. In this way, prices for the first lots were kept down and the bulk of a carload would be sold in a lump to some low bidder who would divide his purchase with his confederates.

Mr. Rowley replied that he had attended the Chicago auctions and thought that the bidding was in the dark—that is, that it could not be known to the bidder who his competitors were. He didn't think it possible that all the bidders could be in collusion, and a few independent bidders would spoil any such game as that outlined by Messrs. Hatch and Allen. He didn't believe the Greeks and Dagos who were, largely speaking, the auction buyers, would trust each other enough to carry out such a plan as Mr. Hatch suggested. We had, he said, in our own State seen the difficulties of organization for special purposes in the fruit trade. The packers and canners in this city had tried repeatedly to organize, but had never succeeded in doing it, and he didn't see how a lot of fruit buyers at Chicago could do it.

Mr. Hatch remarked that Mr. Rowley ought to know that somehow the buyers had contrived to come together in an Association that we had all heard of.

Mr. Rowley said that the purposes of the Fruit Buyers' Association were very different from those described as being practiced in the auction-room. He didn't believe the matter charged could in fact be done, because it was against human nature.

General Talk.—From this on the talk became general. Prof. Allen gave the results of his observation in the Chicago market, recommending the Burbank, Simon, Clyman and Kelsey plums and the Seckel pear as good sellers.

In answer to a question, Mr. Lelong said that the Satsuma plum was a delicious fruit, but that its dull exterior and colored flesh made it a poor seller in markets where it was not known.

Prof. Allen said that this statement was borne out by his observation at Chicago.

Responding to a question, Mr. Hatch said that at his Solano place the Simon plum was rich in color with a fine perfume, and that his shipments to the Eastern market had brought fine returns—in one instance upwards of \$5 for crates of 20 lbs.

Mr. Morse, of the King-Morse Canning Co., was invited to say what was the prospect of canning this coming season; but he declined, remarking that he couldn't see any prospect.

Mr. Levinson, a spectator, remarked that Mr. J. K. Armsby had said to him that the dried product was bound to drive canned fruits out of all but the fancy market, whereupon Mr. Morse said that Armsby had made the same declaration in 1885, since when we had seen the best years of the canning trade.

Something having been said as to the profits of fruit-growing, Mr. Hatch remarked that at his Suisun place he had ten acres of prunes which for three years had yielded him four and one-half tons of dried fruit per acre. At three cents per pound, he said, this would be \$270 per acre; or, cut this in two—for not every orchard does so well—and you have \$135 per acre. Upon this basis he did not hesitate to say that prune-growing was profitable at 3 cents per lb. delivered in sacks on board the cars.

At 4 o'clock the session adjourned, after arranging subjects for next meeting as follows: "What is the Cost of Producing Fruit?" "At What Prices Can We Produce the Several Kinds of Fruit with Profit as Compared with Other Lines of Business?"

Death of the Inventor of the Concord Grape.

Ephraim Bull, the inventor of the Concord grape, recently died of old age and weakness at his home in Concord. Fifty years ago, says the Boston correspondent of the *Springfield Republican*, Mr. Bull came to Concord from Boston to better his health, and carry on his employment of gold beater. The Thoreaus were still making pencils or dealing in plumbago, at the other end of the village, when Mr. Bull set up his shop and planted his garden on the road to Lexington, and next door to the Alcott-Hawthorne grove and garden. He found outdoor life better for his weak chest than confinement to the shop, and so began to raise flowers and plant grape seeds to form a new variety out of the wild river grapes that were abundant in Concord and Bedford. In this he succeeded so well that before 1850 he had created the present Concord grape—perhaps the most widely planted of all species of the vine in the world. The new grape spread swiftly West and South, and found central New York, Ohio, Missouri and California specially suited to its culture. Concord was not, for only once in two or three years would the frost allow it to ripen so perfectly as it does every year in New York and Ohio. The Concord hills were planted with it, notwithstanding, and much money was made by the grape-growers in the years of high prices, say from 1860 to 1880.

THE HOME CIRCLE.

God Give Us Men.

God give us men! A time like this demands
Great hearts, strong minds, true faith and willing
hands—
Men whom the lust of office does not kill;
Men whom the spoils of office cannot buy;
Men who possess opinions and a will;
Men who have honor, men who will not lie,
For while the rabble, with their thumb-worn creeds,
Their large professions and their little deeds,
Wrangle in selfish strife—lo! Freedom weeps,
Wrong rules the land and waiting justice sleeps.
—Oliver Wendell Holmes.

A Dilemma.

My ideal girl has golden hair,
A downcast glance, a modest air,
Her eyes are blue and sweet and shy,
She knows no guile nor coquetry.

Her maiden heart, her soul serene,
In all her words and looks are seen;
The more I think of her, the more
All her perfections I adore.

If, for one hour, I could forget
The witch who has me in her net;
Whose dusky hair, whose saucy smile,
And gay caprice, my heart beguile.

She has each fault which I abhor—
She's not the girl I'm looking for—
A's! the more I disapprove,
The more I frown, the more I love!

—Vogue.

The Rotary Churn.

Well ding, my old buttons, if this don't beat all,
Me settin' up here with my face to the wall,
A jest a-rotatin' this lop-sided tank,
That, like most things in these days, is worked with
a crank—

This onery, new butter-making concern
That they've christened the patented rotary churn.

I've sot here an hour, jest turnin' it around,
With its wobbly motion an' futren-like sound;
I've watched it rotatin' and listened, by gosh,
To its swashity-swish an' its swishity-swash
Till my head's in a whirl, an' my tried ears yearn
For the flippity-flop of the old-fashioned churn.

It's the strangest contraption that ever I've seen,
An' they call it a great labor-savin' machine;
But I'm tired of workin' the dasted old thing
That jest keeps my hand goin' round in a ring,
An' I'm willin' to trade off its turnity-turn
For the up-and-down dash of the old-fashioned churn.

I hope I ain't wantin' in brotherly love,
But if ever I meet that inventor above,
I'd stand an' give three of the rousin'est cheers
To see him compelled for a few thousand years
Of eternity jest to work that dad-burn
Invention of his'n—the rotary churn.

Susie's Love Letters.



SUSIE CAMPBELL came back from the tailor's shop where she worked, and found a company of boys and girls congregated round the door-

step of the tall tenement house in which she rented one small, back room. They were hooting and jeering at a man seated in his shirt sleeves on the doorstep, placidly smoking a huge German porcelain pipe. The man did not seem in the least disturbed at their jeers and shrieks, but smoked on with his eyes fixed upon the one strip of sunset sky visible above the grimy roofs.

Susie pushed her way in.

"What's the matter?"

"Yah—Dutchy! I nt'e a blooming soft! Give a boy a shillin' to go and fetch 'm something to eat, and is witing 'ere for 'm! I nt'e a style! Wonder 'ow long he'll wite!"

"Who is he?"

"A blooming Dutchy! 'e carnt speak no English, 'e carnt—'as to make signs—and nobody 'ere carnt speak nothink else. I nt'e a softy!"

The girl paused, and looked at the man; there was something in his patient attitude that aroused her pity. Some softer remembrance of the days before she came to this great, wicked London came over her. The man's eyes, so blue, clear and bright, and the healthy tinge of his wholesome face smote her with a pang of recollection of the honest Scottish faces she had left with contempt for their content, when she had started forth to see life in London.

She went up to the man and signed to him to follow her indoors. She tried to make him understand that he had been robbed. The soft, gentle tones that answered her were quite unintelligible; he smiled, shrugged his shoulders, spread his hands, and looked at her with that calm trustfulness that one often sees in dogs and children.

She smiled, nodded, pointed up the stairs, and then ran out of the house. She returned with a loaf of bread and half a pound

of sausages for him, and a roll for herself; she would make that do; he was a stranger, alone and friendless.

She put the things in his hand, pointing down the street as if to indicate that she had brought the things from the boy. He seemed to understand, took her hand and raised it to his lips; the action was so grateful that she felt ashamed and ran up the stairs to her own room.

Her comfortless breakfast of a dry roll the next morning made her a little regretful of her charity the night before.

"He must shift for himself as I have to do," she thought, and went out to her day's work.

When she returned in the evening she found him standing outside his door. He bowed and smiled, opened his door, and showed his various purchases on his table. He had evidently found his way round to shops.

She went up stairs feeling the least bit disappointed that he did not require her help any more. He seemed different from the jaded, vulgar men and women she came in contact with in her city life. The air of the fields seemed to cling to him still. She thought as she toiled up the weary stairs how sweet the country must be looking now. Was the sun shining on the hills at home and making the waters of the loch sparkle—the bonnie hills that she would never see again? Friends were dead, and to a tailor's at 12 shillings a week it was indeed a far cry to Loch Awe.

Something was on her table, a little sketch of a sweep of wide hills, with fir forests clinging to their sides, a little cluster of houses with wide overhanging roofs and shutters to the windows. A figure was standing in the doorway of one of the houses.

"That is his house," said Susie to herself. "What a funny thing to do, to give me a picture of it! I wish I could send him one back of Loch Awe and our house up on the braes."

The next day was Sunday. She usually passed the morning in bed, tired out with her week's work. When she came down about the middle of the day she met him coming in, evidently in his Sunday best. Could he have been to church? Well, it was clear he had not learned the manners of Eureka Court yet.

She tried to express her thanks by looks and smiles. He seemed to understand, and laughed, and then she felt a quick touch of dismay that he glanced in surprise at her untidy dress and towzled hair. Susie did not tidy herself until afternoons; then in an enormous hat and feather, and much be-curl'd head, she perambulated the adjacent streets in company with girls of her acquaintance, not yet vicious, only ignorant, vain and craving for a little of that happiness which seems to all girls their birthright.

That same hair was in papers now—she blushed as she recalled the fact—her hands were grimy, her face unwashed. His eyes noted it.

They did not meet again during the week, but next Sunday morning found Susie with her hair out of papers and hands washed; she was loitering at the street corner when he came back in his spruce clothes. She gave him a pert nod; she felt annoyed with him for some unknown reason, and that same evening made herself as resplendent as possible in her cheap gaudy finery.

"He shall see that I can be smart, too," she thought, and tossed her head as he appeared.

He stopped, and drawing a notebook from his pocket, rapidly sketched a church front upon it. She shook her head. He looked puzzled; then his quick fingers drew the outside of one of the commonest type of meeting-house. She shook her head again, and moved off. Somehow she did not like to show him how she spent her Sunday evenings.

The weather became very hot. Susie drooped more and more in the unhealthy workroom and stuffy streets. He seemed to notice it, for on Saturday night she found a drawing of trees and a path and figures walking about, and underneath the figures 2:30. Could he be asking her to go for a walk? She waited to see.

At 2:30 a knock came at her door. There he was with his square, ugly, good-natured face smiling at her. She felt awkward going down stairs with him. What could they do during a whole walk if neither could speak to the other? But that walk did not take place. The smart tie around her neck had been the price of her dinner; she turned faint and reeled, then sat down on the stairs and burst into tears.

She hardly knew whether she was vexed or pleased to find herself picked up like a baby and carried up to her own room and laid upon her bed. She sat up and drank some water, while he stood looking per-

plexedly at her, and she blushed that he should see her untidy, disorderly room.

He went out, and in a few minutes she heard her door open and something pushed along the floor. It was a little jug of hot coffee and milk and a plate of German rolls.

The next day another picture was left. It represented a large workshop with men sitting at tables, all busily engaged over some mechanical work; underneath was written the figures 30s.

With skillful fingers she drew an outline of a waistcoat and a needle and thread and posted it at his door as she went out; but she had to come back again, she was so ill, and all day she lay there alone waiting for what was the only friendly signal in the world to her, the scrap of paper of the foreign artist.

She heard it pushed under the door at last, and feebly rose and groped for it. Her head was throbbing so that she could scarcely see that it contained a whole line of portraits—an elderly man and woman, and younger faces, among which was his own. His family, doubtless.

She made a rough outline of her hat, with a sharp oval for a face underneath. She was too ill to get it down to him. She pushed it out and trusted that he would fetch it. She heard him in the morning come up again, and then she heard no more, for the fever seized upon her, and when next she awoke to consciousness she was lying on a hospital bed. For days she was too weak to speak or think, but when she was able one of the nurses asked her if she would like to see some papers which had been brought to the hospital for her, and the nurse spread them out before her.

The first was of a man following a stretcher through the streets. Then the same man sitting alone in a solitary room with his head bowed upon his hand and weeping. The next, the same man at a door, evidently asking questions of a porter within. The next the man was beside a bed on which lay a deathlike figure.

"Has he been to see me?"

"Yes, it was when we thought you were dying he came every day, but we could not tell him anything, no one could speak his language, but at last we found it was Wendish from the borders of Saxony and Bohemia, and one of the doctors here got him a book in it by which he can study English. You will see by the sketches."

The next one represented the man with the book in his hand.

The next showed the man in a train and then on board a steamer, and then another train.

Susie dropped the papers.

"He is gone!" she said with a weak cry.

"Oh, why have I got any better?"

"There is another picture," said the nurse, and she unrolled it for the trembling girl.

The man had arrived at the little village Susie remembered in the first sketch, then the interior of a house was shown, a coffin lay in the middle of the room, an old woman, two girls, and three men knelt around it.

"His father is dead," said Susie, and she turned to the next. The man was at the hospital door.

"Oh, he is coming back!" she cried.

"See this is the last," said the nurse, and as she held it up she laughed. It was the man on one knee before a girl—Susie, in her outrageous hat; but there was in the sketch, up in the right-hand corner, as if it was yet in the distance, the same little village, with the pine forests around, two figures, the man and Susie, walking arm in arm up the village street.

The nurse held her sides for laughing.

"It's the funniest thing I ever saw in my life," she said.

Susie gathered her papers together with some dignity.

"I don't call it funny," she said. "I—I think it was the nicest thing that ever was done to any girl."

"My loofe!" said a voice at her side, and there was the man. Susie gave a little cry.

"My loofe!" said the man again; "it is my first Engleesh to you, and it will be my last. My loofe!"

And Susie, with all the dreams of her girlhood back upon her, put her arms around his neck, and sobbing, said: "And I don't even know your name, but I don't care for anything in the world but you."

A Political Novel.—"I always thought Mark Twain was a Democrat," said Hedge. "Well, isn't he?" asked Wedge. "I should say not. No sooner does the Wilson bill get introduced into Congress than he begins a story in one of the magazines, entitled, 'Pudd'nhead Wilson.' He'd better stick to funny stories, and let politics alone."—Ark. Traveler.

Sound Sense for Girls.

Right to the point is the following readable little article from the New York Sun: We all know the girl who writes: "I want to come to the city and earn my living; what chance have I?" She writes us from Timbucktoo and from the country town where we used to live ourselves. She can do "most anything, you know," from painting a plaque to writing editorials on the eccentricities of the tariff, and the town she was born and brought up in, where everybody calls her by her first name and likes her, where she has a sunny little room all to herself and a new gown whenever she cries for it, won't hold her any longer. Now here is an answer to that girl that a woman wrote who knew what she was talking about. There should be a special act of Congress passed providing that this letter should be printed, framed, and hung in every country school-house, every village seminary, every small city high school. The woman's name is Martha Everts Holden, and the ambitious girl of whom she writes had written to her:

"I felt like posting an immediate answer and saying, 'Stay where you are.' I didn't do it though, for I knew it would be useless. The girl is bound to come, and come she will. And she will drift into a third-rate boarding-house, than which if there is anything meaner let us pray. And if she is pretty she will have to carry herself like snow on high hills to avoid contamination. If she is confiding and innocent the fate of that highly persecuted heroine of old-fashioned romance, Clarissa Harlowe, is before her. If she is homely the doors of opportunity are firmly closed against her. If she is smart she will perhaps succeed in earning enough money to pay her board bill and have sufficient left over to indulge in the maddening extravagance of an occasional paper of pins or a ball of tape. What if, after hard labor and repeated failure, she does secure something like success? No sooner will she do so than up will step some dapper youth who will beckon her over the border into the land where troubles just begin. She won't know how to sew or bake or make good coffee, for such arts are liable to be overlooked when a girl makes a career for herself; and so love will gallop away over the hills like a riderless steed and happiness will flare like a light on a windy night.

"Oh! no, my little country maid, stay where you are if you have a home and friends. Be content with fishing for trout in the brook, rather than cruising a stormy ocean for whales. A great city is a cruel place for young lives. It takes them as the cider press takes juicy apples, sun kissed and flavored with the breath of the hill, and crushes them into pulp. There is a spoonful of juice in each apple, but cider is cheap. The girl of whose success you read is, nine cases out of ten, the girl with a friend at court who gives her the opportunity to show what she can do. Without such a friend the path of the lone girl in a great city is a briery, uphill track."

Fashion Notes.

At present the skirt most worn is just four yards full, and flows much less than the gowns of last summer or the early fall. It is tight fitting in front and at the hips, where the fit is made by scant gathers instead of by the darts we have worn so long. It falls perfectly straight in front, and flows out at the back, the fullness of the back being held in place by the tapes tacked in the old-fashioned way. The bottom is faced up ten inches with crinoline and finished with one or two silk ruffles inside the aluminum wires and steels and other weird fancies which are seldom found outside of the fashion-books.

The kerchief waist is much worn this season. On this waist is a fichu brought over the shoulders and knotted in front, or it has scarfs inserted in the armholes and knotted across the bust. A narrow band of brown or black fur heads the kerchief piece and also the high wrinkled collar and the wrists of the long sleeves. A charming novelty for house waists is the chine moire, a dainty fabric showing chine flowers on a moire ground.

The old black silk that has been discarded as too old for use may now be smartened up with a new waist of accordion-plaited mouseline de soie, over a color, striped through with jet ribbon, or even left all black, with a turquoise blue or high wire collar, or of jetted lace over a color, remembering it will add to the style of the dress if the sleeves are like the skirt. It is hardly possible to trim the bodice too much, and all sorts of big revers, shoulder capes, fichu effects and berthas are used.

Rather short, flat basques, pointed front and back, appear on many of the new spring

costumes made with the still fashionable blouse, or bodice rather, for, while the blouse suggests a species of negligé, the bodice is often close fitting and exceedingly smart.

Hints to Housekeepers.

A teaspoonful of ammonia to one teacupful of water for cleaning jewelry.

Powdered pipe clay, mixed with water, will remove oil stains from wall paper.

In bottling pickles or catsup boil the corks, and while hot you can press them in the bottles, and when cold they are sealed tightly.

Kid gloves for ordinary wear are painted; only the bright opera tints, such as fashionable ladies wear to match their colored dresses, are dyed.

Vinegar and salt will clean the black crust off sheet-iron frying pans, but they should be thoroughly scoured afterward with sand soap or any good scouring soap.

If shelves and floors of closets are wiped with water hot with cayenne pepper, and afterward sprinkled with borax and alum, roaches and other vermin are kept at bay.

When the fat's in the fire it is never wise to throw water upon it. If fat in a kettle boils over and there are ashes convenient to throw on the blaze, it is the surest, safest way to put it out.

Steel knives used at table or for cutting bread, meat or anything for which a sharp knife is needed, should never be used for stirring or cooking anything in hot grease, as it makes them very dull.

A simple plan of disinfecting rooms consists in putting a saucepan of salt in the middle of the room and pouring on it a dram or two of sulphuric acid. The fumes that arise do the work of disinfection.

The chimney of a lamp should never be touched with water. A few drops of alcohol, or even paraffine oil, will remove the dimmed, smoky effect, and make the chimney as bright as possible, when it is polished with a soft flannel or chamois skin.

To prevent the spread of influenza where there is a catarrhal discharge, all handkerchiefs used by the patient should be placed where they will not be likely to be handled by other members of the family or to come in contact with other clothing. When they are washed they may be thoroughly disinfected, freed from stains and whitened if first soaked in cold water to which a half-cupful of the best kerosene oil has been added. Add enough boiling water to the cold to heat it, and with soap wash them out of this water, and through another warm water containing soap and a little oil. Rinse thoroughly and dry in the open air, leaving them out of doors an entire day, when they should be entirely free from the smell of oil.

Gems of Thought.

For virtue's self may too much zeal be bad;
The worst of madness is a saint run mad.

—Pope.

As you go forward in life, never expect too much, never hope for too little.—Dr. Jowett.

Conceit is the most incurable disease that is known to the human soul.—Henry Ward Beecher.

Cheerfulness is an excellent wearing quality. It has been called the bright weather of the heart.—Samuel Smiles.

What's brave, what's noble, let's do it after the high Roman fashion, and make death proud to take us.—Shakespeare.

The highest conceptions of the sages, who, in order to arrive at them, had to live many days, have become the milk for babes. Ballanche.

No man's religion is better than his politics; his religion is pure whose politics are pure, and his religion is radically wrong whose politics are wrong.—Gerrit Smith.

Wise men will apply their remedies to vices, not to names; to the causes of evil which are permanent, not to the occasional organs by which they act and the transitory modes in which they appear.—Burke.

The whole world is put in motion by the desire of wealth, which is chiefly to be valued as it secures us from poverty; for it is more useful for defense than acquisition, and is not so much able to secure good as to exclude evil.—Dr. Johnson.

I would say to all: Use your gentlest voice at home. Watch it day by day as a pearl of great price, for it will be worth more to you in days to come than the best pearl hid in the sea. A kind voice is joy, like a lark's song, to a hearth at home. It is a light which sings as well as shines.—Elihu Burritt.

YOUNG FOLKS' COLUMN.

A Dozen Good Times.



FANNY had entered school the week she was eight years old. Dolly intended to go as soon as her mother would let her. Mrs. Pettitt did not discourage her by telling her she must probably wait four years longer.

School was not dismissed on Washington's Birthday, though it is a legal holiday. It was to be a special day, however. The preparations in Fanny's room excited her so much that she made a queer blunder. She was waiting after school for her teacher to write a note asking Mrs. Pettitt if Fanny could not recite a poem. Before directing it, Miss Snyder said: "What is your father's first name, Fanny?"

"George," said Fanny, promptly. "George Washington." She meant to say George Pettitt.

Her teacher laughed so much that she made a mistake herself, spoiling an envelope by writing "Mrs. George Washington." So she had to take another.

Fanny wanted Dolly to go. "It will be an awful funny day," she said.

Mrs. Pettitt replied that it would be a pity to have Dolly miss a funny day, and she would go and take her if nothing happened.

Dolly was afraid when she first went into the schoolroom. She climbed into her mother's lap and hid her face. She wondered why the children looked at her instead of at the flags, pictures, drawings on the blackboard, or at the teacher or each other.

She did not know that school-children like to watch a sweet little visitor with a pleasant bright face and curls sticking out of a blue velvet bonnet.

When it was time to begin, the school sang "Hail Columbia, Happy Land." They sang it with so much spirit that Dolly hardly knew whether to be charmed or frightened.

After that Mr. Williams, a minister, told the children the story of Washington as a child, a young soldier, a great general and the first President of our country. Among other things, he said:

"He was a boy exactly as the boys here are, and he liked to run, play, leap and wrestle. In Fredericksburg, Virginia, is a spot by a ferry where they say he stood and threw a stone across the Rappahannock river. He loved to manage fiery horses. Once he tried to break a fine colt of his mother's. It reared and fell back, killing it. As no one else knew anything about it, he could have deceived her. But he owned his fault. His mother told him she was sorry her favorite colt was dead, but was glad her son always told the truth."

When Mr. Williams' useful talk was done, the children clapped their hands heartily. Four boys then sang something to the tune of "Yankee Doodle." They were scared and mixed words so badly that no one could tell what the song was about. But any one could recognize the tune.

Harvey White, a fat little boy in a pretty suit of clothes and a new red necktie, next tried to entertain the company. He walked forward, bravely bowed, and began:

"When General Washington was young,
About as big as I."

When he got there he forgot the next line. He cleared his throat and began again, saying the same words. But he got no further. He tried once more. Poor Harvey! Only those two lines staid in his memory, and at last he exclaimed:

"Any way, when General Washington was young, about as big as I, he wouldn't tell a lie."

Then he ran off the platform to his seat, and every one laughed and cheered loudly.

It was now Fanny's turn. Her name was called, and with very red cheeks she recited these words in a clear, pleasant voice:

We cannot all be Washingtons,
And have our birthdays celebrated;
But we can love the things he loved,
And we can hate the things he hated.

He loved the truth, he hated lies,
He minded what his mother taught him,
And every day he tried to do
The simple duties that it brought him.

Perhaps the reason little folks
Are sometimes great when they grow taller,
Is just because, like Washington,
They do their best when they are smaller.

On the way home Fanny asked her mother if she could hear every word, and Mrs. Pettitt said she could.

"I'm glad," said Fanny. "I felt real queer; I couldn't hardly hear it myself. And I forgot all about I had my best dress on."

"Well, how do you like school?" asked Mr. Pettitt of Dolly.

"Oh! some of it I do and some I don't,"

answered Dolly. "I like flags and fings, and when they sing, and it was awful fun when the boy kept saying his poem over all the while."

"I should think it wasn't for the boy," said Fanny. "You're terrible afraid when you speak pieces, and when you forget them prob'ly you're afraid. Did you ever speak a piece, papa?"

"Once, when I was about eleven," answered her father. "I had always said I never would, but the rule in the school was, that those who wouldn't speak could not go into a higher class. So I learned some verses and wore some new trousers to speak them in. Now, your grandma had made those trousers on a one-thread machine, and when I made a deep bow, I discovered that one leg was ripped nearly to the knee. And I was so embarrassed I rushed out of the door, grabbed my hat and ran home."

Fanny drew a long breath.

"Did you get whipped?" she asked, in alarm.

"No; my teacher forgave me when I was sent back to explain. And afterward I spoke my piece all right."

"Was it Washington's Birthday?" asked Dolly.

"No; it was only a plain day," said Mr. Pettitt.

"That's too bad. Holidays are such funny days."

"I think they are, too," agreed Fanny. "I am glad there was a February funny day."—The Author of Lady Gay.

Wise and Otherwise.

Miss Jumpuppe (to Ellerton, who is taking her out for a ride, and whose horse has turned around and refused to move)— "Don't be annoyed, Mr. Ellerton; have patience, and we will move on presently." Mr. Ellerton—"Patience, Miss Jumpuppe! Why, I am paying for this animal by the hour."—Vogue.

Said Sam to Joe in fierce debate
Upon the woman question,
You've answered well all other points,
Now here's my last suggestion.

When woman goes to cast her vote
Some miles away, it may be,
Who then, I ask, will stay at home
And rock and tend the baby?

Well, since the question seems to turn
On this as on its axis,
Just get the one who rocked it when
She went to pay her taxes!

Quite an Objection.—Mr. Ford (very wealthy, to luxury-loving wife)— "Love, there are only two of us at our home. Is there any need of so many servants?" Mrs. Ford—"Why, Courtenay, you are so very rich that the servant's wages can't draw very heavily on your fat bank account." Mr. Ford—"It isn't the expense, but it seems so much like a foreign boarding-house, and between your French maid, the German cook, the English butler, the Italian hall-boy, the Irish coachman, the Austrian footman, and the Scotch chambermaid, I have forgotten my native tongue."—Vogue.

I went to hear the city choir,
The summer night was still;
I heard the music mount the spire,
They sang: "He'll take the pil—"

"I'm on! I'm on!" the tenor cried,
And looked into my face,
"My journey home! My journey home!"
Was bellowed by the base.

"It is for the—it is for the—"
Shrieked the soprano shrill.
I knew not why they looked at me,
And yelled "He'll take the pil—"

Then clutching wildly at my breast,
Oh, heaven! My heart stood still;
"Yes, yes," I cried, "if that is best,
Ye powers! I'll take the pil—"

As I half fainting reached the door,
And saw the starry dome,
I heard them sing: "When life is o'er
He'll take the pilgrim home."

When the ostrich is to be divested of its plumage a long hood is placed on its head, and it is then confined in a railed inclosure about three feet square. The birds rarely show fight.

DOMESTIC ECONOMY.

RICE MERINGUE.—Boil a quarter of a pound of rice in about a pint of new milk until it is sufficiently tender to swell the grain. Let it cool and then add two ounces and a half of sugar, the grated peel of one lemon, a piece of butter the size of an egg, and the beaten yolks of six eggs. Mix all together thoroughly and then pour into a buttered dish. Beat the whites of five eggs to a stiff froth and lay it over the top. Bake it in a slow oven and serve at once.

CELERY A LA CREME.—Take six heads of celery, cut them in pieces about two inches long, wash them very clean and boil them in water until tender. Take half a pint of cream, mix with it a piece butter rolled in flour and a little salt and grated nutmeg; boil it up until it is thick and smooth, put in the celery, warm up and serve with the sauce poured over it.

HANOVER SAUCE FOR CHICKEN.—Boil the liver of the fowl, then pound it in a mortar with the juice of half a lemon, and half a pint of cream, a little salt and pepper. The quantity of cream depends upon how much sauce you may require.

FRENCH ROLLS.—One ounce of butter, half a pint of milk, two spoonfuls of yeast, one egg, a little salt, one and a half pounds of flour. Warm the butter in the milk, add a little salt, the egg well beaten, and the yeast. Mix in the flour and let it rise an hour and a half. Knead it well, make it into rolls, and bake them in a quick oven.

TO MAKE MUSTARD.—Four heaping teaspoonfuls of mustard, one teaspoonful of powdered sugar, and half a teaspoonful of salt. Mix these ingredients together thoroughly and add boiling water, a little at a time, till it is smooth and thick. Then add one scant teaspoonful of vinegar.

MINCED MUTTON.—Take a pound and a half of cooked mutton and mince it as fine as possible and season it highly with pepper and salt. Warm half a pint of good brown gravy or gravy made from the bones, make the mince very hot in it, and serve with a border of poached eggs.

A Thoughtful Wife.

She was a pretty shrewd woman, and she had heard her husband complain at different times about the increasing burdens from his growing correspondence. She half divined his purpose to get a typewriter, both the machine and the girl, and as he has an eye for beauty and likes a pretty face she formed her own plans.

"What do you have to pay a girl?" she asked.

As he was reading the evening paper in an absentminded way, he said, "Oh, you can get a real pretty girl for \$10 or \$12 a week."

He had given it all away, but she kept her counsel until he said he had bought the machine and would advertise for a girl.

"Oh, no need to do that," she said. "I have a girl engaged for you, and she is said to be the quickest and best shorthand girl in town."

So she had, and the next day the hubby was thunderstruck and all broken up when he saw the ancient piece of bric-a-brac with side curls that his wife brought in the next morning. She was a bird for homeliness, would stop clouds, turn switches and freeze ice.

And now that wife laughs in the other sleeve as she thinks of her cuteness. She thinks Charley's correspondence will drop off pretty soon, so that he won't need any assistance.—Chicago Tribune.

The last English census enumerated about 5000 women who are professional gardeners in that country, and six who are employed in superintending the drainage of towns.

Some fellows kick a horse every time they enter his stall, and then wonder why he does not love them.

Highest of all in Leavening Power.—Latest U. S. Gov't Report.

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PATRONS OF HUSBANDRY.

Random Thoughts.

By A. P. ROACHE, W. M. S. G. of California.

Bright stars of hope are nature's oath
To free the soul from vice and sloth.

The Trade Card Committee organized by electing Past Master Overhiser as chairman and Past Secretary Dewey as secretary. The committee has been doing good work in securing contracts in various cities with trade houses and manufacturers, and will soon issue their trade circular to the granges.

The Executive Committee will meet in special session in San Francisco at 10:30 o'clock, March 14th, where, in conjunction with the Past Master, officers of the State Grange, and any other interested patrons who can be present, a grand musical and literary programme will be arranged to continue two days and evenings during the California International Grange Congress at the Midwinter Fair on the 13th and 14th of April. Papers on various farm subjects will be presented by practical and scientific speakers, and the meeting will doubtless be the most beneficial and notable one of the kind ever held.

It is hoped that all granges desiring space on the programme of the Grange Congress will inform Secretary Mills previous to the meeting of the Executive Committee exactly what they will do in the way of entertainment and what length of time they desire.

Secretary Mills has been requested to correspond with all granges in the State, asking them to appoint a committee consisting of one sister and one brother from each grange to act as a Reception Committee at the Grange Congress in April. This will create a committee of such magnitude that not only the National Lecturer and other notables, but the most humble member of the order, will be recognized and welcomed. It is hoped that every grange will act at once and report the names of the committee appointed to Secretary Mills at their first meeting.

Director-General De Young has generously offered the use of Social Hall for holding the Grange Congress. The hall is a commodious and comfortable structure well arranged for the purpose, while its acoustic properties seem to be all that could be desired.

Mr. Emory E. Smith, the obliging and efficient head of the Agricultural and Horticultural Department, has kindly offered the use of a splendid reception room and registration desk. He has instituted various measures for the convenience and benefit of exhibitors and patrons. The honey and fruit interests especially have reason to congratulate themselves on the wisdom and forethought he has displayed in the conduct of those departments.

The indomitable energy and ceaseless activity of the entire management of the Fair has already secured a measure of success unparalleled in such vast undertakings, and, if the people of the United States will but indifferently do their duty toward it, the records of history will prove this to have been the most unique, pleasing and successful affair ever instituted.

Italian skies, Egyptian towers
Are lost amid the blooming flowers
Of Sunset City, beauty-crowned;
Utopia here at last is found.

Immediately after the close of the Grange Congress, a grange lecture campaign will be commenced, and the subordinate granges will be given an opportunity to hear, from the National Lecturer, grange views from an Eastern standpoint.

The attention of all granges is respectfully called to page 80, chapter VII, paragraphs 1 and 4 of the Digest, also to page 64, paragraph 57 of the same. Masters and lecturers will please act in accordance therewith.

From Tulare.

Tulare Grange held its regular semi-monthly meeting in Goldman's hall on the afternoon of Saturday the 17th inst.

The committee on change of ritual, as proposed by San Jose Grange, reported that having examined the ritual now used in conferring the double degrees, and that proposed by San Jose Grange, they did not see adequate advantage in the proposed abbreviation of the work. The ceremonies now required are as plain and simple as in any social and moral order; the emblems are as expressive, the ceremonies as impressive, and the lessons as instructive as in any order. The best attendance is to witness the ceremonies, and lack of work in the degrees seems to produce lack of attendance.

The committee on the cause of the financial depression reported progress and were

continued, Brother Chapin reading several interviews he had with prominent business men which were interesting and instructive. A general discussion followed, generally participated in by the members present.

A resolution in favor of an appropriation by Congress to make roads and trails in the Sequoia National Park, and in favor of extending the north boundary so as to include the now celebrated Kings River Canyon, was passed.

The Secretary's Column.

A special meeting of the executive committee of the California State Grange was held in San Francisco, Cal., Feb. 20, 1894. Present, Worthy Master A. P. Roache, Bros. B. F. Walton, Cyrus Jones, Geo. P. Loucks and Secretary Don Mills.

The report of the special committee appointed Jan. 9, 1894, to inquire into the feasibility of holding a grange congress on the 13th and 14th of April, 1894, was adopted.

The following resolution was adopted: Resolved, That each subordinate grange in the State be requested to appoint two members from their respective granges, a sister and a brother, to act as a reception committee at the grange congress to be held at the Midwinter International Exposition grounds on the 13th and 14th of April, 1894, and to at once notify the secretary of the State Grange of their appointment.

The secretary was authorized to at once correspond with the national lecturer, and ascertain the length of time he will remain in the State.

A communication from Prof. Emory E. Smith, placing a desk at the disposal of the State Grange during the congress, where all visiting Patrons may register, was read and accepted and the thanks of the committee extended for same.

The secretary was requested to have a file of the National State Grange proceedings to date, bound for future reference.

Next meeting of the Executive Committee will be held at the office of Bro. A. T. Dewey, 220 Market street, San Francisco, Cal., Wednesday, March 14, 1894, at 10:30 A. M.

Subordinate Granges that have not reported to this office the name and address of their master and secretary for 1894 will please do so at their earliest opportunity, so that I may be able to have a complete list for use in this office.

Santa Rosa and Bennett Valley Granges will hold a picnic May 26, 1894. The programme, etc., I hope to report later on.

Proceedings of the National Grange session of 1893 have been received and forwarded to the masters of all subordinate granges in the State. Members of the order who desire copies of either the National or State Grange Proceedings can have them on receipt of three cents postage.

This office acknowledges receipt of Annual Proceedings, session of 1893, of Michigan and Delaware State Granges.

The National Lecturer, Bro. Alpha Messer, is expected to arrive in this State about the 10th of April.

All communications for California State Grange should be addressed to Don Mills, Santa Rosa, Cal.

Executive Committee Meeting.

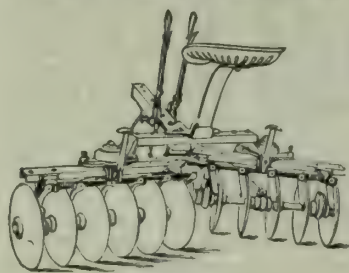
A meeting of the executive committee, held in this city last week, was almost wholly given up to consideration of matters connected with the coming Grange Congress. It is now definitely known that the lecturer of the National Grange will be here, and he will undoubtedly be the chief attraction. As to the general programme, nothing was positively fixed. There will be another meeting some time next month to perfect details, when it is hoped to have the co-operation of the past masters.

After the congress is over, the national lecturer, Mr. Alpha Messer, will visit such subordinate granges as ask for his services and will lecture upon matters of current grange interest. It is expected that a good many granges will ask for his attendance and that his stay in California will be extended through two or three weeks. It is understood that he will visit Oregon and Washington on his return.

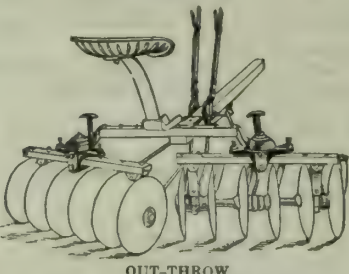
Resolutions of Respect and Sympathy.

At the last meeting of South Sutter Grange resolutions of respect for the memory of late Brother Wilder Wall Monroe were passed by unanimous vote. Deceased was a charter member of South Sutter Grange, and a citizen universally respected. The committee by which the resolutions were drafted was composed of J. J. Watson, Lucy E. Purinton and John W. Jones.

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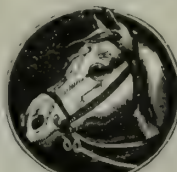
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AGRICULTURAL NOTES.

CALIFORNIA.

Butte.

Oroville Register: The statement put forth by the directors of the State Agricultural Society that wheat can be produced for 28½ cents a bushel, is misleading. The estimate of 16 bushels per acre is too high. Under certain conditions, with a favorable yield, when the season is just right and all the conditions are in favor of the grower, it is possible that wheat can be produced at 28½ cents per bushel, but taking a county, for instance, or any large territory, wheat cannot be made profitable at double this sum. Plain facts are better than theory, and the facts are against the statement made by the directors. If wheat could be profitably grown for the sum named, then the farmers would be prosperous. Now, the facts are that grain-growers have been going behind-hand for some years, yet the price of grain has been far above 28½ cents. This simple but undeniable fact is enough to upset the statement that wheat can be grown for the very low price named.

Oroville Register: The orchardists of this State have just reasons to complain of the price at which dried fruit is retailed in the East. The grower receives but little more than a living price for his fruit, but there is a big difference between the price which the grower receives and that which the retailer gets when the fruit is sold to consumers. This difference is far more than the railroad company, the wholesale dealer and the jobber ought to receive; hence the grower has a right to kick. The retailer gets from 12 to 30 cents a pound for California raisins in the East. The grower who gets 5 cents a pound is happier than a school-girl with a new dress and a handsome beau. The lower the price at which dried fruit is retailed in the East, the more of our fruit will be consumed; hence the producer here is interested in seeing the fruit sold upon a close margin.

Los Angeles.

From 1350 olive trees, owned by J. F. Packard at Pomona, were gathered this year 2500 gallons of olives. The trees are five and six years of age, and this a short year. Mr. Packard has picked his fruit, and has a good demand for his olives at a price that will net him 50 cents a gallon, or over \$1200 for the whole crop.

Orange.

Anaheim Gazette: The indignation mentioned in these columns last week as existing at Fullerton over the importation of a gang of Chinese orange-pickers, imported by Porter Bros., purchasers of the Benchly crop, culminated in the populace gathering together and notifying the heathens to leave. This they did, going to Los Angeles on the evening train. Early this week Porter Bros. sent down another gang of Chinamen to pick the oranges on the ranch. This time they were guarded by an officer from Los Angeles, the county paying his expenses. A petition has been circulated protesting against the employment of these Chinese, to which, at last accounts, 165 names had been appended, only three men in the entire community refusing to sign it.

Anaheim Gazette: F. A. Gates of Garden Grove received advice on Friday that he had been awarded a medal at the World's Fair for the display of dates raised here and sent on to be exhibited this year. The trees are again in bloom, and have also quite a heavy crop of young fruit. It takes the fruit 14 months to mature, and the present crop gives every promise of being excellent to a degree. Mr. Gates has only two trees, each 17 years old. Both are thrifty and large, being about 20 feet high, yet one of them is barren and has not yielded any fruit, while the other is covered with blossoms and fruit in various stages of development, some of them just turning into the ripening state. He is at a loss to understand the reason for the one's sterility, and would give a good deal to find out.

Placer.

At the last meeting of the Placer County Horticultural Society there was considerable discussion relative to the formation of a United County Fruit Organization, and in view of the fact that several of the already existing local co-operative companies had entered into obligations with fruit-growers, by advances of money, purchase of materials and investment of capital in shares, which would make it difficult for such company owners to engage in a new organization, however desirable for the general good, without a reconciliation of already existing interests, it was deemed expedient to investigate those interests and consider the possibilities of combining them in a general consolidation which would accomplish the great objects of union. The following vote unanimously passed: That a committee of three be appointed to invite and meet representatives of each and every fruit company in the county, which should be composed of fruit-growers, to meet at Newcastle to consider a county organization for mutual interest and support. That such meeting should be held prior to March 10th, and that said committee shall be authorized to act in the premises, and shall report results at the next meeting of the fruit-growers, to be held at Penryn on Saturday, March 10th, at 2 P. M. The following were appointed as the committee of three: Hon. A. P. Hall of Penryn, Capt. W. J. McCann of Auburn, Major G. H. Turner of Loomis. The meeting was then adjourned, and that of the Placer County Horticultural Society was called to order, which, after a brief convention, was adjourned to the same date as previously mentioned for that of the fruit-growers, March 10th, at Penryn.

The fruit-growers in the vicinity of Loomis held a public meeting last Sunday for the purpose of forming themselves into an organization for mutual protection. The meeting was largely attended. After due deliberation they resolved to incorporate. The following named gentlemen were selected as directors: Messrs. Barton, Lavers, Laird, Branstetter and Major Turner. Hon. J. N. Barton was elected as president and Mr. Lavers as secretary. The new concern intends to build a new shipping house as soon as the weather permits, for the purpose of handling their fruit and crop this coming season.

San Bernardino.

Rialto Orange Grower: A large percentage of the oranges grown on the Rialto tract this year have been stolen. Just how large a proportion of course no one can say, but on one young grove where a careful examination a month or six weeks ago showed a hundred boxes not more than twenty-five could now be gathered. It is not believed tramps have done all the thieving, or even the greater part of it, in this instance. Stringent precautionary measures must be taken next season to prevent this wholesale robbery.

Rialto Orange Grower: The annual report of the County Board of Horticultural Commissioners has been filed and presents some items of interest. The grape-vine flea beetle made its first appearance in the county last year, and growers are warned to look out for it. In the extreme western part of the county black scale has appeared on the orange, lemon and olive trees. The usual washes do not seem to have done much good, but orchardists are advised to persist in their use, or, better still, substitute the gas treatment. The codlin moth has increased on apple and pear trees, while pernicious scale has become less numerous. The salt, lime and sulphur remedy has been found to be a preventive of curl leaf on peach trees. The deciduous orchards are in a more healthy and vigorous condition than ever before. The gum disease continues to give uneasiness in some localities, but the commissioners think it is not on the increase in this county. It was doubtless thought that high tide in planting had been reached in 1892, with an area of 6327 acres within the old county limits. But 1893 is the banner year, showing an area planted of 5867 acres within the present county lines. From these figures it will be observed the planting for the past year was only a little less than that of the old county for 1891 and 1892. A much greater relative increase has, however, been made in deciduous trees than in former years. Approximately about 600,000 trees were planted last season.

San Diego.

Perris New Era: Here and there in southern California there are patches of land that are more or less of an alkaline character. How to best rid the soil of this surplus of alkali is an interesting and important question to the southern California farmer. Irrigation will do it after a time, by washing out the excess of alkali from the soil. Prof. E. W. Hilgard some years ago suggested applying sulphate of lime to these soils. This changes the carbonate of soda to the less harmful sulphate of soda. Experiments made at Tulare show that the effect of gypsum or sulphate of lime is what Prof. Hilgard had expected from it, but on a large scale this is very expensive. It is found by cultivating the ground that the alkali is mainly near the surface. Crops like buckwheat, which have very shallow roots, cannot be grown the first year, even by applying gypsum. On the other hand, sorghum grows well, its deep root reaching below the line of alkali, and much of the sorghum grew to a height of six feet. If the whole piece had been planted with this crop it would have been profitable.

San Joaquin.

The Lodi Sentinel of Feb. 24th says: San Joaquin valley this week has been visited with one of the severest rain storms that has been known for years. From Saturday last until Tuesday the rainfall was nearly five inches. Much damage was done to crops in some parts of the county. The black or adobe land has suffered the most. Between Lodi and Stockton hundreds of acres are covered with water, which will either kill the crop entirely or cause it to produce only a small crop of hay. As usual, northern San Joaquin county comes out of the pouring storm with less loss than any other part. Notwithstanding the severity of the storm, our roads the next day after it were in fine condition. A few days of warm weather will put the crops in such condition that the effects of the storm will not be noticed.

Santa Barbara.

Santa Maria Times: Henry Bonetti says that dairymen are making more money now than they did in former days when butter was a dollar per pound. The reason is because of more scientific business methods, and the time is near at hand when they will be better still, when more creameries are established, irrigation introduced, more summer crops raised, better cows kept and everything sifted right down to a scientific business proposition. Henry is right.

Santa Cruz.

Watsonville Pajaronian: A contract was made by a beet-grower of the Cooper ranch, last week, to pay the Chinese \$1.10 per ton for the field work if the yield was less than 15 tons per acre, and \$1 per ton if the yield was over 15 tons per acre. Another large contract—one of the largest that has been let this season—has been given at a slightly advanced figure over these quotations. The tendency is downward on the price paid Chinese for beet field work, and well it might be, for the smooth Mongolian has been making high wages in the beet fields. Many of them have been making over \$3 per

day where the yield was large. They have been paid more than they received when this valley furnished the beets for the Soquel factory. Chinese labor has advanced in price as other labor has gone down, and the Mongolian is now the highest priced labor in the market. If white labor would co-operate here, as at Chino, and take beet field contracts, the Chinese could soon be worked out. There is a large and growing opportunity here for white field laborers.

Solano.

Vacaville Reporter: To those who desire to estimate the crops of the future, the following table will be of some interest. It is based upon a fair average production of trees in full bearing and under proper treatment, planted as usual in orchards:

	Tons per acre.
Apples.....	4
Apricots.....	5
Prunes.....	6
Pears.....	5
Figs.....	5
Peaches.....	5
Walnuts.....	1½
Almonds.....	1½

Sonoma.

At the last meeting of the Sonoma County Horticultural Society, the special subject for discussion was "Grafting." Mr. Roberts thought that not enough grafting was done in Sonoma county. He said he was grafting the apple to the pear and the peach to the prune. He had seen several wonderful growths of apple grafts on the pear, Bartlett and Winter Nelis particularly. Mr. Hornbeck said he had had considerable experience in grafting the apple on the pear, and the trees were healthy and the fruit of good quality. He thought the man who has pear trees that are not proving satisfactory could not do better than graft a good quality of winter apples on them. The Arkansas Black, he said, was one of the finest quality and flavored winter apples, and they are being largely propagated. As to making the graft, he said he made the cleft in the stalk with a rip saw instead of a chisel. It makes a neater piece of work. He seldom lost more than three out of a hundred. Mr. Braugher saw no reason why grafting the apple to the pear should not be a success, though he did not think the pear to the quince would make a successful growth. In grafting, he always left a portion of the original tree the first year in order to help take up the sap. Otherwise there will be too much sap for the scions. Their growth is apt to be abnormal. Jonathan Roberts said he had been successful with the apple graft. He was of the opinion that the bark graft was more successful with the large stock. Mr. Braugher said he never grafted until the sap was in full flow, and he always put the wax on hot. Mr. Roberts thought it was well to cut the stock a few days before the graft was inserted. The wax was apt to stick better. Messrs. Hornbeck and Braugher thought there was no use in that. It was making two bites of a cherry. If the wax is put on hot and properly pressed down, it will stick. The discussion was preceded by the annual election, which resulted in the re-election of Mr. Gregory to the presidency, who consented to serve upon the promise of ex-President Roberts to help out occasionally. The meetings of this society are held regularly, and its discussions of practical questions are always intelligent and valuable. The county commissioners have shown their appreciation of the good work of the society by granting it the use of a room in the courthouse at Santa Rosa.

Yolo.

Woodland Democrat: M. B. Steinberg, who is farming on the Diggs tract near Yolo, drove into Woodland this morning with six beets, the weight of which aggregated 375 pounds. The largest weighed 75 pounds. From two acres Mr. Steinberg has already sold \$80 worth of beets, and he still has 25 tons remaining, which are worth \$4 per ton delivered in Woodland. Mr. Steinberg estimates the total cost of plowing, planting, cultivating and gathering the crop at \$15 per acre. That leaves a very comfortable margin for profit.

The fruit shipments by rail from Knight's Landing for the season of 1893 aggregated 250,000 pounds. Conservative estimates, in view of the increased acreage that will come into

bearing, fix the yield for the season of 1894 at 325,000 pounds.

Webster Treat of Davisville has 190 California paper shell almond trees five years old covering two and five-sevenths acres. This season he has harvested 3502 pounds of nuts that sold in Chicago at 22 cents a pound. This netted 18 pounds to the tree, with a value of a little over \$4 each, or a total of \$314.82 per acre. When the trees were four years old they averaged about three pounds per tree. At eight years it is estimated they will produce an average of 40 pounds to the tree. Almond trees are long-lived, and live and bear well at 50 years. In Europe some trees at 50 years old are said to bear from 150 to 200 pounds to the tree.

Tulare.

After quoting the statements of the Boggs report as to the cost of wheat-raising in California the Register gives the following estimate "by one of the best dry land wheat farmers in the valley to prove that the above estimate is not quite right. It is as follows:"

Plowing per acre.....	\$1.00
Seeding and harrowing.....	.40
Cost of seed.....	.40
Harvesting and putting in sacks.....	1.75
Sacks.....	.45
Hauling to market.....	.35

Interest at 9 per cent on \$25 per acre.....\$4.25
Total.....\$2.90

At \$6.51 per acre it would make the cost of raising 160 acres of wheat \$1041.60 instead of \$729.60.

Ventura.

Gonzales (Monterey Co.) Tribune: I will give you some items about beans and the probable yield, writes J. S. Harkey to the Venturian. A man owns 80 acres of land, or rents the same, as the case may be, between Ventura and Santa Paula, and the land is planted to Lima beans. It requires one man and four good horses to do the work. The list of farming implements to run the 80 acres is as follows:

Sulky plow.....	\$ 00
Chisel and cultivator.....	00
Four-horse harrow.....	25
Drag and hoe.....	15
Bean planter and cutter.....	15
Two wagons.....	200
Supposing everything hired, plowing.....	100
Harrowing.....	30
Chiseling twice.....	75
Harrowing twice more.....	40
Planting, four days.....	15
Cultivating, ten days.....	80
Harrowing twice, 24 days.....	45
Lima seed, 25 to 40 pounds per acre, three cents per pound.....	80
Thrashing, 1500 pounds per acre.....	30
Sacks, per 100 pounds, 7½ cents.....	60

Total.....\$1,085

Now, you have the average cost for 80 acres of land. Of course, some years there are more than 1500 pounds to the acre, and other years less, but I give that as a fair average in 15 years' experience. Now, as to the implements, there are many farmers who use more tools than are necessary. I think the tools mentioned are needed, except a bean cultivator. The expense is the same on other varieties, except the seed, taking only from 12 to 18 pounds to the acre—about 37½ cents per acre. Now, the implements will not be considered, for some of them will last several years.

Beans at 2½ cents per pound (average).....\$3,000
Suppose one-third off for rent.....1,400

Gross total.....\$2,000
Total expenses.....1,085

Profit.....\$915

Hauling to market, 95 cents per ton.....\$ 00
Contingent expenses.....00

Total profit on 80 acres.....\$ 915
Two wagons.....200

Total.....\$1,115

This does not include any expense of wagons and tools. The calculation includes two wagons, \$200, which must be added to the total, making \$1000 profit. I do not wish to convey the idea that every man could farm with so little expense, for I know that half of the farmers are too extravagant in farming, but I believe that I have been liberal enough. This calculation is made on a basis of hiring everything and I believe it to be a fair one.

ST. JACOBS OIL

CURES PROMPTLY

LAMENESS,

SOOTHES, SUBDUES, CURES.

**SWELLINGS,
BACK-ACHE,
SORENESS.**

WAKELEE'S

THE BEST

—IS THE—

CHEAPEST.

Squirrel and Gopher Exterminator
IN SMALL AND LARGE CANS.



DON'T BUY

INFERIOR

ARTICLES

Because it is so profitable to use one else.

Seeds, Plants, Etc. TREES! TREES!

IT HAS BEEN DEMONSTRATED IN THE PAST FEW years by the large number of trees sold by me that nursery stock grown on the river bottom of Sutter county is far superior to any grown in the State. I am prepared to supply in large or small quantities:

Bartlett Pears, Plums and Prunes
On Myrabalan Plum Roots.

—ALSO—

Cherries, Peaches, Apricots, Apple, Almond
Trees, Etc.

Special Rates on Large Orders.
Send for Price List for 1893-94.

James T. Bogue, Marysville, Cal.

E. J. BOWEN, SEED MERCHANT.

ALFALFA:

Grass, Clover, Vegetable and Flower Seeds,
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LARGEST STOCK AND
MOST COMPLETE ASSORTMENT.

Illustrated, Descriptive and Priced Seed Catalogue for
1894 mailed free to all applicants. Address

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315 & 317 Sansome St., San Francisco, Cal.
65 Front Street, Portland, Or.
or 214 Commercial St., Seattle, Wash.

San Ramon Valley Nursery.

Surplus Stock of

ALMONDS, 8 Varieties.

PEACHES, 4 Varieties.

PRUNES, 3 Varieties.

At very LOW PRICES. Also an assortment of
other varieties of Fruit Trees.

WRITE FOR PRICES ON STOCK YOU NEED.

BALDWIN & STONE,

Danville, Cal.

The sower has no second chance. If you would at first succeed, be sure and start with

FERRY'S SEEDS.

Ferry's Seed Annual for 1894 contains the sum and substance of the latest farming knowledge. Every planter should have it. Sent free.

D. M. Ferry & Co.,
Detroit,
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DON'T think because you have failed in the past, that you can't grow roses, successfully. There will be no failures in the future, if you get the famous D. & C.

AND ROSES

Our new Guide to Rose Culture gives you explicit directions for selecting and growing the very choicest flowers of every kind. We send it free, if you request it, also a sample copy of our interesting Floral Magazine.

"Success with Flowers."

The Dingee & Conard Co.,
West Grove, Pa.

Trees, Vines and Plants,

—FOR 1893 and 1894.—

Terms on Application.

Address, . . . L. D. BUTT.

Penryn, Placer Co., California.

TREES and PLANTS.

A fine assortment, best varieties, free from pests of any kind. Prunus Simoni, Bing, Kostraver and Murdoch Cherries, Black California Figs; Rice Soft Shell and other Almonds, American Sweet Chestnuts, Propagated Walnuts. Hardy mountain grown Orange Trees. Our Oranges have stood 22 degrees this winter without injury. Dollar Strawberry, the best berry for home use or market. Address C. M. SILVA & SON, Lincoln, Placer County, California.

FANCHER CREEK NURSERY, FRESNO, CALIFORNIA.

FRUIT TREES, ORNAMENTAL TREES, GRAPE VINES.

SPECIALTIES—OLIVES, ROSES, PALMS.

SEND FOR CATALOGUE AND PRICE LIST.

GEO. C. ROEDING, Manager.

WE SEND FREE, BY MAIL, AFTER RECEIPT OF ONE DOLLAR, ONE OF THE FOLLOWING COLLECTIONS OF PLANTS:

12 Roses,

15 Carnations,

15 Chrysanthemums,

15 Fuchsias,

15 Geraniums,

15 Heliotropes,



20 Assorted Summer Flowering Plants,

12 Dahlias,

12 Coleus,

12 Climbing Plants,

10 Oleanders,

24 Pansies,

DISTINCT VARIETIES. ALL PLANTS LABELED. TRUE TO NAME.

Grallert & Co., Florists,
COLMA, San Mateo Co., Cal.

Send for full list of collections.

Be Sure and Give Us a Trial.

We Grow Only the Best Varieties.

STOCKTON NURSERIES, ESTABLISHED 1853.

FRUIT TREES. FRUIT TREES.

GRAPE VINES.

Also Fine Stock of Shade and Ornamental Trees, Shrubs, Palms, Roses and Carnations.

Correspondence Solicited.

PLANTS IN GREAT VARIETY.

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NEW CATALOGUES NOW READY.

Fruit, Nut and Shade Trees, Grape Vines, Etc., Citrus Fruits, Ornamental Shrubs,
Flowering Plants, Roses, Palms, Bulbs, Seeds, Etc.

Fruit and Nut Trees propagated from bearing orchards at Sausal Fruit Farm; Unirrigated, Clean and Healthy.
Do not fail to correspond before making purchases. Satisfaction guaranteed.

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McKEVITT'S EARLY.

The New Yellow Freestone Peach!

FIRST AND BEST OF EARLY YELLOW PEACHES.

RIPENS IMMEDIATELY AFTER THE ALEXANDER (White Cling), which is the earliest peach in market.

Fruit is round, of medium size, VERY HIGHLY COLORED, flesh firm and sweet.
THIS PEACH HAS BEEN SUCCESSFULLY SHIPPED EAST FOR FIVE YEARS and is no new, untried variety.

Tree healthy, strong grower, and heavy bearer, never having missed a crop.
A limited number of yearling trees for sale this season. Apply early before stock is exhausted.

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AGENT FOR CALIFORNIA NURSERY CO.,

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SEEDS.—Kentucky Blue Grass, Clover, Vegetable, Flower and Tree Seeds.—SEEDS.
PRICE CATALOGUE MAILED ON APPLICATION.

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1894. 300 ACRES.

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Dealers and Planters.

Will also contract now to propagate Rooted
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OLIVE CULTURE IN CALIFORNIA,

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A NO. 1 TREES,

Two-Year-Old, 4 to 6 feet High.

Extra Inducements offered to intending buyers both
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Send and get book on Olive Culture.

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OROVILLE, - - Butte Co. Cal.
W. W. WILL, Proprietor.

I have the following surplus stock to offer at the
prices quoted:

	Number.	Feet.	Price.
Foster Peach.....	3000	4 to 6	8 cts.
Early Crawford Peach.....	6000	4 to 6	8 cts.
Late Crawford Peach.....	6000	4 to 6	8 cts.
Muir Peach.....	1000	2 to 4	6 cts.
French Prune on Almond.....	8000	6 to 8	6 cts.
French Prune on Myrobalan.....	5000	4 to 6	6 cts.
Apple.....	2000	4 to 6	6 cts.
Cherry.....	2000	4 to 6	8 cts.
Apricot.....	1000	4 to 6	8 cts.
Almond.....	2000	4 to 6	8 cts.
Sweet Seedling Orange.....	5000	3 to 5	20 cts.
Picholine Olive.....	1000	3 to 5	8 cts.
Pomegranate.....	1000	2 to 4	8 cts.

All trees warranted to be free from root knot and
scale of every kind. Correspondence solicited.

Pepper's Nurseries.

ESTABLISHED IN 1868.

For Sale at Low Rates, a General Assort-
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I do not buy trees to sell; what is offered is grown in
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is the most successful with deciduous trees. Prices fur-
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Address W. H. PEPPER Petaluma, Cal.

50,000 FRENCH PRUNE TREES

On California Peach Root, for sale.

No. 1—6 to 8 ft.,.....\$25 00 per 1000
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First class stock. Free from insect pest. Samples
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FRUIT TREES, ROSES, PALMS

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FREE—Catalogue HOME-GROWN NORTHERN SEEDS

Guaranteed fresh and reliable.
Large pkts. 2 to 5 cts. Direct from
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EVERYTHING IN THE SEED LINE.

Our Specialties: Onion Seed and Sets; Alfalfa,
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and timber claims. Have also a limited supply of
Lathyrus Silvestris (Flat Pea) the new Forage plant.
New Catalogue mailed free on application.

F. W. BARTELDES & CO., Lawrence, Kan.

Miscellaneous.

—The Cudahy packing houses at Seattle were destroyed by fire recently. Loss, \$32,000.

—The lumber output in the Pacific Northwest during the past year has decreased 700,000,000 feet.

—All the tunnels on the Southern Pacific Coast line will be completed this week except No. 4, which will take a week or ten days longer to finish.

—The citizens of San Pedro have prepared a protest to Congress against C. P. Huntington's attempt to divert appropriations to Santa Monica, claiming that the motive is purely selfish and personal.

—Large quantities of fish are going over the Northern Pacific road for sale in the Eastern markets. The company has stations along the line for obtaining ice to preserve the fish. One thousand pounds of smelt was shipped in a car a few days ago.

—A quarter of a million acres of railroad land in Stephens county, Wash., are soon to be put on the market. Some is fine farming land, while much is covered with valuable forests. The price will range from \$1.50 to \$9 per acre, the average being \$3.50.

—At an informal election held by the Santa Monica Board of Trade to ascertain the wishes of the town whether bonds in the sum of \$20,000 should be issued for the construction of a wharf immediately in front of the town the vote stood: For bonds, 243; against bonds, 95.

—A Montana man has invented a boat for navigation on the Missoula and other mountain rivers. The boat is seventeen feet long and four feet in the beam. Attached to the stern is a paddle-wheel, hung from a frame, which can be raised and lowered as the boat is in shallow or deep water. The wheel is revolved by an endless chain which passes over a crank in the center of the boat, moved by an arrangement similar to that used in propelling hand-cars.

—The artesian well near Montague, on the Prather ranch, is now down about 1,100 feet, and the drilling is prosecuted gradually, with expectations of striking oil, water, coal, or something of value between 1,500 and 2,000 feet below the surface, says the Yreka Journal. The well is now cased all the way down, so that the drill, with its rubber attachment below the casing, can be worked clear of the water, which was a heavy load to lift on every motion. The company operating this enterprise is deserving of great credit, as it has been continued steadily for nearly two years at an expense of about \$450 a month.

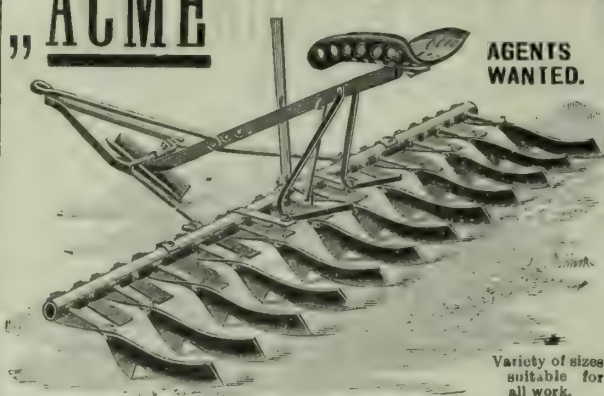
A Complexion Hint.

Walter Besant, who writes a column in a certain English weekly, usually devotes a good deal of his spare time to the industrial problem and the woman question. But last week he turned his attention to a more vital matter and discoursed upon complexions, quoting from the *World's* woman's page for the benefit of his English readers. It is a pleasant thing when the American woman is able to give information concerning lily brows and rosy cheeks to the English woman, whose complexion has been famed for generations. And it is even a pleasanter thing when so great an authority as Mr. Walter Besant is the medium of communication. This is what he says:

"May I help you, madam, to an onion? Will you prefer the vegetable raw or fried? Or you may have it boiled, baked or sliced in vinegar. You decline the offer? Fie! It is because you know not the sovereign qualities of this vegetable. The praises of the onion have been recently set forth in an American paper, which says: 'If ugly girls will eat onions they won't be ugly. Ugliness is another term for sickness. Well people feel good and look good. Health is beautiful and onions are health-giving.' The writer goes on to explain that onions, raw or cooked, stimulate all the organs, aid digestion and, which is perhaps of greater importance, brighten the complexion. Some of the best people, particularly in college and literary circles, are not 'at home' even to their intimate friends on Sunday. The ladies stay at home on Sunday to consume 'leeks for the lily cheeks.' After the leek soup a cup of strong black coffee is recommended, with seclusion. Again, madam, may I help you to a few slices of the Bermuda variety for the good of the lily cheek, which they will transform into a cheek of rose and lily?"

RUDY'S PILE SUPPOSITORY is guaranteed to cure Piles and Constipation, or money refunded. 50 cents per box. Send stamp for circular and Free Sample to MARTIN RUDY, Lancaster, Pa. For sale by all first-class druggists.

"ACME" PULVERIZING HARROW, CLOD CRUSHER AND LEVELER



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Variety of sizes suitable for all work.

Is adapted to all soils and all work for which a Harrow is needed.

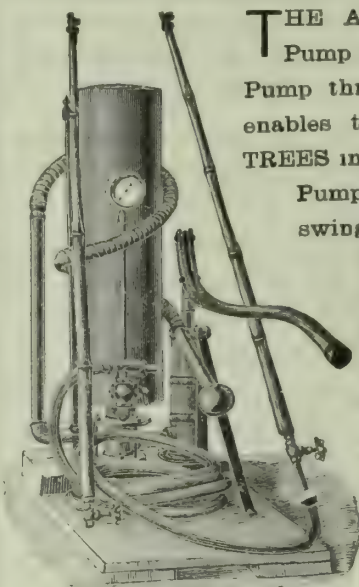
Flat crushing spurs pulverize lumps, level and smooth the ground, while at the same time curved coulters cultivate, cut, lift and turn the entire surface of the soil. The backward slant of the coulters prevents tearing up rubbish and reduces the draft.

Made entirely of cast steel and wrought iron and therefore practically indestructible.

CHEAPEST RIDING HARROW ON EARTH—sells for about the same as an ordinary drag.

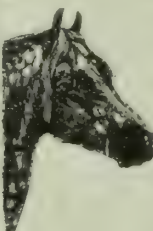
I deliver free on board at SAN FRANCISCO and PORTLAND.

Address DUANE H. NASH, Sole Mfr., Millington, New Jersey.



THE ATTENTION of those desiring a Spray Pump is called to this out. The Bean Spray Pump throws a CONTINUOUS spray, which enables the operators to spray MANY MORE TREES in a day than could be done with other Pumps. The men who operate the sprays can swing them onto the next tree and keep spraying while the pumper is driving. Time is money. These pumps are in use in every fruit-growing county and town on the coast and are the favorite. THE BEAN and NEW BEAN NOZZLES HAVE NO EQUAL. See them at Midwinter Fair.

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SAN JOSE, CAL.



ONLY 25 YEARS OLD
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THE H. H. H. LINIMENT

HAS STOOD THE TEST OF TWENTY-FIVE YEARS' USE AND TO-DAY IS BETTER KNOWN AND MORE EXTENSIVELY USED THAN ANY OTHER LINIMENT.

Some reasons why you should keep H. H. H. Liniment:

- 1st—Because it is the best for Man or Beast.
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- 4th—Because it ALWAYS GIVES SATISFACTION.

H. H. MOORE & SONS, Druggists,

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PROTECT YOUR TREES

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Gilman's Patent Tule Tree Protector.

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Cheapest Best and Only One to Protect Trees and Vines from Frost, Sunburn, Rabbits, Squirrels, Borers and other Tree Pests. For Testimonials from Parties who are using them send for Descriptive Circulars.

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Complete and Special Fertilizers

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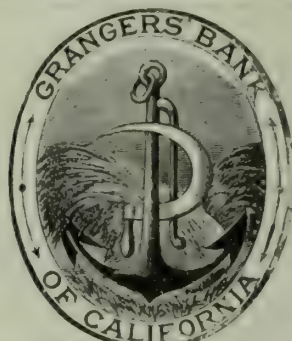
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Dividends paid to Stockholders.... \$32,000

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I. C. STEELE.....Vice-President
ALBERT MONTELLIER.....Cashier and Manager
FRANK McMULLEN.....Secretary
General Banking. Deposits received, Gold and Silver.
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The valves and working parts of the Fulton Pump can be removed, repaired and replaced without taking the pump out of the well.

Pumps fitted up for all depths of wells, ready to put in.

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Established 1870. Trial Subscriptions, 50c for 3 mos. or \$2.40 a year (all further notices). DEWEY PUBLISHING CO., 320 Market Street, San Francisco.

S. H. MARKET REPORT

Market Review.

SAN FRANCISCO, Feb. 28, 1894.

There is a distinctly better tone in the local wheat market, due to better reports from the East. It is reported that a good deal of buying has been going on in a quiet way for several days past by shippers, and this fact makes better feeling all round. Quotable at 91 1/4 c per cwt for No. 1 shipping, with 92 1/4 c to 93 1/4 c for choice quality. Milling Wheat is held at 97 1/4 c to \$1.02 1/2 per cwt.

BARLEY—Nothing of interest in the Barley market just at the moment. The demand for feed for consumption is rather light, and there is no very positive inquiry for this kind for shipping purposes. Brewing descriptions are in moderate request for export uses, while custom on local account is not of brisk character. Prices show fair steadiness. We quote: Feed, 70 to 71 1/4 per cwt for fair to good quality; 72 1/2 to 73 1/4 for choice bright; brewing, 80 to 87 1/2 per cwt.

Dried Fruits.

Peaches are a shade firmer, with better demand. Apricots are steady, in fact the market generally shows healthy tone. We quote prices as follows: Apples, 5 1/2 @ 6c per lb for quartered, 5 1/4 @ 6c for sliced, and 8 @ 9c for evaporated; Peaches, 4 @ 8c per lb for bleached halves, and 3 @ 5c for quarters; bleached Peaches, 7 @ 8c; sun-dried peaches, 5 @ 6c; Apricots, Moorpark, 1 1/2 @ 1 3/4; do Royals, 10 @ 12c for bleached and 6 @ 7c for sun-dried; Prunes, 4 1/2 c per lb for the four sizes, 4 1/4 @ 4 1/2 c for the five sizes, and 2 1/2 @ 4c for ungraded; Plums, 4 @ 4 1/2 c for pitted and 1 1/2 to 2c for unpitted; Figs, 3 to 4c for pressed and 1 1/2 to 2c for unpressed; White Nectarines, 7 to 8c; Red Nectarines, 6 to 7c per lb.

RAISINS—Are weak, under poor demand. Grapes show improvement. We quote as follows: London Layers, 75c to \$1.15; loose Muscatels, in boxes, 50 @ 75c; clusters, \$1.50 to \$1.75; loose Muscatels, in sacks, 2 1/4 to 2 3/4 c per pound for 3 crown, and 2c for 2 crown; Dried Grapes, 1 1/4 to 1 3/4 c per pound.

Dairy Produce.

The present condition of the local market for dairy products is reviewed by the Dairymen's Union of this city as follows:

The past week opened up with all grades of dairy produce a shade weaker in price than the previous week, the cause of the condition being more liberal arrivals of stock from all localities, excepting Humboldt, it practically being out of the market at this time of the year in making butter. While the stock of cheap or inferior butter is decreasing we also find that the quantity of fancy creamery stock is on the increase, more especially so with shipments which are arriving from a southern locality, they having opened up one of the largest creameries of the State of California during the past week—the Gilt Edge Creamery at Guadalupe.

In comparing prices with those of last year of a corresponding date, we find that the market is a little higher, which we think is due principally to better quality of the goods being sold. During the last advance on fresh grades of butter, merchants throughout the city have taken advantage of the situation to dispose of their stocks of packed descriptions, and at the present date the amount of this stock on hand throughout the city is comparatively small, there being no quantity of fancy pickle butter to be offered.

This is asserted to be the cause of the market not dropping so rapidly as it has in previous seasons. The Northern market is not using the quantity of goods that it did at this time last year, which is owing to the fact that they are devoting more attention to local product. In reference to the cheese market, the week closes with all grades a shade lower in price, which is owing to freer arrivals of new cheese, and merchants, not being desirous of accumulating this stock, are endeavoring to dispose of it even at slightly lower prices than quotations. The egg market is considerably weaker than it has been for some time past owing to the heavy shipments from all localities, also to accumulated stocks of fresh arrivals of Eastern, which are being sold at very low figures and come in direct competition with the local product.

General Produce Market.

OATS—Offerings are in excess of the immediate demand, causing a reduction of asking rates with a view of helping to clean up stocks. We quote: Milling, \$1.10 @ 1.15; Surprise, \$1.20 @ 1.30; fancy feed, \$1.10 @ 1.15; good to choice, \$1.07 1/2 @ 1.10; poor to fair, 85c @ \$1; Black, 90c @ \$1.20; Red, \$1.05 @ 1.15; Gray, \$1.02 1/2 @ 1.07 1/2 per cwt.

CRACKED CORN—Quotable at \$20.50 @ 21.50 per ton.

CORNMEAL—Millers quote feed at \$20 to \$21 per ton; fine kinds for the table, in large and small packages, 2 1/2 @ 3 1/4 c per pound.

OILCAKE MEAL—Quotable at \$37.50 per ton from the mill.

CORN—A recent shipping movement imparted a little life to the market, with some improvement in prices. Quotable at 87 1/4 @ 90c per cwt. for large Yellow, 87 1/4 @ 90c for small Yellow, and 95c @ \$1 for White.

SEEDS—There is no demand for any kind. We quote as follows: Mustard, brown, nominal; Yellow, —; Trieste, —; Canary, imported, \$4 @ 4.25; do, California, —; Hemp, 3 1/2 c per lb; Rape, 1 1/2 @ 2 1/4 c; Timothy, 6 1/2 c per lb; Alfalfa, 7c per lb. for California and 8 @ 8 1/2 c for Utah; Flax, \$2.25 @ 2.50 per cwt.

CHOPPED FEED—Quotable at \$17.50 @ 18.50 per ton.

MIDDLINGS—Quotable at \$17 @ 20 per ton.

MILLSTUFFS—We quote: Rye Flour, 3 1/2 c; Rye Meal, 3c; Graham Flour, 3c; Oatmeal, 4 1/4 c; Oat Groats, 5c; Cracked Wheat, 3 1/2 c; Buckwheat Flour, 5 @ 5 1/2 c; Pearl Barley, 4 @ 4 1/2 c per lb; Normal Nutrient, \$3 per case of 1 dozen cans; Breakfast Delight, \$3.25 per case of 2 dozen packages.

BRAN—Quotable at \$16 @ 17 per ton.

HAY—Weak tone to quotations. Wire-bound hay sells at \$1 per ton less than rope-bound hay. Following are wholesale city prices for rope-

bound hay: Wheat, \$9 @ 13 1/4; Wheat and Oat, \$9 @ 12 1/4; Wild Oat, \$9 @ 11 1/4; Alfalfa, \$8 @ 10; Barley, \$9 @ 10 1/4; Compressed, \$8 @ 11 1/4; Stock, \$7 @ 8 per ton.

STRAW—Quotable at 55 @ 65c per bale.

HOPS—Market inactive. Quotable at 15 1/4 @ 17 1/2 c per lb.

RYE—Is doing better. Quotable at 90 @ 92 1/2 c per cwt.

BUCKWHEAT—Quotable at \$1.15 @ \$1.20 per cwt.

GROUND BARLEY—Quotable at \$16.50 @ 17.50 per ton.

POTATOES—Stocks continue of large proportions. We quote: New Potatoes, — per lb; Sweet, \$1 @ 1.25 per cwt; Garnet Chiles, 45 @ 55c; Early Rose, 40 @ 50c; River Burbanks, 40 @ 50c; River Red, 30 @ 35c; Salinas Burbanks, 75 @ 90c; Oregon Burbanks, 65 @ 85c; Oregon Garnet Chiles, 50 @ 65c per cwt.

ONIONS—Are selling at a wide range. Quotable at \$1.50 @ 2.40 per cwt.

DRIED PEAS—We quote: Green, \$1.40 @ 1.50; Blackeye, \$1.60 @ 1.70; Niles, \$1.50 @ 1.75 per cwt.

BEANS—Good stock is firmly held. Trade slow. We quote: Bayos, \$1.90 @ 2.10; Butter, \$1.75 @ 1.90 for small and \$1.95 @ 2 for large; Pink, \$1.50 @ 1.62 1/2; Red, \$2 @ 2.25; Lima, \$2 @ 2.10; Pea, \$2.15 @ 2.25; Small White, \$2 @ 2.15; Large White, \$2 @ 2.12 1/2 per cwt.

VEGETABLES—String beans sell slowly, being poor. Asparagus of fancy quality brings full figures, receipts being light. Green peas are dull. Mushrooms are in moderate receipt. We quote as follows: Asparagus, 12 1/2 @ 22 1/2 c per lb for the ordinary run and 25c to 35c for fancy; Mushrooms, 10 @ 12c per lb. for common and 15 @ 25c per lb. for good to choice; Rhubarb, 8 @ 10c per lb; Green Peas, 4 @ 6c; String Beans, 10 @ 12c per lb; Marrowfat Squash, \$15 per ton; Green Peppers, 20 @ 25c per lb; Tomatoes, \$1 @ 1.50 per box; Turnips, 75c per cwt; Beets, 75c per sack; Parsnips, \$1.25 per cwt; Carrots, 35 @ 40c; Cabbage, 50 @ 55c; Garlic, 1 1/2 @ 2 1/2 c per lb; Cauliflower, 60 @ 70c per dozen; Dry Peppers, 10c per lb; Dry Okra, 15c per lb.

FRESH FRUIT—Some good pears on the market, offering at \$1.25 per small box. Apples are in good receipt. We quote: Apples, \$1 @ 1.50 per box for good to choice, and 50 @ 75c for common to fair; Choice Mountain Apples, \$1.50 @ 2 per box.

CITRUS FRUIT—Oranges of attractive quality are doing better. We quote: Fair to choice Navel Oranges, \$1 @ 1.75 per box; Seedlings, 50c @ \$1.25; Mandarin Oranges, 50 @ 75c per box; Mexican Limes, \$5 per box; California Limes, \$1 @ 1.50 per small box; \$2.50 @ 3.50 per large box; Lemons, Sicily, \$4 @ 5; California Lemons, \$1 @ 1.25 for common; \$1.50 @ 3 for good to choice; Bananas, \$1.50 @ 2.50 per bunch; Hawaiian Pineapples, \$2.50 @ 3; Mexican Pineapples, \$3 @ 4 per dozen.

NUTS—Almonds and walnuts are in good supply, but movement is slow. Fair demand prevails for Peanuts, keeping prices steady. We quote as follows: Chestnuts, 6 @ 8c per lb; Walnuts, 6 @ 7 1/2 c for hard shell, 8 @ 9c for soft shell and 8 @ 9c for paper shell; Chile Walnuts — @ — c; California Almonds, 10 @ 11c for soft shell, 6 @ 7c for hard shell and 11 1/2 @ 12 1/2 c for paper shell; Peanuts, 3 @ 4c; Hickory Nuts, 5 @ 6c; Filberts, 10 @ 10 1/2 c; Pecans, 5 @ 8c for rough and 8 @ 10c for polished; Brazil Nuts, 10 @ 11c; Cocoanuts, \$5 @ 5.50 per 100.

HONEY—Supplies keep ample. Prices are undisturbed. We quote: Comb, 10 @ 11 1/2 c per lb for bright and 8 @ 10c for dark to light amber; water white extracted, 5 @ 5 1/2 c; amber extracted, 4 1/2 c to 5c; dark, 4 1/2 c to 4 3/4 c per lb.

BEEWAX—Quotable at 23 @ 25c per lb.

BUTTER—The market has been steadily declining for some time, until now a pretty low basis has been reached. We quote: Fancy Creamery, 24 @ 25c; fancy dairy, 22 @ 23c; good to choice, 20 @ 21c; common grades, 17 @ 19c per lb; store lots, 11 @ 15c; pickled roll, 14 @ 18c; firkin, 14 @ 16c.

CHEESE—Prices steady. Buyers do not purchase freely. We quote: Choice fancy to new, 12 @ 13c; fair to good, 9 @ 11c; Eastern, ordinary to fine, 11 @ 14c per lb.

EGGS—Quotations have again been lowered, owing to the pressure of heavy supplies. We quote as follows: California ranch, 15 @ 16c; store lots, 11 @ 13c; Eastern Eggs, cold storage, \$1.50 @ 2.50 per case.

HIDES AND SKINS—Quotable as follows:

	Sound.	Culls.
Heavy Steers, 57 lbs up, per lb.	4 @ — c	4 @ — c
Medium Steers, 48 to 56 lbs.	4 @ — c	3 1/2 @ — c
Light, 42 to 47 lbs.	3 1/2 @ — c	2 1/2 @ 3c
Cows, over 50 lbs.	3 @ — c	2 1/2 @ — c
Light Cows, 30 to 50 lbs.	3 @ — c	2 1/2 @ — c
Stags.	3 @ — c	2 1/2 @ — c
Kips, 17 to 30 lbs.	4 @ — c	3 @ — c
Veal Skins, 10 to 17 lbs.	4 @ — c	4 @ — c
Calf Skins, 5 to 10 lbs.	7 @ — c	6 @ — c

Dry Hides, usual selection, 7c; Dry Kips, 7c; Calf Skins, 10c; Cull Hides, Kip and Calf, 4c; Pelts, Shearling, 10 @ 20c each; do, short, 25 @ 35c each; do, medium, 40 @ 50c each; do, long wool, 50 @ 75c each; Deer Skins, summer, 25c; do, good medium, 15 @ 20c; do, winter, 5c per lb; Goat Skins, 25 @ 40c apiece for prime to perfect, 10 @ 20c for damaged, and 5 @ 10c each for Kids.

TALLOW—We quote: Refined, 5 1/2 c; rendered, 4 1/2 @ 4 3/4 c; country Tallow, 4 @ 4 1/4 c; Grease, 3 @ 3 1/2 c per lb.

POULTRY—Dressed Turkeys, Young Roosters and Ducks show improvement in prices. We quote: Live Turkeys—Gobblers, 9 @ 10c; Hens, 10 @ 11c; dressed Turkeys, 10 @ 15c per lb; Roosters, \$3.50 @ 4 for old and \$5.50 @ 6.50 for young; Fryers, \$5 @ 6; Broilers, \$3.50 @ 4.50; Hens, \$4 @ 5; Ducks, \$4.50 @ 6; Geese, \$1.50 @ 1.75 per pair; Pigeons, \$2.25 @ 2.50 per doz for old and \$2.50 @ 3 for young.

GAME—Quail and Wild Ducks will be out of season after to-morrow. We quote: Quail, \$1 per dozen; Mallard, \$4 @ 5; Widgeon, \$1.25 @ 1.50; Teal, \$1.50 @ 1.75; Sprig, \$1.50 @ 2; Small Ducks, 75c @ 1; Gray Geese, \$2 @ 2.50; White Geese, 75c @ \$1; Brant, \$1.25 @ 1.50; English Snipe, \$2 @ 2.50 per doz; Common Snipe, \$1 @ 1.25 per doz; Honkers, \$3 @ 4; Hare, 50 @ 75c; Rabbits, 75c @ \$1 per doz.

PROVISIONS—We quote as follows: Eastern hams, 12 @ 12 1/2 c per lb; California hams, 11 @ 11 1/2 c; Bacon, Eastern, extra light, 12 1/2 c; medium, 10 @ 10 1/2 c; do, light, 10 1/2 @ 11c; do, light, boneless, 11 1/2 @ 12c; light, medium, boneless, 11c; extra light sugar-cured, 14c to 14 1/2 c; Pork, prime mess, \$14 @ 15; do, mess, \$17 @ 18; do, clear, \$19 @ 20; do, family, \$22 per bbl; Pigs' Feet, \$11.50 per bbl; Beef, mess, bbls, \$7.50 @ 8; do extra mess,

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bbls, \$8.50 @ 9; do, family, \$9.50 @ 10; extra do, \$11 @ 11.50 per bbl; do, smoked, 10c; Eastern lard, tierces, 7 1/2 @ 7 3/4 c; do, prime steam, 10c; Eastern pure, 10-lb pails, 10 1/2 c; 5-lb pails 10 1/2 c; 3-lb pails, 10 1/2 c; California, 10-lb tins, 9 @ 9 1/2 c; do, 5-lb, 9 1/2 @ 10c; do, kegs, 10 @ 10 1/2 c; do, 20-lb buckets, 10c; compound, 7c for tierces.

WOOL—Prices nominal, there being no business.

We quote spring:

California, year's fleece, 7 @ 8c; do 6 to 8 months, 7 @ 9c; do Foothill, 10 @ 11c; do Northern, 12 @ 13c; do extra Humboldt and Mendocino, 11 @ 13c; Nevada, choice and light, 12 @ 14c; do heavy, 8 @ 10c; Oregon, Eastern, choice, 10 @ 11c; do Eastern, poor, 7 @ 9c; do Valley, 12 @ 14c. We quote fall: Free Mountain, 6 @ 8c; Northern defective, 5 @ 7c; Southern and San Joaquin, 3 @ 5c.

San Francisco Meat Market.

Very little spring lamb is arriving. Following are the rates for whole carcasses from slaughterers to dealers:

BEEF—First quality, 5 1/2 @ 6c; second quality, 4 1/2 @ 5c; third quality, 3 1/2 @ 4 1/2 c per lb.

CALVES—Quotable at 4 @ 5c for large, and 6 @ 7c per lb for small.

MUTTON—Quotable at 7 @ 8c per lb.

LAMB—Yearlings, 8 @ 9c per lb; Spring, 12 1/2 @ 13c.

PORK—Live Hogs, on foot, grain fed, heavy and medium, 5c; small Hogs, 5 1/2 @ 5 3/4 c; stock Hogs, 4 1/2 @ 4 3/4 c; dressed Hogs, 7 @ 7 1/2 c per lb.

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Inter-Relation of Forces.

Water freezes and becomes ice at 32° F., whereas mercury only freezes at 39° below zero F.; olive oil, on the contrary, shows signs of congelation at from 40° to 45° F. The three substances quoted being all liquids, the difference in the loss of heat requisite to bring them to solidification is very great indeed, says the *Westminster Review*.

The action of heat on fluids or solids is equally various. Water boils at 212° F.; lead melts at 612°; the fusing point of gold is 2016° and of iron 3000°. We give these particulars in order to show what enormous changes can be effected by cold in the transmutation of a substance from a liquid to a solid, or by heat from a solid to a liquid state. Ether boils at 96° F., but has never been frozen by the severest cold. The forces exerted by the action and reaction of heat and cold are best exemplified under the head of steam, which has only been called forth and made use of by man since about the middle of the eighteenth century, but it has been in action on a gigantic scale in nature for probably hundreds of thousands of years, it being the opinion of many geologists, including Lyell, that it is the generation of steam, whether developed by the internal heat of the earth in a state of fusion or whether by that of the chemical action of the elements in the bowels of the earth developing heat, which, acting on water and thus generating steam, is the great force that throws up such enormous rocks and masses of lava as *Ætna* has lately been doing. The rocks and lava thus thrown up are in a state of fusion by heat; but they gradually cool by exposure to the air and form solid rocks and mountains. This action and reaction has been going on for thousands of years with little cessation.

Heat and cold, again, cause the oceanic currents on our earth between the equator and the poles, and *vice versa*, and thereby affect the earth's magnetism or polarity, not only on our globe, but probably all throughout the universe. This is borne out by the fact that the "aurora borealis" is decidedly an electrical phenomenon, which takes place in the highest regions of the atmosphere, since it is visible at the same time at places very distant from each other. Dr. Faraday conjectures that the electric equilibrium of the earth is restored by the aurora conveying the electricity from the poles to the equator."

Paper Tires for Bicycles.

The pneumatic tire for bicycles is unquestionably one of the greatest improvements ever made in those vehicles. But its cost is a serious matter. Rubber is at present the only material in use for such tires. Leather has been tried, but it does not seem to give satisfaction. Paper, however, has recently been the subject of experiment for this purpose; and *The Paper Trade Journal* reports that success has been attained. In fact, it is asserted that two paper tires will, on the machine, cost only two-fifths or one-half what a pair of rubber tires cost; and, being less yielding, the new material may last much longer. Its champions claim that it will not be so easily cut or punctured by glass or sharp stones, and will not break from constant squeezing and inflation so soon as rubber.

Unfortunately, the names of the inventors are not supplied by our contemporary, nor is it at liberty to mention the ingredients incorporated with the pulp for such tires to impart toughness and elasticity. But *The Journal* adds these particulars: Drawing paper put into a tube is an art already known to manufacturers. The ends of a tube may be united by shaving off the inside of one and the outside of the other, and using a special elastic, watertight glue where one overlaps the other. The hair used in place of interior linings is forced into the hollow of the tube before the union is made. A special instrument is used so that the packing is uniform.

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Box E, "Pacific Rural Press."

The Planet Jupiter.

Prof. E. E. Barnard lectured recently in Pioneer hall, S. F., under the auspices of the California Pioneer Society, on "The Planet Jupiter and His Satellite System." He described the peculiar features of the planet as seen through the telescope. Its surface is in variable condition and is changing constantly. When seen through the telescope it is a disk about as large as the thumbnail.

After detailing the belt markings and the spots on the northern and southern hemispheres, he described the large red spot which in 1878 appeared south of the great equatorial belt, elliptical in form and sharply defined. Ordinary markings on Jupiter are transient, but this red spot was the most prominent object on the planet for three or four years. It was about 8000 miles wide and 30,000 miles long, its area being equal to the surface of the earth.

Science has not learned what this spot was. The accepted theory is that the planet of Jupiter is a hot body—not heated to the point of incandescence, but warm enough to convert all the water on its surface into vapor, which fills the atmosphere with a dense strata of cloud surface. This is changing all the time. The presence of the red spot was perhaps due to some sort of an eruption, which dissipated the clouds; that is to say, made a hole through them, and the spot was the visible surface of the planet not obscured by the steam.

The four bright satellites of Jupiter are in every respect similar to our moon, revolving around the planet just as the moon revolves around the earth, except that their velocity is greater. The closest makes the circuit in 42 hours, the most distant (1,600,000 miles) in 17 days, while our moon takes 27 days to get around the earth. The reason they move so rapidly is the greater attractive power of Jupiter. Its attraction on the first satellite is 300 times greater than that of the earth on the moon.

List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR THE WEEK ENDING FEB. 6, 1894.

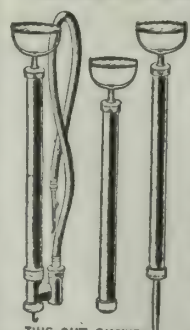
- 513,974.—SMELTING ORES—W. L. Austin, S. F.
- 513,981.—RECLINING CHAIR—Sarah A. Chase, Medical Lake, Wash.
- 513,983.—EXPLODING TORPEDOES—Jos. Clark, S. F.
- 514,416.—BOX FASTENER—Jos. Davy, Oakland, Cal.
- 514,431.—EXTRACTING SUGAR FROM CANE—De Conitck & Burr, S. F.
- 514,312.—WRECK CUTTER—R. H. Douglass, Colville, Wash.
- 514,182.—TOILET ARTICLE HOLDER—English & Gladwin, S. F.
- 514,354.—PACKING BOX—H. B. Everest, Riverside, Cal.
- 514,356.—MECHANICAL MOTOR—P. Frichette, Sheridan, Cal.
- 514,184.—AIR BRAKE COUPLING—S. J. Galloway, Samtlan, Or.
- 514,223.—STEP LADDER—E. W. Hammon, Davisville, Cal.
- 514,189.—CHAIR—Harvey & Amos, Los Angeles, Cal.
- 514,157.—PROCESS—W. P. Miller, Melrose, Cal.
- 514,272.—TRAILER—A. Prader, Spokane, Wash.
- 514,428.—GAS REGULATOR—A. H. Schluter, Oakland, Cal.
- 514,393.—MERRY-GO-ROUND—J. Thompson, Benecia, Cal.

FOR THE WEEK ENDING FEB. 13, 1893.

- 514,669.—HELIOMETER—L. W. Allingham, Los Angeles, Cal.
- 514,704.—SHEEP-SHEARING MACHINE—D. S. Chambers, Sausalito, Cal.
- 514,450.—CARTRIDGE STOP—M. H. Durst, Wheatland, Cal.
- 514,451.—CARTRIDGE STOP—M. H. Durst, Wheatland, Cal.
- 514,619.—PRACTICE BOOK—C. L. Ellis, S. F.
- 514,592.—COFFEE POT—Bessie F. Gage, Oakland, Cal.
- 514,559.—WATER MEASURER—W. L. Lambie, Los Angeles, Cal.
- 514,758.—EAVESTROUGH HANGER—A. R. Lewis, Shelton, Wash.
- 514,835.—NON-RESISTANT DEVICE—F. E. Mills, S. F.
- 514,691.—BOAT'S DAVIT—A. R. Paul, S. F.
- 514,662.—DUMPING CAR—N. H. Pine, Eureka, Cal.
- 514,686.—ANNUNCIATOR—J. E. Rickey, Oakland, Cal.
- 514,664.—COIN-CONTROLLED APPARATUS—G. F. W. Schulze, Berkeley, Cal.
- 514,778.—MANUSCRIPT HOLDER—R. W. Scott, San Jose, Cal.

NOTE.—Copies of U. S. and Foreign patents furnished by Dewey & Co. in the shortest time possible (by mail for telegraphic order). American and Foreign patents obtained, and general patent business for Pacific Coast inventors transacted with perfect security, at reasonable rates, and in the shortest possible time.

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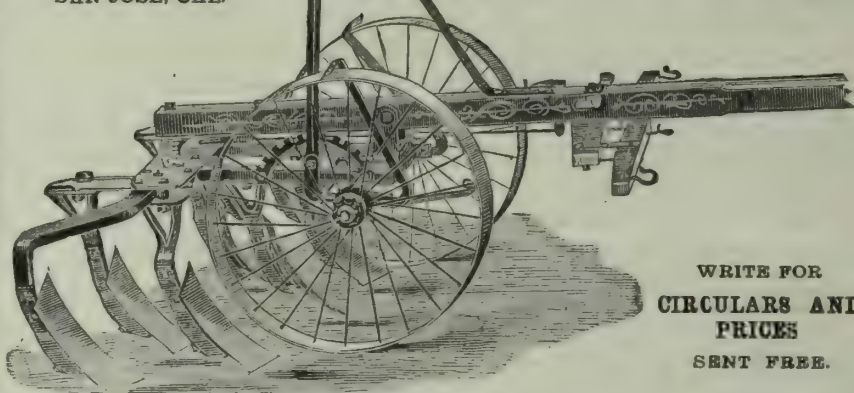
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Air Reduced to a Solid by Cold.

About a year ago Professor James Dewar of London converted air and its constituent gases, oxygen and nitrogen, into liquids by means of intense cold, says the New York Tribune. The temperatures necessary were 182 degrees below zero, C., for nitrogen; 192 below for oxygen, and about 200 below for air. Soon afterward, although it did not attract much attention then, he actually congealed air. In some public lectures given in London, a few weeks ago, he again produced solid air, at a temperature of 210 below zero, C., or 346 below, Fahr. This time the feat created a public sensation, and the non-scientific press is now making the matter generally known, although Professor Dewar has, in the meantime, done little but improve his apparatus so as to increase its output. He has not produced any more intense cold than before.

So small was the quantity of solid air made on this recent occasion that it could not be passed around for inspection conveniently. The demonstration of what he had done was made to the audience by means of a ray of light thrown by a lantern through the freezing tube upon a screen, and what was shown to be a liquid at one time afterward appeared in such a condition that it would not move when shaken.

These low temperatures, toward which the chemists have been striving for years, are to be regarded only to a limited extent as ends, and more as means to ends. To be sure, it would be a great thing to reach 273 below zero, C. (459 Fahr.), for this is the absolute zero below which it has been supposed impossible to go. And it was inaccurately reported last summer that a Frenchman, Pictet, had actually reached that goal. But the important practical phase of all this business is the change wrought in the properties of matter by such temperatures. Among the new points brought out this winter by Professor Dewar are that at 180 degrees below zero, C. (292 below, Fahr.), metals gain in tensile strength, steel becoming almost twice as strong as at ordinary temperatures; colors are somewhat modified, and rubber becomes more extensible. An electrical discharge, moreover, which usually goes through a vacuum with a beautiful luminosity was literally frozen out and driven back when the vacuum tube was reduced to a very low temperature.

The means employed in producing this cold, it will be remembered, is the evaporation of highly volatile substances. If, in a room where the air has a temperature of 70 degrees Fahr., one pours a few drops of water on the muslin covering of a "wet bulb" thermometer, the mercury will fall 10 or 12 degrees, possibly more, the result depending on the atmospheric humidity. But if, instead of water, alcohol is used, its greater evaporative power will lower the reading about 25 degrees, and good sulphuric ether about 50. Thus one can, with proper appliances, freeze water in a warm parlor. But there are much more volatile substances than these; namely, gases which have been reduced to liquids under enormous mechanical pressure, and then liberated. Sulphurous (not sulphuric) acid may be used to freeze mercury; chloride of methyl gives 70 or more below zero, C.; carbonic acid, 100 below; and bisulphide of carbon and nitrous acid, 140 below, C., or 220 below, Fahr. To liquefy oxygen, Professor Dewar employed three steps: First, he put the gas under great pressure, about 750 pounds to the square inch; this enabled him to secure the result at 145 below, instead of 192 below. Then he liberated nitrous oxide gas, which had been under a pressure of 1400 pounds, by which process he was able to produce a temperature of minus 90 C. around a small chamber, into which he introduced ethylene under a pressure of 1800. When the inner receptacle was full, evaporation was resorted to, and facilitated by a vacuum. This gave minus 145 degrees. Oxygen being thus liquefied and under pressure, it was employed in the same way as ethylene, freed from pressure and evaporated in a vacuum, and then the extreme temperatures already referred to were secured. There is enormous waste in handling these liquids. For every pint of oxygen in that form applied to use, Professor Dewar loses nine.

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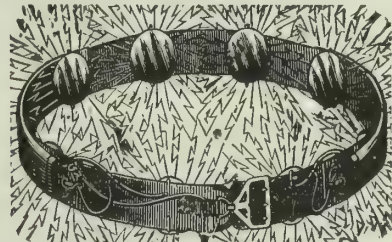
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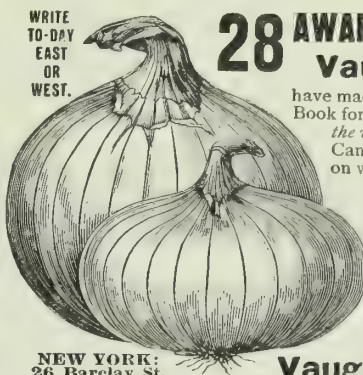
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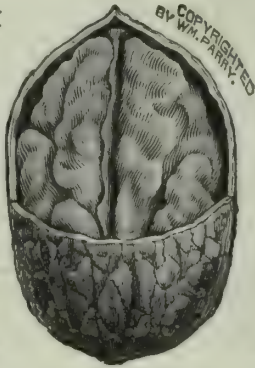
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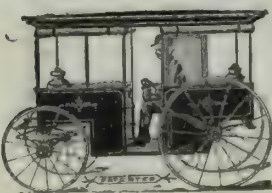
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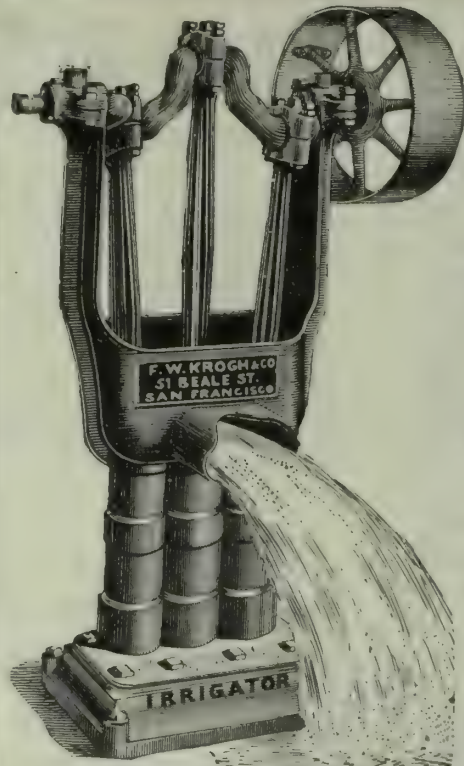
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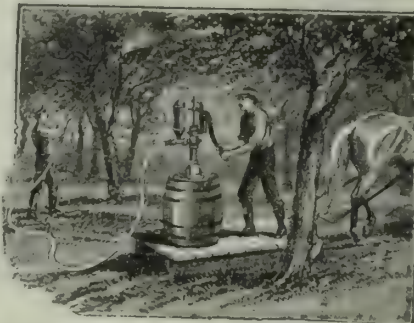
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PACIFIC RURAL PRESS

Vol. XLVII. No. 10.

SAN FRANCISCO, SATURDAY, MARCH 10, 1894.

TWENTY-FOURTH YEAR.
Office, 220 Market Street.

Bunco Games with Produce.

The way people are led to lend their names and reputations to sharpers on specious promises of rewards is surprising. It is not so wonderful that a producer, unused to business, may be led by an eloquent circular or letter to consign goods for sale to an irresponsible party, but that a country merchant, who knows something of business, should fall into an open trap certainly reflects no credit upon the interior merchant class. Evidently, one sharper knows the interior dealers better than they know him, for he played upon their credulity quite effectively. It seems that several men well acquainted with the business men of the State were employed by the sharper. They visited many of the important towns with good shipping facilities and appointed men in good business standing to act as the agents. They were to arrange with producers in their neighborhood to ship their produce to the bogus commission house in this city, and the agents did their parts well. They all had the confidence of the ranchers of their districts. Carload after carload was sent through their influence to the salesrooms of the sharpers.

The agents were joyful at the profit they were to get as the result of their efforts. They each held a contract which guaranteed them a certain monthly remuneration, as well as a commission.

The agents were untiring in their efforts to help along the business, and, although many of them had only shipped goods for less than half of the month of January, their commissions amounted to fairly good sums, and they sent in their bills accordingly. Several days later they each received very flattering replies congratulating them on their business enterprise and concluding with the information that a check for the amount of their bills would follow by the next mail. Of course, the checks were never sent, and before the dupes could compare notes and come to the city, the sharpers had flown after securing several thousand dollars' worth of produce, the proceeds of the sale of which they carried with them.

We give so much detail because the plan of working through reputable local agents seems somewhat original. Of course, the producer was disposed to entrust his produce to a man of good repute in his own town. He would be more likely to do this than to ship to a stranger in the city. It is difficult to understand, however, how the interior dealer would lend his name to getting shipments to a strange firm, even though he should be approached by a traveler whom he knew something of. It certainly indi-

cates weakness somewhere, when such a game is possible. That a smart country dealer would take an engagement with new parties, without suitable evidence of their responsibility, is strange in this age of the world. And that such a one could be led to serve as stool-pigeon to entrap his country friends, is almost incredible.

Of course, every one is likely, perhaps, to be caught at first on a new game, but if the tempted would only stop to think, he would soon conclude that it is not such a new game after all. It is merely a new way to work an old confidence game. There is something weak and lax, evidently, in our business methods, that such things are possible.

THE Los Angeles Chamber of Commerce proposes to throw its influence on the side of the orange-growers. President Freeman, in an address, said that the trouble with the orange country is not overproduction, but indis-

Children's Quarter, Golden Gate Park.

Our engraving gives a good view of the Children's Quarter, Golden Gate Park, which all visitors to the Mid-winter Fair should inspect. It is one of the most interesting features of the city's breathing place and one which returns more solid pleasure for its cost than any other. It is interesting to the adult and it is huge chunks of delight to the little folks.

For some years after the opening of the park the children's rights were not localized. They frolicked at will and often to the dismay of the gardeners. They had no particular possession, so they possessed the whole of it. Some efforts were made for their comfort and amusement, but nothing adequate or satisfactory. Some friends of the people and the park, when it was announced that money was available for some sort of memorial of the late Wm. Sharon, prevailed upon the executors of the estate to

establish a suitably arranged and equipped children's quarter and it was done. Since then the outfit has been extended and improved and it is now in the form shown in the engraving. The main building is of yellow stone. It contains resting and retiring places, lunch and confectionery rooms, etc., where things which the children like are sold at cost. On well graded spaces about the building are the play grounds, the goat and donkey departments, where a child can get two rides for a nickel, and near by is the circular structure shown in the picture,



CHILDREN'S QUARTERS IN GOLDEN GATE PARK.

criminate distribution of fruit in the Eastern market, and excessive freight charges. Mr. Freeman said that a general appeal should go up from southern California for a reduction during the remainder of the season. The present rate of \$1.25 per hundred, or \$250 per carload is more than the traffic can bear.

IT IS ANNOUNCED that A. Lusk & Co., wholesale dealers in canned goods and dried fruits, at 122 Davis street, and also proprietors of the A. Lusk Canning Company at 423 Brannan street, are again in financial troubles. Attachments have been laid by several large creditors. The firm claims that the attachments are illegal as its affairs have been in the hands of a receiver since the failure two years ago.

RICHARD GIRD of Chino has received 75 tons of beet seed from France. It is being distributed to farmers preparatory to the season's sowing. A large force will be put to work enlarging the capacity of the sugar factory as mentioned in last week's RURAL.

which is a permanent "merry-go-round" of large capacity and exhilarating speed. The whole outfit is surrounded by lawns and tree clumps, parterres of bloom, curving walks and well kept borders. The situation is in a warm, protected valley, most admirable for the purposes contemplated.

If one enjoys contemplation of child-life let him go to the children's quarter on a holiday afternoon and he will get great sights and sounds of it. With a handful of nickels he can give more pleasure to wistful, expectant children in an hour than he could compass by investing a hundred fold the time and cost in any other pleasure-producing agency.

THE largest shipment of live stock ever made from the Rogue river valley was made last week. There were 36 cars containing 800 head of beef cattle valued at \$20,000.

THE Petaluma Sportsman's Club has had a jay-killing contest, and it is held that the 356 jays destroyed means an increase of 1000 quails next year.

PACIFIC RURAL PRESS.

Office, 220 Market St.; Elevator, 12 Front St., San Francisco, Cal.

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ANY subscriber sending an inquiry on any subject to the RURAL PRESS, with a postage stamp, will receive a reply, either through the columns of the paper or by personal letter. The answer will be given as promptly as practicable.

ALFRED HOLMAN.....Editor
J. F. HALLORAN.....General Manager
E. J. WICKSON.....Special Contributor

San Francisco, March 10, 1894.

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The Week.

The rains continue, and, fortunately, are reaching neglected areas. The water distribution has been decidedly uneven this year. Doubtless the Midwinter Fair people believe most of it has dropped inside their enclosure. Reference to the useful table of the Weather Service on another page will show that while some points have been well supplied, others have had but half the average rainfall to this date, and only about a third of last year's precipitation. So long as this deficit exists we cannot complain of the clouds; they propose to keep it up until there is enough to go around.

This week ex-President Harrison is lecturing at Stanford University on Constitutional Law. Thus has the citizen who has held the highest office in the nation's gift become a teacher of the young. It is a comforting reflection that America has better uses for her deposed monarchs than the old world. She has use for their heads, but does not need to remove them from their shoulders.

We have had another local flurry in wheat, the natural outcome of the gamblers' method of produce dealing. While wheat actually sells for less than \$1 a cental, sales for May delivery have been made as high as \$1.16½. It is said that 75,000 tons more wheat has been sold than really exists. Even the gamblers' organization has had to check the gambling by new rules tending to throw blocks in the way. And yet some people claim that such traffic is a benefit.

It is now announced by telegraph that the Senate is likely to do something for California in amending the Wilson tariff bill on fruit and fruit products. The promise is that a duty of 1½ cents per pound has been placed on prunes, raisins, currants and all other dried fruits. Senator White proposed to have all dried fruits put in one schedule and a uniform duty on all. Further than this, it is believed that a change in the wine schedules, as agreed upon by California and Eastern winemen, has been adopted by the committee.

By ACTUAL COUNT 375 cases, containing 162,000 eggs, were shipped from Petaluma to San Francisco last Saturday morning. It is claimed that this is not an unusually large shipment.

Wool Growers and Wool Manufacturers.

During their own depression and hopelessness of saving their industry until radical changes are made in Government policy, the wool-growers of the country will feel profound sympathy for the wool manufacturers in their disastrous condition and dark outlook. For nearly a quarter of a century the growers and manufacturers have labored together to build up their branch of the textile interests of the country to a standing worthy of a great and independent nation. Wonderful results were achieved by the co-operation. It is true there have been times when the growers felt inclined to distrust the manufacturers and there were manufacturers who merited the distrust and seemed to cherish the narrow notion of building up American wools without American sheep, but such times and such men were exceptional. The rule was the other way. The sentiment of the wisest manufacturers has always been otherwise, and this sentiment was on a recent occasion forcibly presented by a prominent manufacturer of New York State in these words:

I am not one of those manufacturers who have been in favor of free wool, but I am willing to stand side by side with the sheep and get kicked, in Congress or anywhere else. I never yet met a manufacturer who was in favor of free wool who did not want his goods protected. Let us stand together for protection to both. Let the farmer as well as the manufacturer be taken care of. His husbandry is just as essential. So let us stand side by side and stand or fall together. When the policy of free wool is introduced into this country and maintained for a very short period, it means free goods and nothing else, and do not delude yourselves with any other idea.

And how true this declaration is, is seen by the present condition both of growers and manufacturers' interests. Our readers who have sheep know well enough what they have undergone and how at present there is nothing to see but mutton in their flocks. When sheep have to go unshorn, when flockmasters tell the shearers they may have the wool if they will take it off, and the gift is refused, it does not need further description to indicate the disaster which has come to the wool-growers through the menace of a hateful un-American policy. This state of affairs our readers know too well, but they may not understand the situation in which their old allies, the manufacturers, find themselves. Information of this is given in a report, which we have just received, by S. N. D. North, secretary of the National Association of Wool Manufacturers. We have known Mr. North personally since 1865, and we are sure that his statements are made conscientiously and from full knowledge. He says:

At the last annual meeting of the association, the secretary said in his report that the year just passed had been one of remarkable activity in wool manufacture, unprecedented since the days of the Civil War. He reported a great increase in machinery manufacture since 1890, but added that the experience of the year proved that under normal business conditions, with the existing tariff, the consuming capacity of the people was fully equal to its productive capacity as then organized.

At the end of another year, the secretary has to report the industry in the midst of a depression more profound and far-reaching than has ever before overtaken it in this country. More than one-half of the machinery has been idle for six months or more; and the proportion of idle machinery is steadily increasing. The market, while practically bare of goods, will absorb no more than suffices for a hand-to-mouth demand; the shrinkage in the values of stocks and materials has been something appalling and unprecedented, and the immediate future offers no prospect of any improvement in these distressing conditions.

A more complete and painful contrast in the condition of any industry, in any country, was never known than has distinguished wool manufacture in the years 1892 and 1893. The losses incurred in this suspension of business and shrinkage of values amount up into the millions of dollars. The hardships that have accompanied them, through the non-employment of labor, beggar description.

With such a situation among consumers of wool, the growers of wool have no future to hope for. Their condition is more hopeless than that of the manufacturers, for those of them who have most capital and the best machinery may be able to survive almost any conceivable competition perhaps, with cheap foreign wool for raw material. But the local mills, which have been anticipated to localize their beneficent industry throughout the country and to distribute the benefits of home manufacturing, cannot be multiplied, nor can those existing be maintained. If our manufacturing is to survive at all, if threatened policies prevail, there must be centralization of the interest in the oldest and richest parts of the country or in the foreign centers of wealth and population. In one case the West will become provincial, in the other the whole country will share the same fate.

Is it any wonder that the repentant wool-grower who aided by his vote to bring about this condition of affairs upon his business now begins shearing at the tail, as the story runs, because he is ashamed to look a sheep in the face?

THE Sicilian lemon-growers will have sorry returns from this winter's shipment to the United States. Advertisers from New York state that the present is the most disastrous season they have ever experienced. It seems that the season opened well enough in October, and continued prosperous until the end of December, but with the opening of January the demand suddenly slackened, most sur-

prisingly, and within two weeks lemons were sold at such ruinously low prices that importers lost not only the profit they made in the early part of the season, but also tens of thousands of dollars additional. Prices on Feb. 5, 1893, ranged from \$2 to \$3.50 per box for fair to fancy lemons, while on the same date this year only from 75 cents to \$2.50 could be obtained for lemons of the same grade. At the auction sale in New York March 2d prices ranged from 90 cents to \$2.75 per box, showing a somewhat improved market, but there appears to be no chance, under the existing conditions, for importers to offset their losses during the remainder of the season. Excessive shipments, hard times, and the fact that California is filling the Western markets, are attributed as the causes of the low tide in lemon affairs.

THE San Francisco Academy of Sciences has just taken action in favor of preserving the remnant of rare native animals to which we alluded two weeks ago in connection with the buffalo question. It announces that the only remaining herd of buffalos in Yellowstone park has been wantonly destroyed by hunters and sportsmen, and that the only colony of beavers in the same park has been destroyed by maliciously inclined hunters. The Academy regards the destruction of these and many other of our large and interesting families of animals as not only a loss to science and education, but a matter of deep regret. It holds that this wholesale destruction of game is due to insufficient guard and incomplete management and to lack of deep interest in the preservation of game by those employed by the Government for that purpose. It therefore calls for strict military control of all the great national parks and that reservations be set apart for protecting and preserving interesting native forms of animal life. The proposition is a good one.

THERE has been arranged a competitive display of fruits in the Horticultural building at the Midwinter Fair during the coming week, in which it is expected a number of counties will take part. Each county or locality is to enter its best specimens and the fruit is to be marked by numbers alone so that the judges shall know nothing of its geographical origin. It is an enterprise to concentrate the best fruit in the Fair at one place and to add another item of interest to visitors. It is expected that the competition between the different regions for the award of superiority will excite additional interest. The committee appointed to judge the citrus exhibits has been announced as follows: Prof. E. J. Wickson, State University; D. E. Allison, fruit merchant; Alexander Craw, State Board of Horticulture; Mr. Gillette of Butte county and I. C. Wood of Ontario, fruit-growers. It is expected that competitive displays of apples will also be held, with separate judges, not yet announced.

WE are to have a little Italy in the San Fernando Valley. It is reported that an association under the lead of Salvini, the great Italian actor, has purchased a large tract of land, and it is their purpose to make it one of the most attractive fruit ranches in California. Plans are being drawn by a San Francisco architect for a magnificent villa, to be built in the center of the estate, which, when completed, will be almost an exact copy of Tommaso Salvini's palatial country residence at Monte Catini in Italy. Such enterprises, if well managed, will be satisfactory to their owners, and they will do much to make our country better known in circles abroad where there is plenty of available capital which often is put to less profitable use than the development of California properties. Of course the management of such undertaking is the key to their success. It is perhaps easier to fail than to succeed.

ONE of our characteristic productions is to be duly installed at the national capital. The Department of Agriculture has fallen heir to the large section of a California redwood tree which was a feature of the Interior Department's exhibit at the World's Fair. After the fair the Interior Department presented the tree to the Agricultural Department, which decided to remove it to Washington and place it on the grounds of the department. A concrete foundation for it was constructed, and on this the tree will stand. The interior has been removed throughout the entire length, so as to leave a circular chamber 16 feet in diameter. In this hollow a museum on a small scale is to be established. A spiral stair is constructed so that persons can walk to the top, over which there will be a glass roof.

REFERRING to what we recently said of the desirability of good seed grain we note that experiments have been made with planting wet wheat by Washington farmers, and it has been found that not more than one-third of it will grow, and that which does grow yields a weak and inferior stalk. In this case wet wheat means grain that was caught by the fall rains and snows without shelter. There was a vast amount of this at the North last fall, for lack of sacks and cars.

From an Independent Standpoint.

The close of Mr. Gladstone's political life, the grave utterance in which he bade adieu to Parliament, the opening of battle between the Commons and the Lords, the accession of Lord Rosebery to the Premiership, the promise of the new government to Ireland—these great events which have crowded the British record of the past few days are so profoundly important in their relationship to the wide world of English speech and English civilization as to come directly home to the interests of every thoughtful American. Memories of old grievances, differences in commercial interest, and some less respectable motives make twisting the tail of the Lion a favorite American sport; but the feud between the two countries, if a little family bickering may be called by so harsh a name, is a superficial one; and over and above and beyond it stands the great fact of identity of blood, of race history, of literature, of political ideals and of ultimate destiny. Whatever affects the political, intellectual and moral life of the British Empire must, in the nature of things, affect as well the political, intellectual and moral life of the United States of America; and it is this great fact which gives to contemporaneous English history its interest and value from the standpoint of American observation.

It is essential to the understanding of current events in England in their true significance to bear in mind the difference between the real and the nominal character of the British Government. England ranks as a monarchy, and has, in fact, a hereditary sovereign; a hereditary House of Lords nominally co-ordinate with a representative House of Commons; and a State church which combines certain political functions with the service of religion. But while thus fully equipped not only with the system, but the actual personal organization of Monarchy, England is to all practical intents a Republic. While the Throne, the Lords and the Established Church wear the mask of authority, and amuse themselves with pomps and ceremonies, the substance of authority, the real power to devise policies and to enforce them, abides with the House of Commons. Government, while running in the name of the Queen, and performing its acts under the seals of the Lords and of the Commons, is practically by the Commons alone. The Ministry, which bears a sort of resemblance to our Cabinet, is made up of the committee chairmen of the Commons, and in its hands the practical direction of affairs rests. By a polite fiction, its head—the Prime Minister—is chosen by the sovereign, but in practice the sovereign has no choice, as she must name the man previously selected by the Commons. No Prime Minister can retain his place under an adverse vote of the Commons, so its power to dismiss the head of the Government is absolute and continuous. It is as if our President, instead of holding office for a specific term by election, were subject to dismissal by the House of Representatives at any time. As the administrative head of the Government, directly representing the Commons, the Prime Minister is the paramount authority. The Throne takes the initiative in nothing; it makes no appointments outside the royal household except by dictation from the Minister; it does not even dare make a public expression upon any political question. Of the many scores of "Speeches from the Throne" delivered to the Commons during the past fifty-seven years in the name of Queen Victoria, not one was ever written by her nor even in expression of her ideas. The fiction which supports the Throne requires another fiction, namely, that the will of the present Government is the will of the Throne. Thus, the Throne is nominally Liberal or Conservative in its views and policies as the Liberal or Conservative party happens to dominate the House of Commons.

The nominal powers of the Throne are exercised by the Prime Minister; its actual powers are such only as belong to the influence of exalted rank in the social world of England. This is, of course, a very considerable power, and it is her wise use of it that has given Victoria her best title to the respect and affection of the English people. The House of Lords, like the Throne, is hereditary, and the powers which it theoretically holds, rest solely upon tradition and privilege. Since the Commons control the finances of the realm, since it is in actual command of the military and naval forces, since in its pleasure it can create a majority in the House of Lords, since its word is law in all things, the very existence of the Lords as a political body plainly rests upon its sufferance. It will readily be understood that in this position the House of Lords takes good care to keep on good terms with the Commons; that is, it usually passes with haste and cordiality whatever the Commons submits for its approval, for it knows only too well that should it be stubborn there is a ready way to put it aside. Thus it is that only upon very rare occasions

do the Lords display any spirit in opposition to the Commons; and never is this done unless the government—that is, the majority in the Commons—is weak.

This brings us to the present crisis. Mr. Gladstone's government has been supported in the Commons, not by a strong united party representing the will of the English people, but by a combination made up of Liberals (who may be likened to the Democratic party in America), Advanced Liberals (who somewhat resemble our Populists), and of Irish members who stand for home rule in Ireland, and with anybody who will undertake to promote their cause. Thus, while actually in power, Mr. Gladstone's government has been, in a sense, a weak one.

It is beyond question that the sympathies of the English people have not been with Mr. Gladstone in his Irish policy. He contrived last year, as all the world knows, to put his Home Rule measure through the Commons, but it was by a coalition vote, the purely English members voting for it being far in the minority. In this situation the Lords saw, or thought they saw, a chance to make a stand in which they could rely upon English public sentiment for support. When the bill was sent up to them they voted it down by a large majority; and then, having the bits in their teeth and being flushed with the vanity of unwonted courage, they rejected two or three other measures, among them a bill to make the responsibility of employers to their servants more definite, and another transferring certain powers of parish administration from the church to the ordinary civil government. In this situation Parliament adjourned, and, after a recess of some weeks, it came together again two weeks ago.

The action of the Lords of course made a crisis and in the English political world little else has been talked of these three months past. Mr. Gladstone's government had to acquiesce in defeat at the hands of the Lords and face the contempt of the public, or had to undertake the task of "mending or ending" the Lords. How great the task involved in the latter course, Americans can hardly comprehend, for the Lords, though largely bereft of direct power, are entrenched in the traditions of the realm and in all that goes to make up its political and moral constitution. Furthermore, they are in themselves, independent of their political status, a powerful branch of the body social. It is understood that if the Lords go down it is but another move in the game of sequence to disestablish the church, and another to unhorse the Throne itself, and then—Democracy! All this, to the conservative English mind, would be the toppling down of moss-grown towers, the loosening of the bonds which bind the empire, the rejection of the system under which England has grown the mistress and the arbiter of the world and the mother of nations. To many it would seem the opening wide of the floodgates of universal disaster.

Mr. Gladstone, to whom in this crisis all eyes have turned, is a very old man. He was born in 1809; he entered Parliament in 1832; for forty years he has been a great political and social leader; for a quarter of a century he has been the foremost man of the British Empire. In the prime of life, long ago, he took up the cause of progress, leading away from the traditions of Monarchy, towards the ideals of Republicanism; and from that day his course has been direct as the flight of an arrow. Under Gladstone's leadership the small English tenant and later the English laborer gained his political rights; under Gladstone's leadership the House of Commons has been made in reality as in theory representative of the British people; under Gladstone's leadership the Established Irish Church, so hateful to the Irish people, was put aside; under Gladstone's leadership one monument of privilege after another has been thrown down and destroyed; under this same leadership the English government has expanded to match the widening of the times and conditions of the world. For nearly fifty years Mr. Gladstone has stood upright, sword in hand, against Privilege, against Conservatism, against Hereditary Authority and Hereditary Wealth, the most conspicuous, the most potent, the most persistent and gallant champion of Progress and Equality in all the wide world.

After a season of rest Mr. Gladstone returned to London three weeks ago, and the world has waited to hear in what manner he would meet the crisis. The time came on Thursday of last week. He rose from his bench in the Commons amid such thunders as Parliament House has rarely heard, and begged leave to address the House upon the recent rejections by the House of Lords. It had been given out that he was about to resign. This was to be his last speech in the House of Commons; and the counsel he was about to give would be his legacy to his party and its inspiration in times to come. Mr. Gladstone spoke with all the energy of his prime, and with all his old charm of voice and manner. The government, he said,

would accept the amendments of the Lords to a minor bill which he named, to bring the controversy to a conclusion, but under protest and with the hope of soon reversing them. But, he went on, the questions raised between the assembly elected by the people and the other assembly representative of hereditary privilege were of "considerable variety," and once raised they must "go to the issue." There was, he said, a higher authority than the House of Commons, "namely, the authority of the nation, which must in the last resort decide." He said much more, but it was to the same purpose; it was, in effect, a notice to the House of Lords that its place in the English political system is no longer to go unchallenged. It imposes upon the Liberal party of which Mr. Gladstone has long been the leader, with all the solemnity of high authority, the duty of "mending or ending" the Lords.

On Saturday, Mr. Gladstone resigned the Premiership. He explained to the Queen in his official interview that the burden of his four score and four years, with its incidents of failing sight and increasing deafness, were more than he could bear in connection with the cares of State. He begged leave to lay down his responsibilities and to retire to the quiet of country life. He advised the Queen to bestow the Premiership upon his ministerial associate, Lord Rosebery, which she promised to do. The Queen then asked Mr. Gladstone to accept a peerage, but as he has lived and wrought so he prefers to die—a Commoner; and the compliment was respectfully declined. Thus passes from the greatest stage of the world the foremost actor of modern times.

Nobody with any name for sound judgment in line with modern ideas, claims that there is any just place in the English system for either the Throne, the House of Lords or the Established Church. They are outworn and belated survivals of past times and conditions. They have no part in the actual working political machinery of this age. If they were wiped out of existence to-morrow it would make no immediate practical change in English policies. Any other people would have done with them long ago. But to the dogged conservatism of the English character, the thing that is, that has long been, that is bound up in the history and connected with the fame of England, is very dear. In a pinch sentiment overrides all other considerations. For this reason we do not expect for many years to come to see the "ending of the Lords," but it is not to be doubted that the world will soon see a very neat job of "mending." The English people will not do away with the House of Lords but they will do with it as they have done with the Throne, namely, strip it of all power to block or seriously delay the will of the Commons. The body which represents only tradition and a class, will be reduced to practical nullity but the face of names will go on.

The new Prime Minister, Lord Rosebery, is the strange combination of a hereditary earl holding to advanced Liberal views. He is the outspoken enemy of the whole fabric of sham and masquerade which makes England a Monarchy in name while it is a Republic in fact. He starts out to reform the Lords, of whose body he is a member; he promises to stand by Irish Home Rule; in short, he will undertake to carry on the Gladstone policies. However, the leadership of a Liberal government by a hereditary peer is an open anomaly, and in the judgment of the best critics of English politics it cannot long endure. It is hardly expected that he will be able to do any of the things that would have been easy enough for Mr. Gladstone if he had the strength of his prime and a ten years lease of life. So far as can be seen, there is nobody in all the Liberal ranks able to fill the vacant place. But the world never waits for a man. When particular qualities are wanted they are always found; and nobody who has given heed to the lessons of history will expect the cause of Democratic progress in England to wait because Mr. Gladstone has sought repose.

Among the bequests of the late J. C. Wilmerding, who died in this city a few days ago, is a gift of money in trust to the regents of the State University for the foundation of a school of manual training. The object, as defined in the will, is "to teach boys trades fitting them to make a living with their hands, with little study and plenty of work." We have put the phrase in italics because it expresses significantly the sentiment which prompted the gift, and because it brings up, in a way likely to attract public interest, a very important question. In the opinion of Mr. Wilmerding, clearly, the system of popular education which makes much of scholasticism and nothing at all of manual industry is mistaken and wrong. That this opinion was not a mere whim, but a genuine and profound conviction, is sufficiently attested by the way in which it was expressed; and it has the special value attaching to the judgment of a man of wide observation of men and things, himself eminently successful in business life.

The idea so emphatically expressed in the phrase,

"little study and plenty of work," as applied to the education of boys—and of girls, too, for that matter—is one which practical men have very often in mind. It is not often put into words, and almost never into print, because it seems by a false construction to be in conflict with the idea upon which the American common school is based, and therefore opposed to popular intelligence. In truth, we have made our school system a thing so holy in the public mind that to question the wisdom of its foundation or of its methods is held almost equivalent to denying the Faith. It is only when some strong voice is heard, like that which calls out from Mr. Wilmerding's grave, that it seems fit or even decent to discuss the matter at all. Of course, this is all wrong; our system of education is very properly a thing close to the public heart and the public pride; but if its usefulness is to be conserved, it must be held subject to public criticism and to amendment as experience suggests and as times and conditions change.

It is reasonable to ask if our schools are on the right basis—if we are, through them, giving to the rising generation of Americans the kind of culture best suited to their necessities and best calculated to promote the public welfare. The *RURAL* is frank to say that it thinks not. The system turns out too many half-educated and inefficient people. Somehow, in four cases out of seven, the public-school graduate approaches life with the idea that labor is a thing to be avoided, if not despised; that it is better to live by one's wits than to live by toil; that respectability requires soft hands and holiday manners. It is this utterly false notion that fills the country with shabby gentility and makes quacks in every department of professional and business life. It is this which makes a score of applicants for a clerkship against one application for a job of manly hard work. To some extent our system of popular education is responsible for this state of things. No matter what it assumes to do; it tends, in fact, to lead boys away from the workshop and the farm and to fill their minds with ideas and plans less wholesome and hopeful. And just as truly, it leads the thoughts of girls away from the sweet and wholesome things of life and sets them to thinking about woman's rights and fashionable society. Our educational system does this because it is largely dominated by sentimental and impractical people. The conceptions of very many teachers are purely scholastic; they have small relationship or none at all with the practical things of life, and they lead the mind of childhood into an abstract, artificial and unwholesome world. We believe, profoundly, that a boy brought up in a workshop under an efficient and careful master, or on a farm under good discipline and instruction, has a better chance for a successful career than the boy ground through the mill of the average school, public or private. We would not eliminate the principle of study nor subordinate it; but would combine it with labor and apply it to practical things. It is by such combinations and such applications that strong and capable men and women are produced.

Rainfall and Temperature.

The following data for the eight days ending 5 A. M. Wednesday, March 7, 1894, are from official sources, and are furnished by the U. S. Weather Bureau expressly for the *PACIFIC RURAL PRESS*:

CALIFORNIA STATIONS.	Total rainfall for the eight days.	Total seasonal rainfall to date.	Total seasonal rainfall last year to same date.	Average seasonal rainfall to date.	Maximum temperature for the eight days.	Minimum temperature for the eight days.
Yuma.....	.74	2.16	.38	2.98	80	34
San Diego.....	.96	4.62	4.89	7.77	58	36
Los Angeles.....	.35	6.59	20.84	14.91	60	36
Keeler.....	1.60	2.90	2.32	64	23	
Fresno.....	.24	6.12	7.64	6.23	64	34
Sacramento.....	.40	12.88	18.58	15.04	56	34
San Francisco.....	.52	16.02	17.50	19.09	56	38
Red Bluff.....	1.38	17.23	26.63	18.22	56	30
Eureka.....	2.32	43.88	29.87	34.37	52	32

Corrected Statements.

In the printing of Mr. Robert Ashburner's papers in the last two issues of the *RURAL* there were errors which necessitate the following re-statement:

On page 108, in the first column, paragraph beginning "experienced dairymen," should read at close as follows: A cow that is in good flesh at the time of calving is a better cow for giving milk than the same cow would be if calving in low condition, *not* cow condition.

On page 144, the value of products of Daisy Hinman should be \$68.28, and *not* \$28.68.

How to Live Cheaply.

The Scientific Aspect of the Food Question.

We give below some reading especially pertinent to hard times. It not only gives information as to the nutritive value of various human foods, but presents very interesting economic information as to the cost of food. The statement is condensed from a paper by Prof. Charles D. Woods of the Storrs Agricultural Experiment Station in the Report of the New Jersey State Board of Agriculture:

The eating of food is a simple matter, but the ways in which its different constituents are utilized in maintenance of life are far from simple. Our bodies and the food we eat are composed of the same chemical elements, and the compounds of these elements in food are quite similar to those which make up the body. * * * The way of finding out how food is used consists in the comparison of the income with the outgo of the body. The body creates nothing for itself, either of material or energy. All must come to it from without. * * * The science of nutrition, as it is understood to-day, is a matter of definite quantities of income and expenditure, measured in terms of chemical compounds, and of heat and mechanical energy.

The chief two uses of food of animals are: First, to form the materials of the body and make up its wastes; and second, to yield energy in the form of heat to keep the body warm, and muscular and other power for the work it has to do. In forming the tissues and fluids of the body the food serves for building and repair. In yielding energy it serves as fuel.

The different nutrients of food act in different ways in fulfilling these purposes. The principal tissue formers are the protein compounds. These form the framework of the body. They build up and repair the nitrogenous materials, as the muscle and bone, and supply the albuminoids of blood, milk and other fluids. The chief fuel ingredients of food are the carbohydrates and fats. These are either consumed in the body or are stored as fat to be used as occasion demands. In being used as fuel the nutrients of the food tend to protect each other and the materials of the body from being consumed.

Heat and muscular power, like mechanical power, light and electricity, are forms of energy. The energy is latent in the food and is developed as the food is consumed in the body. * * * The value of food for fuel is expressed in terms of potential energy. The quantities of potential energy in food are determined by experiments with an apparatus called a calorimeter. The unit commonly used is the *calorie*, the amount of heat which would raise the temperature of a kilogram of water one degree centigrade (or a pound of water four degrees Fahrenheit).

Taking ordinary food materials as they come, the following general estimate has been made for the average amount of energy in one-hundredth of a pound of each of the classes of nutrients:

In 0.01 pound protein.....	18.6 calories.
In 0.01 pound fats.....	42.2 "
In 0.01 pound carbohydrates.....	18.6 "

[Printed tables were distributed showing proportions of each of the three constituents in one pound of various kinds of foods.] The composition of cooked canned corned beef is of considerable importance. Its high content both of proteins and fats is due to the loss of water that comes from the process of cooking and preparation. It furnishes pound for pound more protein than the other specimens of beef, and nearly equals the highest of them in its potential energy. From personal observation also of the methods of its manufacture, I can recommend it as one of the most excellent and economical of foods.

The vegetable foods differ very materially from the animal foods in both composition and digestibility. For the most part they are not as completely digested, and more energy is used up in the assimilation of the digested portions than is the case with animal foods. So that in general a given weight of protein or fat from a vegetable food will not furnish as much material for the use of the body as the same weight from animal sources. * * * Beans are very rich in protein, and on this account are very valuable food. Corn meal differs from wheat flour in having more fat and less protein and carbohydrates. The total energy (food value) of these two foods is nearly the same.

In being consumed in the body to furnish heat and muscular energy the nutrients replace one another in proportion to their potential energy. * * * It has been estimated that a man, to keep his body well nourished, requires about 0.28 lb. of protein and sufficient quantities of fat and carbohydrates to furnish, together with that of the protein, about 3550 calories of potential energy. He would also need a certain amount of mineral matters and water. Sufficient nutrients to furnish that amount of potential energy would be contained in the following food materials, which would therefore suffice for a day's nourishment:

FOOD MATERIALS WHICH WOULD FURNISH NUTRIENTS FOR ONE DAY FOR A MAN AT MODERATE WORK.

KINDS OF FOOD.	Total Food Materials.	Nutrients.				Calories of Potential Energy.
		Protein.	Fat.	Carbohydrates.	Water.	
Beefsteak.....	.70	.124	.101	.....	.....	600
Wheat bread.....	1.40	.123	.024	.788	.....	1,790
Potatoes.....	1.60	.031	.....	.243	.....	510
Butter.....	.18	.....	.153	.....	.....	650
Total.....	3.88	.278	.278	1.031	.....	3,550

These materials are daily expended in building up tissues, etc., and since the tissues are made up of the food, practically all the digested protein, fats and carbohydrates leave the body finally as urea, carbonic acid and water.

The daily income and expenditure of the human body may be balanced in this way:

ESTIMATED DAILY INCOME AND EXPENDITURE OF THE BODY OF A MAN AT MODERATE WORK			
Income—		Outgo—	
Protein.....	0.28 lbs.	Urea.....	0.10 lbs.
Fats.....	0.28	Carbonic acid.....	2.67
Carbohydrates.....	0.99	Water.....	5.40
Mineral matters.....	0.05	Mineral matter (digested).....	0.04
Water of food and drink.....	4.40	Undigested matter.....	0.09
Oxygen.....	2.30		
Total.....	8.30	Total.....	8.80

The cost of food is the principal item of the living expenses of the people—of all, indeed, but the especially well-to-do. In the Report of the Bureau of Statistics of Labor of Massachusetts for 1884 there is summarized the results of investigations into the cost of living of people with different incomes. In Massachusetts, in Great Britain and in Germany, dividing expenses into those for food, clothing, rent, fuel and sundries, the percentage of the whole income expended for food is as follows:

	Annual Income.	Per Cent for Food.
Families in Germany—		
Workingmen.....	\$225 to \$300	62
Intermediate class.....	350 to 600	55
In easy circumstances.....	750 to 1,100	44
Great Britain—		
Workingmen.....	500	41
Massachusetts—		
Workingmen.....	350 to 400	64
".....	450 to 600	63
".....	600 to 750	59
".....	700 to 1,200	56
".....	Above 1,200	51

Although the cost of food is so great, and although the health and strength of all are so intimately connected with and dependent upon their diet, yet even the most intelligent people know less of the actual uses and values of their food for fulfilling its purposes than of almost any other of the necessities of life. People are afraid to economize in food, and will pay higher prices for a less nutritious article. The best food in the sense of that which is the finest in appearance and flavor, and which is sold at the highest price, is not generally the cheapest or the most economical, nor is it always the most healthful.

The New York *Tribune* coal and food fund have sent to many poor families in New York the following supplies, for which they paid one dollar:

KINDS OF FOOD.	Nutrients.				Calories of Potential Energy.
	Weight, lbs.	Protein, lb.	Fat, lbs.	Carbohydrates, lbs.	
Hominy.....	5 0	0 460	0 190	3 530	8,225
Oatmeal.....	2 0	0 204	0 142	1 368	3,690
Cornmeal.....	5 0	0 450	0 190	3 530	8,225
Rice.....	2 0	0 148	0 008	1 688	3,260
Codfish (salt).....	2 0	0 212	0 004	.....	410
Beans.....	8 0	1 848	0 160	4 736	12,330
Salt pork.....	2 0	0 018	1 656	.....	7,010
Tea.....	0 5	.....	.....	.....	.....
Totals.....	26 5	3 430	2 350	14 752	43,740

The above would furnish enough nutrients for a man at moderate work for 12 days. * * * We waste at the store, at the market and in the house enough to make us wealthy if we would only save. The fathers and mothers do not understand the little arts of economy and the sons and daughters do not learn them, and we are somewhat inclined to think it beneath our dignity as free-born and well-to-do American citizens to devote our attention to them. We endeavor to make our diet suit our palate by paying high prices in the market rather than by skillfully cooking and tastefully serving at home. We buy more than we need; and, what makes the matter worse, it is frequently those who most need to save that are most wasteful.

The remedy for the evil, so far as it applies to the chief item of our living expenses—our food—must be sought in two ways—in an understanding of the elementary facts regarding food and nutrition and the acceptance of the doctrine that economy is not only respectable, but honorable. And it was in the hope of helping to a better understanding of the subject of nutrition and to show how some of the principal facts may be put to practical application that I prepared this paper.

The Growing Crops.

Thomas' Produce Report publishes the following information concerning the present condition of the growing crops and fruit trees. It should be remarked, however, that since the advices were sent in, there has been considerable rain, which has reached some of the points which stood in need of it:

Nothing could be better all through the Sacramento valley.

Both sides of the San Joaquin up to Fresno were all right. Thence to Tehachapi rain is wanted. Some suffering.

All below Tehachapi, including coast counties up to San Luis Obispo, nothing suffering as yet, but want rain badly. San Luis Obispo county has had weather entirely different from its surroundings. Our correspondents in all localities report everything in excellent condition, and plenty of moisture.

Folks in the upper part of the Salinas valley report rain enough, but ground cold and stuff not growing.

In the lower part of the Salinas valley, from Soledad down, they want rain. Some suffering; but a good rain in a few days would save most everything.

Around San Francisco bay nothing could be more favorable. Rain has come just right all through the season.

Taking the reports from all points, the acreage planted in grain will be fully equal to last year, favoring barley.

CEREAL CROPS.

The Wheat Crop of 1893.

We find in the *Call* a discussion of the various reports and estimates of the U. S. wheat crop of 1893, which is interesting. It cites the Government report, which figured the crop at 396,000,000 bushels. The surplus over from previous crops, when it began to be harvested, is known to have been 81,409,641 bushels. Thus the quantity available for consumption, seed and export was 477,000,000 bushels. The quantity required for seed and consumption is about 369,000,000 bushels, and we exported during that portion of the crop year which has expired 114,000,000 bushels. An addition of the two calls for 483,000,000 bushels, which, according to the Government, is more than existed. Estimating the crop movement for the crop year on the basis of the actual exports for January and February, which were about 24,000,000 bushels, it becomes apparent that the actual crop of last year must have been nearer 450,000,000 bushels, which was the estimate of the Cincinnati *Price Current*, than 396,000,000 bushels, which was the estimate of the Agricultural Bureau; and this would leave the country absolutely bare next July.

A further confirmation of this view is afforded by the condition of the wheat market. If the bureau report had been accurate the country would now have been in the first stages of a wheat famine, whereas, in fact, wheat is selling in New York at 61½ cents and in Chicago the lowest prices ever recorded have prevailed for some days. Such a phenomenal decline is, of course, mainly the consequence of a general discouragement among buyers. For months every one who has bought for the rise has lost money, owing to the absence of a speculative spirit. People's temper is so depressed that nothing seems cheap, and there seems to be no bottom to anything. This, of course, is a temporary condition of things; a turn in the tide will come before long. But if there were not enough wheat to go round, as the Government figures would imply, it would not require speculation to maintain prices.

There are those, indeed, who are beginning to regard the estimate of the Cincinnati *Price Current* as an underestimate. They reason from the course of the markets. During the last half of 1893 the average price of wheat in New York was 68.89 cents per bushel, 10 cents lower than any year of which records have been preserved. As above stated, it is now seven cents lower. Such a decline is not to be explained by a scarcity of money in the wheat States, or by such extreme necessity among the farmers that they have been compelled to rush their stuff to market at any price. A more natural explanation is the supposition that the crop of 1893 was in reality a very large crop instead of being, as we were told, a very short one.

For ten years the acreage planted in wheat in the whole country has not materially varied from 38,000,000 acres. It was 39,000,000 acres in 1884; it ran down to 34,000,000 acres in 1885; up to 39,900,000 million acres in 1891, and back to 38,000,000 acres in 1892. On the acreage of 1884 a crop of 512,000,000 bushels was raised, and on the large acreage of 1891 a crop of 611,780,000 was reported, though the figure was probably exaggerated; but it is highly improbable that the crop of 1893 was only a trifle larger than the crop of 1885, when only 34,000,000 acres were planted in wheat. It is scarcely credible that it should have fallen 100,000,000 bushels below the crop of 1880, when the acreage was 38,000,000 acres. This is so large a country and wheat is planted over so wide a meridian that crop failures here and there from drought, or wet weather, or frost, or blight, or other accidents, rarely affect the aggregate crop to any material extent; where the crop of one State is short that of another State is bountiful; the lean areas balance the fat areas. It is pretty safe to count, one year with another, on a crop of about 500,000,000 bushels. Where the bureau reports a large excess over that figure it will have to justify it by reporting an increased acreage somewhere, and where it reports a considerable decline from that figure, without a clear exposition of a diminished acreage, its statements will naturally provoke challenge and investigation.

Cheapening Wheat at the North.

Prof. E. R. Lake writes to the *Rural Northwest* that Lillis F. Smith of Endicott, Wash., a prominent farmer of more than average enterprise, has been figuring on the wheat crop. He finds from actual test, the past season, that he can cut, thresh and sack his grain for \$1.50 per acre, counting the yield at 15 bushels.

This work he does with a combined machine for this purpose. But Mr. Smith does not stop here. He proposes to reduce the cost of putting in the crop, and to this end will employ the new Hapgood seeder, a machine that plows, harrows and seeds at a single operation. By this means he claims he can seed an acre for 75 cents, thus bring the total cost of a wheat crop to \$2.25 per acre, including a good rate of interest on machinery.

Certainly the estimate of yield, 15 bushels, is conservative, and all of Mr. Smith's estimates appear equally within the range of conservatism. If the product sells for 30 cents per bushel, \$4.50 per acre, that leaves \$2.25, the profit. With two or three sections of land under tillage, it is quite readily seen that a man may make a fair income at these low figures.

Now the question arises as to how much of this "big farming" can be carried on with us. The Palouse and Big Bend countries will permit of some of it. Of course, the yield would be much better in most of the Palouse, while it is perhaps about a fair estimate for the Big Bend, notable exceptions accounted for.

It is not our aim as a progressive State and people, to show how cheaply large areas may be handled, although Mr. Smith's figures will apply to a quarter-section farm,

the whole being in wheat, if it is not held that all the stock necessary to operate this threshing outfit is kept on the farm. It requires 16 horses to operate the combined thrasher and this would incur considerable expense, except on a large tract of land. However, it is possible that these machines may become itinerant and, in this way, they would be a great help to the small farmer as well as to the large farmer. The seeders are but slightly more expensive than a drill and can be profitably owned by the small farmer if he can command six horses.

Still, what is the trend of this improved machinery? Is it not to tie up the small farms into large ones?—just the opposite process that is for our best good, ultimately at least. Yet, withal, anything which offers to reduce the cost of producing this great cereal, wheat, may profitably be considered by our wheat ranchers.

Future of Wheat Growing.

Is it not true that wheat has been getting cheaper and cheaper every year? If one thinks otherwise, examine the statistics. Season after season shows that the farmer gets less and less for his wheat, and this will continue until we cease to export grain to foreign markets.

Will ceasing to export increase the price? It will. The home consumption of wheat in the United States is three times the quantity shipped to Europe, yet the price of all we now consume is fixed by the price of that we export. If the American farmers will decrease their crop by one-fourth, they will receive more for what they then grow than they now receive for a full crop.

Whom do we compete against? Not England, France, Germany or other nations like ourselves, but against India, where labor is only six cents a day, against the cheap labor and very low-priced lands of South America and against the servile labor and cheap lands of Russia.

Yet in the face of this cheap opposition we have kept on sending more and more wheat out of the country. From 1856 to 1860 we averaged 16,500,000 bushels a year. From 1875 to 1880 we averaged 109,000,000 bushels a year, while from 1885 to 1890 the average was 113,000,000 bushels. For 1893 the quantity was 174,826,242 bushels.

In this country the low price of wheat has cheapened land. We believe the same land alone is not worth 75 per cent of what it was five years ago. It will not advance until we cease to grow less wheat or until a change is made in the crops we produce.

Look at the lands of Germany and France that grow grain. They remain at a good price because the people depend upon a home market. Twenty years ago France planted 17,000,000 acres to wheat. To-day her wheat area is no greater than then. Ten years ago South America sent no wheat to England. In 11 months of 1893 it shipped more than one-fourth as much as the United States.

We must do one of two things—stop raising wheat for export and let the home market increase the price or else change our system of farming and raise a variety of crops. The latter is the best plan. Let the grain farmers of Butte meet and discuss what crops they can grow to the best advantage. A dozen can be named that will pay better than wheat. There must be a change, for the price of wheat will not advance.—Oroville Register.

FLORIST AND GARDENER.

An Early Start in the Garden and How to Get It.

TO THE EDITOR:—Some years ago, while I was writing an article for your paper, on "California Vegetable Growing," and entered into somewhat minute details on the subject, my wife said: "What makes you so particular about describing every little thing; don't you suppose every one knows about that?" I said *no*. While there are a few that do, the majority do *not*.

A few days ago she was visiting a lady who lives near us. When her husband came in she said: "Have you planted any onion, cabbage, or lettuce, seed yet?" He laughed heartily, and replied: "Why, no; it is not time yet to plant it." My wife then told them that we sold fine heads of lettuce on New Year's Day, and also had some, as well as young onions, on that day for our dinner, the seeds of which were planted on September 1st.

Some of my friends are commencing to come to me for cabbage, onion and lettuce seeds, and are greatly surprised when I tell them that if they want these hardy vegetables early, they should have sown the seeds by the first of September, on a raised bed. By so doing, the plants would have been ready to set out after the first rain, and they would now have plenty of fresh vegetables for use in their families.

My land, as well as a great portion of the valley land here, is more or less on the adobe order, and it remains cold and wet a long time after the rain is over. I find that a raised bed for early vegetables is some two or three weeks earlier here than those planted on level ground, and by the addition of a little sand, and fine, light, rotten manure even a greater difference is made. I have also found that vegetables planted on the south side of even a picket fence, are several weeks earlier than those planted on the north side.

Raising Tomatoes, Etc.—Now is the time, in this part of the State, to prepare a warm bed for tomato seeds, as well as for some kinds of flower seeds for the good wife who wishes to raise a few early flowers. As the following plan gave me good satisfaction last year, and is simple and much easier than hot beds as generally made, I will here give it for the benefit of your numerous readers: I take a dry-goods box, three or four feet long, two feet wide and two feet or more in depth. This is about as small as it should be; a much larger one can be used, if necessary. Into this I put fresh horse manure, and straw that has been used for bedding, and tramp it down occasionally as solid

as possible, until it is within four inches from the top. Over this I scatter a little clean straw. I then use small boxes, three inches deep, and fill them nearly full with nicely prepared soil, and, after sowing my seed, place each box on the warm bed and cover each one with a pane of glass, in order to retain moisture. It is necessary to remove the glass occasionally, for the purpose of admitting fresh air. The main bed will soon commence to heat, as well as the earth in the box. Great care must now be taken for a few days, otherwise the contents of the boxes might become too warm, which would cause the young plants to grow tall and spindling, thereby rendering them almost worthless. This can be easily obviated by lifting the boxes and placing under them an inch board, or a few bricks. On a cold night vary the boards or bricks as occasion may require. In a few days your plants will be up nicely, the heat of the bed will gradually grow less, and the plants will naturally favor themselves to the change.

You will soon have what is termed a "cold frame," and your plants will grow strong and stalky, providing care is taken to cover them during severe storms, as well as in cold days and nights. When they are yet small, and commence to crowd each other too much, transplant them to an open, sheltered, raised bed, where they can be cared for until ready to set out in permanent beds or rows.

IRA W. ADAMS.

Bay State Garden, Calistoga, Feb. 17, 1894.

Growing Potatoes by Irrigation.

Judge J. M. Stout, formerly of California, is now farming with irrigation in Washington, and he gives the interviewer of the *Ranch* at North Yakima the following outline of his methods:

The first step toward a good potato crop is to get the land in good condition. As soon in spring as it will do to go to work, turn on the water and get the soil well moistened. Following a season like this, a heavy watering will not be necessary. I presuppose the land in good condition last fall. When the soil is right, put in the plow and plant as you plow. Do not let the land bake. Drop potatoes in every third or fourth furrow.

I prefer cutting to a single eye and placing six to eight inches apart according to variety—Early Rose, six inches; Burbank, eight inches.

I prefer to cover the seed four to five inches. Harrow after the planting and follow with a smoother, or light roller. This leaves the surface in fine condition for the after cultivation. Lay off a ditch between the rows for irrigating. This may be done after the potato plants appear above the surface.

When to first turn on the water, watch for indications of getting too dry. When that stage is reached, turn on the water and let it run for 24 hours, then stop the flow; and when the land has dried out enough to permit, run through with a small shovel plow. This done, the ditches must be reopened to be in readiness for the next watering. The next time water is needed, let it remain about the same time as before and follow with a small diamond plow, throwing the dirt toward the potatoes. A third watering and cultivating will be needed. Do not neglect the cultivation whether there be weeds or not. The soil needs the stirring. The last time will probably be along about the first of August. Treated in this way, one will be sure of a good crop of potatoes in this part of the country.

The crop will be uniform in size; but if you keep on watering late in the season, you will start new settings, and the result will be plenty of small potatoes and some large ones at digging time.

By planting the single eye system, I think about 12 bushels of seed per acre are required.

For market the Burbank leads. The Peerless will yield a bigger crop, but it is less in demand.

In harvesting I use a plow rigged after a manner of my own—a simple device, but difficult to describe so that you will understand it without seeing it. Do not let the potatoes have the sun. As soon as dry, put in sacks or in piles and cover with vines or other material. To keep for winter use, or through winter, place in pits, but do not cover too deeply at first. Provide for ventilation at top of pit. If stored in cellar, keep from light and air.

Potatoes here are not troubled with any kind of disease. We have no blight, rot or scab. This is the ideal potato country.

I believe I was the first to introduce sweet-potato cultivation here. Prepare the ground for setting the plants the same as for the ordinary spuds, except to throw it into ridges. Set the plants 12 inches apart on top of ridge—ridges four feet apart. Irrigate by running water freely between the rows. Fill to top of ridges, cut off and let water soak in. As soon as dry enough, run through with plow to break up the soil.

You cannot grow the crop anywhere here. Choose the sandiest land. Set the plants as soon as danger from frosts is over. They yield pretty well, but not such large crops as in California—say five or six tons per acre—but the quality is good.

Our market is good. We can successfully compete with California in the Sound markets. Some people have failed with the sweet potato here, but I think because they did not understand the work. There is money in them, however, if properly handled throughout. They keep fairly well if not watered too often.

I prefer the early South Carolina variety. Perhaps the yellow Nansemond yields more, but the quality is not quite so good. The South Carolina is sure to make a fair crop of excellent potatoes. The Bermuda I do not remember to have tried.

One Way to Pole and Train Hops.

J. E. Shannon, who has a 15½-acre hopyard down the river a few miles from North Yakima, Wash., tells the *Ranch* that he will adopt this method of poleing and training: The poles will be ten feet long, set one foot in the

ground, 14 feet apart. This gives a pole to each alternate hill. A No. 12 wire will be stretched along the top of the poles east and west, being fastened to each pole by a staple.

About 18 inches below the wire, twine will be drawn the same way and carried diagonally to the top of each pole, making a network all over the field. From the wire immediately over the unpoled hills a string will be suspended and fastened at the lower end to a wire stake having a loop at the upper end, the other end being inserted in the ground at the top hill. This method is calculated to enable the vine to climb to the string and wire, and to exercise its own sweet will as to whether to go horizontally along the string or wire or up the cross twine from pole to pole.

Mr. Shannon believes that he has hit upon a plan that will give him the greatest possible amount of hops. The cost of wiring and twining the 15½ acres in this way, including labor, will be about \$175.

Another hop-grower suggests that there is really little need of the wire pegs; in fact, that no pegs are required. Just place the end of the twine a few inches under the soil and tramp down hard; the string will break before it will pull out, while the wire pegs are easily displaced.

THE IRRIGATIONIST.

How Much Water Do Crops Need?

TO THE EDITOR:—Major Powell's error (as quoted in your issue of the 12th) in stating that 24 inches of rain or of irrigation water are necessary to raise two tons of hay per acre, is so serious that I would like to oppose the results of a practical farmer to those of a theoretical irrigationist.

At several different points on my land, varying from 25 feet to 1000 feet above sea level, I have raised nowhere less than 1½ tons of wheat hay per acre, with a rainfall of under 9 inches, at the locality with the greatest fall. No part of the land was irrigated, nor was there any seepage water to help out the rainfall. On the low land my 60-foot well contained at that time only a foot of water, and on the high lands well water is not obtainable; so much for actual results.

As regards the annual flood of 24 inches of rain with which Major Powell would like to overwhelm us: In my locality, and I presume in other parts of California, such a rainfall, unless spread evenly over eight months, would do us more harm than good. It would be impossible to work heavy adobe low lands, owing to miriness. Could Major Powell control the rainfall with that exactitude with which irrigation water can be controlled, my neighbors and myself would ask him to give us early in November 2 inches, December 2 inches, January 3 inches, February 3 inches, March 2 inches, April 2 inches, making a total fall of 14 inches for the year. With these 14 inches of rain, it is with us poor land or a lazy farmer which could not produce two tons of hay per acre. Any excess beyond these 14 inches is, from a hay standpoint, likely to be a misfortune, as tending to lessen the crop on heavy or flooded low lands.

Of course, I make no claim that a year with a 14-inch fall is necessarily a "good" year. Five inches of rain in November, seven inches in December and two inches in January would make a barren year for most hay farmers. Much more depends on timeliness than upon amount, and therein lies the great economy of irrigation.

I venture to criticize Major Powell's figures as quoted by you, because your rain tables and the experience of great masses of practical farmers, like myself, prove him to have made a very serious error, and an error which could have been avoided by the slightest study of crop reports and rainfall throughout California. Such an error is inexcusable, when made by a widely-known Government specialist whose opinions should be so founded on practice and theory as to coincide with the experience of practical farmers. Such errors will not only retard the development of our arid regions, but, worse than this, they confirm in its hide-bound contempt for theory and modern practice, that large class of farmers who refuse in their work all aid from science, because some conspicuous theorist occasionally goes wrong.

To show how unfounded is theoretical irrigation in demanding a 24-inch minimum fall to insure crops, cannot your influential journal tabulate the hay crop per acre on unirrigated land in those parts of California which last year obtained less than Major Powell's 24-inch minimum rainfall? It would need to be remembered in studying such a tabulation of crops and rainfall, that all rains before November 1st are practically valueless for hay purposes, they being lost by evaporation before the seed is in the ground.

Los Angeles, Feb. 24, 1894.

HACIENDA.

[This is just what we expected. It seems almost incredible that a distinguished investigator like Major Powell should have, in this matter, forsaken the plain scientific process and have based his claim upon such data as he cited. The proper way would have been, of course, to determine what has actually been done with specified rainfall during a term of years and from that prescribe the amount needed for crops under similar conditions. We do not desire to enter the field at present with the tabulation which our correspondent suggests. We prefer to hear from our readers just what they have done. Many of them have records which show the relation of rainfall to crops in their own experience, and we hope they will furnish the figures. This will make the discussion more direct and interesting. Generalization can come afterwards. Let us hear from all what they have done with certain inches of rainfall.—ED. PRESS.]

FRUIT MARKETING.

What a Northern Grower Knows About Selling Fruit.

As illustrating the change from grain to fruit in other parts of the coast than California, we cite the case of Dr. N. G. Blalock of Walla Walla, Wash., who became widely known as a wheat king of the Northwest. The change is seen in the fact that at a recent convention of fruit-growers at Spokane Dr. Blalock read an essay on fruit picking and packing, which will be interesting to Californians and useful in the good advice which it contains. We quote as follows:

Make your fruit attractive to buyers. Never let pickers pour fruit from one pail or basket into another; that bruises the fruit and cuts down the price. Give each picker ten pails and send a wagon along behind to pick them up as filled. Have an inspector at the packing-house to separate the fruit into grades, each grade of uniform size. The automatic grader is provided with soft brushes that remove all dust and leave the fruit clean and fresh-looking.

Wrap the first grade of apples and pears in soft, clean, white paper. The size required varies according to the size of the fruit from 6x8 to 7x9 inches. In wrapping lay the paper in bunches under your right hand. Place the fruit, stem down, in the left hand, the paper in the other, and roll it in two motions. Place in box, the smooth side up (stem down), in regular rows each way. I use the standard California style of box. All grade apples, as well as pears, should be wrapped. Mine so selected and packed bring \$1.75 to \$2 a box. I believe that it would pay to wrap the second grade, especially when to be shipped a long distance. It does not pay to ship third-grade fruit except in a few cases of fine varieties like Newtown pippins that sell well in three grades, graded to size. My mistakes teach a valuable lesson. At first I shipped all sorts and was disappointed in the results. I investigated the Chicago markets, and when I saw other and better fruit beside my own, I quickly saw the reason of my ill "luck." Whole carloads netted me zero. Small or no returns are usually the fault of the shipper. Eastern buyers acknowledge the high quality of our fruit, but say it is poorly packed. My present success is in right grading and packing. Four years ago my orchards were unprofitable; now they bring \$1000 a carload. I only ship first-quality fruit, graded in two or three sizes.

Utilize the Poorer Fruit.—I tried to use the third and fourth grade in cider and vinegar, but failed at that. Now I keep several hundred hogs. The refuse fruit is mixed and boiled with refuse potatoes, cabbages and other vegetables and fed to the pigs. In this way it brings about as high a price as the better fruits sent to market. Every fruit-grower should have hogs, poultry and bees in plenty. [If Dr. Blalock should be sun-drying fruit in California, he might modify that statement.—ED. PRESS.] The chicks are profitable as insect scavengers and as fertilizers; the bees as pollenizers. Spraying the trees poisons very few of the bees.

It pays to dry or evaporate the high grade, overripe fruits, and also the best of the third and fourth grades. My method is to allow other people to come on to my farm and take what they want of these grades and dry the fruit for one-half of the product.

Marking the Packages.—I mark every box sent out on each end with my name, the grade and variety as:

No. 1. Blalock. Newtown Pippin; or No. 2. Blalock. Newtown Pippin.

Thus I am building up a reputation and selling by my trademark, which a few years ago had no weight.

I ship in full carload lots only, and so pack that the boxes will fit perfectly. Commence by laying down two ½x¾-inch strips. On these place the boxes; then nail strips on to the boxes to keep them fast in place, and to maintain a half-inch air space all around every box. At each end let the strips project an inch beyond the boxes and rest against the end of the car to prevent shifting. So arrange the tiers that the air spaces will be continuous from end to end of car. Keep each variety and each grade together, and in mixed carloads each shipper's lot grouped by itself to facilitate handling at the other end of the route.

In packing, special care must be taken to ship only such fruits as will bear transportation well. Pears must be picked for long-distance marketing at least two weeks before they would ripen if left on the tree. Some of my Clapp's Favorite pears arrived at Chicago in prime condition, but went down in five days, being too nearly ripe when picked. Washington pears compete with California pears in Eastern markets; they are of finer quality. But we must pick and grade and pack and ship with equal care if we expect to win the prize of high prices for good fruit.

The Standard Fruit Package.—The standard sizes of fruit packages adopted by the Northwest Fruit-Growers' Convention are as follows:

Apple boxes—18½x12x11½ inches.

Pear boxes—18½x12x8½ inches.

Peach boxes—18½x11½x4½ inches.

Prune boxes—18½x11½x4 inches.

Grape crates, holding four packages, 16x16x4½ inches.

All of the above are inside measurements. The ends of the boxes are to be three-fourths of an inch thick and made of one piece. The sides and top of the boxes are to be in one piece each. The bottom may be in two pieces.

A Lucky Throw.

Young Harlow, a nephew of J. Harlow, who is working for the latter down near the lake, while plowing one day last week, killed a lynx with a monkey wrench. The animal was crouched in the grass when discovered by the boy, about forty feet distant. He threw the wrench at it and

the heavy end struck the lynx full in the forehead, breaking the skull. The beast measured 18 inches in height by 33 inches in length, had a fine set of whiskers on its chops and tassels on its ears.—Hanford Sentinel.

THE VINEYARD.

Uprooting Raisin Vineyards.

Essay read before Tulare Grange by Frank S. Chapin.

Under what conditions is it wise to uproot raisin vineyards? This subject was assigned by the last meeting of the grange to the writer to be brought before this meeting in the form of an essay. He regrets that time does not permit a discussion in open grange, calculated to bring out the experience, theories and remedies of many older and wiser in the business. Several years since it was found that land in this valley that had been unproductive could be made, by the use of water, to excel the famous vineyards of Spain, where raisin-growing had been a staple industry for centuries. The goods had always been consumed in small quantities at the holiday season, as luxuries, and sold at corresponding prices. Certain very careful and systematic producers, like the late G. G. Briggs and Dr. Blowers of Yolo and Miss Austin and Col. Forsyth of Fresno, demonstrated that we could produce a larger quantity to the acre, place them in equally attractive packages and adopt such labor-saving methods as to enable us to compete with labor so much cheaper than ours, as it is in Spain.

Real estate men improved the opening to subdivide large tracts, acquired at little cost, upon the expectation that anybody on any land could achieve such results as the few they loved to quote had done under most favorable surroundings. All were made rich on paper. Many of the vineyards were owned and some operated by those who hardly knew whether alfalfa grew on grape vines or grapes on alfalfa trees. They knew their section of the country was famous for the production of grapes and alfalfa.

Land that never could be made to produce anything else, was represented as just the spot for raisin grapes and both non-residents and farmers invested many a good dollar in a hopeless cause.

Again, planters seemed to forget that any section of California was subject to late and early frosts, or that raisin vineyards must be favored in those respects. Year after year many a one has lamented the loss of his first crop and best crop and some have lost vines and all.

Again, they reasoned that if some was good, more was better, and they planted vineyards upon land so thoroughly sub-irrigated that the vines threw out a rank growth and the grapes kept on forming, but they waited in vain for them to ripen so as to show the amount of saccharine necessary for a good raisin.

As the Irishman said, all of those vineyards planted by people who knew nothing about it, all those planted on barren land, all those planted in places too frosty or too wet to mature a raisin grape, ought to have been pulled up before they were planted.

There are hundreds who are pulling up good young vineyards, because they argue from the experience of two seasons past and have been so much excited by partisan discussion of the tariff that they think there will never be anything in the business again. We think that these are as much mistaken as those who rushed headlong into the business in the first place.

Raisins are a staple fruit product that will always be in demand, and at a reasonable margin upon cost of production and distribution they are second only to the prune as a cheap luxury for the poor. When they are sold upon this basis the consumption will far exceed the present per capita of 1½ pounds in America or 3 pounds in England, and may approach the 60-pound per capita consumption of the Fowler family in Fresno. The late remarks of our Representative Bowers, in Congress, show that many of the dealers are taking advantage of the competition to sell among producers, but are not trying to increase consumption by selling at the lowest prices they can afford. The butcher reasons that about so much steak will be consumed anyway, and sells his best cuts at 15 cents a pound whether he pays five cents or two cents for his cattle; just so with the retail grocer. But that won't last long. One will begin to crowd them as specialties, and sell upon the basis of profit regulating staples, and that will force competitors to pursue the same course. As Mr. Bowers says, the matter of tariff cuts a very small figure when compared with exorbitant profits.

Before the late G. G. Briggs went largely into the business, he visited every prominent raisin center in the Old World, and satisfied himself that his soil was so much more productive, and that he could save so much of the labor required by Spanish methods, that he could pay a dollar a day for labor and undersell the product of their cheap labor, tariff or no tariff.

Unscrupulous packers have lowered the reputation of California goods. Exorbitant profits have prevented increased consumption. A financial panic has unmanfully struck the poor raisin-grower when he was down. But the man who has a good vineyard, well located, and is willing to persevere until he becomes a master of his business, may feel assured that the industry is now passing through its darkest days.

So long as Spanish competitors must import from distant countries commercial fertilizers in steadily increasing quantity, so long as they remain wedded to their medieval methods and must bear the many burdens of their customs and conditions, the independent proprietor, in free America, upon the virgin soil of California, has little to fear in an even race.

TRACK AND HARM.

The Training of the Saddle Horse.

Within a time so recent that it is in the memory of men not yet old, there was comparatively no horseback-riding in America purely for pleasure and the benefit which the exercise affords. There was horseback-riding, of course, and a good deal of it, from the earliest days of the colonies; but horses were backed and ridden almost entirely for utilitarian purposes, and because the roads were so poor that it was easier to go from place to place on horseback, and even easier to carry merchandise in this primitive manner, than to employ carriages. Where this condition continued, and this was notably so in the Southern States, we have for several generations had most excellent saddle horses—that is, horses trained and gaited to get over the greatest distance in a given time with the least inconvenience to the rider. This kind of horse is found in greater perfection, perhaps, in Kentucky than elsewhere; and though he is not by any means the ideal of what a saddle horse for park use or pleasure-riding should be, still he answers his purpose admirably, and is the most distinctive type we have of a purely American saddle animal. A planter who wishes to visit the various parts of a large place, when the weather is warm, and also go to the village postoffice for his letters, very naturally prefers an animal which will do what is needed without getting his rider into a great heat so that he will have to change his clothes when he dismounts. For such work a horse with a running walk, a fox-trot, a rack or, as it is called in the East, the single-foot serves the purpose very much better than an animal whose natural paces only—the walk, the jog, the canter and the gallop—have been cultivated.

Where such a horse is needed, there are certain breeds in which these paces have been so long cultivated that these artificial gaits come almost, if not quite, by second nature, just as a pointer puppy will point game even before he has been trained. In such breeds (the one I most distinctly recall is the Drennon family in Kentucky) it is not at all difficult to take a young horse and by a little patience teach him nearly all the gaits I have mentioned; and when there gets to be a good understanding between rider and horse, the latter goes from one gait to another whenever he is bidden. All these paces can be taught to any horse of activity, and not abnormally high-strung and nervous, with the exception perhaps of the running walk, which I am inclined to believe is a gait natural to some horses all over the world. It may be that it can be taught; but if that be so, I would not know how to begin the instruction.

Fifteen, and even ten, years ago the horsemanship of urban gentlemen seen riding in Central Park and Fairmount, and in the parks of the other great cities was much inferior to that which is now common. The great improvement during that time has been due to the fact that horseback-riding has come to be fashionable for both men and women, and our friends the doctors have been quite fond of late of recognizing the truth of Lord Palmerston's saying, that "The best thing for the inside of a man is the outside of a horse," and of prescribing this exercise for men who in sedentary pursuits are overworked either in brain or in stomach. I cannot bring myself to believe that the riding-master, as he generally flourishes in our American cities, has had a great deal to do with this improvement, for I have rarely seen a riding-master in any of our parks who himself practiced good horsemanship. Most of these teachers are Germans, and the Germans are very thorough in whatever they undertake, but when on horseback a German has the singular faculty of making his charge appear to be acutely suffering and bunched up with pain. It is singular that the more a horse appears to suffer the better does his rider seem pleased. I am convinced that the improvement we have noted is due to practice and the knack which Americans have of applying the rules of common sense to whatever they undertake.

A man who has not learned something of riding had best not try to train his own horse, for it would be almost impossible for master and animal to be educated at the same time. But when one has once mastered the rudiments of horsemanship he should by all means train his horse. Until he has taken a green horse—I do not say an unbroken horse—and trained the animal to go the various gaits at command, he will never know the highest pleasure to be derived from the exercise. When one has such a horse there is something like a double ownership in the animal, for the master has supplied the education which increases the animal's value a hundredfold. By a green horse I mean a horse that has been blitted and backed, is no longer afraid to let a man mount into the saddle, and is what trainers call "bridle-wise." And yet it is a pity that a gentleman wanting to turn out a perfect saddle horse could not have him in the very beginning, and by patience and gentleness get the confidence, respect and affection of the animal. The breaking of colts in this country is usually very roughly done, the young horse being conquered in the end by the greater persistency and ingenuity of man. The method usually employed is only a little less crude than the "broncho-busting" practiced on the wild horses of the West, where a pony is lassoed, thrown, saddled, mounted, and ridden until its strength is exhausted and the animal must give up. These rough methods very frequently spoil the mouth of a horse, and without a good mouth we can never have a good saddle horse. And then, again, the temper is often hopelessly spoiled, and many of the "busted bronchos" are cruel buck-jumpers to the end.

Rarey, the great horse-trainer, had three cardinal principles upon which he worked: 1st, that a horse is so constituted by nature that he will not offer resistance to any demand which he fully comprehends, if made in a way consistent with nature; 2d, that he has no consciousness of his strength beyond his experience, and can be handled according to man's will, without notice; 3d, that man can, in compliance with the laws of the horse's nature, by which

he examines all things new to him, take an object, however frightful, provided it does not inflict pain around or over or on the horse, without causing him to fear.

The world long ago accepted the first two of these principles without reserve, and the third with limitations. We have all seen imitators and successors of Rarey give exhibitions which went far toward proving the third also to be true. But so far as saddle horses are concerned, a trainer has not much use for Rarey's methods, and need not bother even about the third principle. We do not wish to ride horses without bridles, nor do we often need to beat a drum in the saddle; and still less frequently is it desirable that a lot of tin pans should be tied to a saddle horse's tail. The English method, somewhat practiced in this country also, of gradually accustoming the colt to the halter, then to the bit and later on driving him around in a circle with a simple harness consisting of surcingle and crupper, with check-rein and martingale attached above and below, a long single rein being fastened to the bit and held in the hand of the trainer, is excellent, and gets a young horse accustomed to being handled long before he is mounted. And then the horse learns something of the meaning of the bit. Several times every day for several days before a colt is mounted he should be taken through this exercise, which is called "lunging," with the addition of a saddle on his back. The stirrups upon such occasion when the young horse is saddled should be jerked down several times, so as to show him there is no harm in them. But nothing should be done roughly or impatiently. When the rider is ready to mount he should put his foot in the stirrup and raise himself quietly several times from the ground; then, when he finally mounts, he should do it as gently as possible, and then sit still for a while, so that the colt may get used to the unaccustomed weight, and when he starts off he should go as slowly as the colt can be persuaded to move, or, if the colt will not move at once, do not urge him but wait his convenience; or, if, on the other hand, the colt will bolt, there is nothing else to be done than to "stay with him," as they say in the West, and see the thing out. But with gentleness and patience there is rarely any great amount of trouble.

Once having got a horse used to carrying weight and to obeying the pressure of the bit to one side or the other, his education in the gaits should begin. Such a horse is what I have termed a "green horse," and if he has got thus far and his mouth has not been spoiled, so that he is neither oversensitive to the restraints of the bit nor indifferent to them, he can be converted in two or three months into as perfect a park horse as his capacity admits of.

Every saddle horse should be a good walker. To walk a horse must have his head at liberty, for if his bit be pressed upon his slow gait will be what the English call a "jog trot." There is very little use in trying to make a young and mettlesome horse walk when fresh from the stable. Therefore this branch of his education is more readily taught when he has been ridden some time and is leg-weary. The only method is to bring the animal to a standstill, loosen the rein and let him take his own course, and, each time he breaks into a jog or trot, bring him to a standstill and repeat the operation. There is nothing in the training of a horse requiring more patience than this. Trotting is a natural gait, but untrained horses are disposed to break at once into a canter or gallop. To teach a horse to trot easily under the saddle the rider should bear firmly and steadily upon the horse's mouth by means of the snaffle, lean slightly forward in the saddle, press the legs against the horse's sides, and use the peculiar click of the tongue which serves as the encouragement of the horse on all occasions. If he be disposed to canter even now, the right hand should be placed upon his neck to press his head down, and if this do not accomplish the desired result, the right hand should be used to twist the horse's ear. This will certainly make him put his head down and turn his gait into a trot. A few lessons such as this will teach a horse to trot whenever the rider bears upon the snaffle and touches the neck with his right hand. It is easier upon both horse and rider in the trot for the latter to rise with the motion of the horse. At the precise moment when the hind and fore legs are making their effort to throw the horse forward in progression, the body of the rider is thrown forcibly into the air, in some horses to so great an extent as to make the young rider feel as if he would never come down again. After reaching the utmost height, however, the body falls, and reaches the saddle just in time to catch the next effort, and so on as long as the trot lasts. In this way the horse absolutely carries no weight during half the time, and the action and reaction are of such a nature that the trot is accelerated rather than retarded by the weight. In the trot the foot should bear strongly on the stirrup, so that the elasticity of the ankle takes off the jar and prevents the double rise, which is apt to be produced with some rough horses. The knees should always be kept exactly in the same place, without the shifting motion which is so common with bad riders, and the legs should be held perpendicularly from the knees downwards. The chest should be well forward and the waist in, the rise nearly upright, but slightly forward, as easily as can be effected without effort on the part of the rider, and rather restraining than adding to the throw of the horse.

An easy canter, like a low voice in a woman, is a most excellent thing. A saddle-horse without a good canter would be valueless, but fortunately he is very easily trained in this gait. Notwithstanding this, it is very common to see in the American parks horses that canter as awkwardly as cows gallop. This is always the fault of the rider. Even the German riding-master gets a tolerably good canter out of his suffering charger. In the trot the snaffle is used; in the canter the curb. It is best to start a horse into a canter from a walk or a jog, but it is sometimes necessary to push him in the beginning of his education from a trot into a gallop, and then by a firm but gentle pull upon the curb restrain him into a canter. While a horse is in a canter this firm and gentle hold upon his mouth should always be maintained, as otherwise he will wobble about in his gait as a cow does. It is always de-

sirable to choose for a horse which leg he shall lead off with, and also to teach him to change his lead at the will of the rider. Every horse in starting to canter turns himself slightly across his line of progress in order to enable him to lead with the left he thereby advances. Thus, supposing a horse is going to lead with the off fore leg, he turns his head to the left and his croup to the right, and then easily gets his off fore leg before and his near leg behind into the line which is being taken. Now, to compel him to repeat this action, it is only necessary to turn him the same way, by pulling his head to the left and by touching him with the left heel, after which he is made to canter by exciting him with the voice or whip, while restraining him with the curb. When the lead is commenced the hold on the curb and the pressure of the legs should be equal; but if while the canter is maintained it is desired to change the leading leg, the horse should be collected and roused by the bit and voice, and then the rider should reverse the pull of the reins and the pressure of the legs from that practiced at the beginning, so as to turn the horses head on the other side. This will generally compel him to change his lead.

The gallop is a natural gait, and all the rider needs to do is to keep a firm hold on the mouth with the snaffle and to sit low and back in the saddle. These are the gaits desirable, in my opinion, in a park horse; but every saddle-horse should be taught also to jump. Most active horses jump naturally, and many of them seem absolutely to love it. But it is the easiest thing in the world to get a horse to dread to jump. This comes about frequently by reason of jumping a green horse so much in the beginning of his training that he gets sore, and the effort to rise and the jar of landing are both painful to him. At first starting out, take very low objects to jump, and go at them slowly. Only jump once or twice a day till the animal is well accustomed to it, and gradually increase the height of the jump and the number. It is a good thing to remember that in jumping a horse over an elevation—that is a log, fence, or hurdle—you cannot go at it too slowly, while in going over water you cannot go too fast, for in the last case the horse needs momentum to carry him over the brook or ditch. There is a great deal of nonsense talked about lifting a horse over a fence or brook. A rider cannot lift a horse any more than he can raise himself by his own bootstraps. But he can rouse and collect the horse and communicate to the beast his own courage and determination.

I have said that the running walk, the fox-trot, and the rack or single-foot are the distinctive Southern or Kentucky gaits. I regret to say also that some riders in the section alluded to do not scorn to use pacers, or side-wheelers, as they are sometimes called. There are, to be sure, pacers and pacers. Some of them do their work in such fashion that it is very easy on the riders, while others shake the occupant of the saddle in such a peculiar way that the only possible seat is no seat at all, for the rider must rise in his stirrups, catch hold with his knees as tightly as possible, and remain rigidly fixed till the gait has been changed or the beast has been stopped. The gait of the jennet, which was so much used by the ladies and leisure-loving monks of the Middle Ages, when moved out of a walk was a pace, but it was of an easy and gentle nature and nothing approaching that of the animals which get over a mile in something near two minutes. The running walk is most peculiar, but it has the great advantage of being at once easy on both horse and rider. It is a walking front and a canter behind. I believe that when a horse acquires this gait he drops into it of his own accord. I have known all kinds of horses, from thoroughbreds to Indian ponies, to have it. On a decent road or over a prairie a horse can go this gait at the rate of eight or nine miles an hour. The fox-trot is very much the same as the jog-trot, and is the intermediate gait between the walk and the real trot. The horse does not lunge out as he does in the trot, and yet he moves his feet more quickly than in the walk. To sit solidly in the saddle and use both snaffle and curb slightly will soon convert the ordinary jog into a fox-trot. If, however, the horse be urged beyond his own inclination in this gait, it will at once be changed either into the trot or the rack.

While it takes more patience to educate a horse to walk than to go any of the other gaits, it takes more horse sense to teach a horse to rack than is required in giving him any other accomplishment. And the teacher's patience, too, must be of prime quality. This is not the case with horses that rack almost by a second nature because sires and dams for several preceding generations have done so. I am speaking of the ordinary green horse fitted by general conformation for use under the saddle. When the jog-trot has been converted into the fox-trot the horse is ready to take his first lesson in racking. In this gait only the curb is used, and indeed the curb is the cause of it. If you urge a horse out of a jog, his natural impulse is to go into a trot. If, however, you raise his head with the curb, holding your hand high, you will interfere with this natural impulse, and the horse will move forward with accelerated speed, but in a kind of prance, part jog and part trot. By repeating this operation very often the horse soon acquires a gait of his own, which is called the rack or single-foot. It is more distinctly an artificial gait than any other, and no two horses ever do it exactly alike. The sounds made on the earth by the feet of a racking horse are peculiarly rhythmical, and one acquainted with the gait can determine it by this sound even when the horse is not in sight. To keep a horse at it for any distance is a great hardship on the animal. The rider, however, usually sits as easily as in a rocking-chair by his fireside. Some horses have acquired great bursts of speed at this gait, and I have seen them in the fair rings in Kentucky going so fast that I thought the rate was quite up to a mile in three minutes. It is a fortunate circumstance, I think, that the popularity of this gait is comparatively local.

If a horse have a habit of shying, it is usually due to timidity, defective eyesight, or downright "cussedness." In the two former cases the best way to break him is to show him that there is no harm in what has

frightened him. But he should never be whipped after he has passed the object at which he has shied. Nor should a rider in approaching an object at which he suspects his horse will shy communicate this fear to the horse. Wait till the horse gives the signal, and then be firm and gentle. When viciousness pure and simple makes a horse shy, he should be whipped out of it, and if the owner have not the courage to do this the horse should be sold to a firmer master. A rearing horse can usually be cured with a martingale fastened to his bit. A kicking horse should have his head held high with a snaffle. A shouldering horse—that is, one who tries to rub his master off by getting against a wall or fence or tree—should have his head turned sharply toward the object he rubs against. The natural inclination of a rider is to do the opposite. Stumbling can be cured by trotting a horse through plowed ground with a loose snaffle-rein. When a horse runs away—if there be space enough—the best method is to take a firm seat and a good hold and let him have his run out. Unfortunately, horses nearly always choose a crowded place in which to get frightened. A strong rider with a good curb can usually keep his horse from bolting. If he cannot, he should keep as cool as possible and do the best he can, being guided by the circumstances of the case. But there ought not to be much danger from horses running away under the saddle. The man communicates his own courage or his own timidity to his horse, and in riding and training this should never be lost sight of. This sympathy between horse and rider is so complete that the saddle-horse is never seen in perfection except when ridden by the man who has trained him to his gaits and taught him his manners.—John Gilmer Speed in Lippincott's for March.

THE DAIRY.

Experience With Calf Diseases.

The babies of the herd are always a factor of much concern to the dairyman and accounts of escape from vexing maladies are of constant interest. We find in *Hoard's Dairyman* two chapters from the experience of New York dairymen which may be of assistance to some of our readers.

One writes of what he calls "calf cholera," and says he has been subject to a visitation of it at intervals of two to three years for a long time, and having tried every cure that skill could recommend or ingenuity suggest, all to no purpose, as he invariably lost from six to twelve calves in succession, every one born in the period of infection dying in from two to four days. He continues: "One can stand it when its ravages are confined to scrubs or natives, but when it comes to blooded calves from imported 88 pound cows it is another thing. A few years ago I had an outbreak of it and lost nine calves one after another, not raising one of the number, and I began to despair of getting any calves that year to replenish my young stock, but having three more fine, full-blood Holstein-Friesian cows shortly due to calve, I thought to try one more experiment and am very glad I did so, as I am perfectly convinced that I have solved the problem of how to circumvent the dreadful scourge.

"My plan was this, to remove the cows before parturition from the atmosphere of the infected barn, which I believed to be so perfectly filled and saturated with the germs of the disease, that the first breath of life the calf drew, was as effectually his death warrant as though his head had been cut off. About one mile distant, a neighbor had an unoccupied barn, which he kindly lent me for my experiment. Four days after removal, one of them had a nice, large, healthy calf, which I left with her till six days old, when I brought it home and it grew up and I sold it for \$100 when one year old. The other two came in in proper season, within 12 days of removal, and with like results, and I had three calves to raise that season. Two of them had the merest symptoms of the disease, but not enough to interfere with thrift or growth in the least.

"The result was a great encouragement and I looked forward to the next onslaught of the curse with much more confidence of coming out top. Two years after I had four or five die, but as they were grades or natives, I did not think it would pay to try and keep them alive till they had filled the brief time allotted to the old-fashioned "deacon" of the dairy. They all died at from two to four days old. Having some full-blood cows soon to calve, I would remove one when just about ready. Sometimes she would be away from home but a few hours, as a neighbor but about 40 rods away, gave me permission to use his barn, and although his own cows were quartered there, there was no signs of the disease developed among them. This trial was an exact duplicate of the first in all its good results, with the added experience that if only a few of the first hours of the young calf's existence were spent in an atmosphere free from the germs of the disease, the same results were always attained and they were able to be brought home and to successfully cope with it. Well, this was very encouraging and looked as though I had hit the nail on the head, but recognizing the liability of inaccuracy of observation of the unprofessional mind, and the possibility of attributing my success to other than real causes, I awaited the next round of the lately fatal malady, which was delayed three years, but nevertheless when called to time was conquered by a repetition of former tactics, and I now fully believe that I can raise all calves that are desired, by removal of dam before birth to an unaffected locality. I do not agree with Mr. Smith in thinking his calves diseased before birth, as mine were all big lusty fellows, and would suck or drink the first time with a healthy relish, but by the next meal would show signs of a deranged digestion, accompanied with pain and loss of appetite, sinking of eyes into head, coldness and an offensive discharge from bowels, like whey in appearance. On removal of skin the blood is

found to be nearly all gone and the skin to adhere to the flesh, which is dark and dry, showing by its inflamed appearance that it has been the battle ground of the myriad hosts of bacteria invading the organism."

LIME WATER FOR YOUNG CALVES.

J. S. Shattuck, another dairyman, seems to rely upon aiding digestion than upon seeking to escape from bacteria. He writes: About seven years ago my young calves commenced dying very much as Mr. Smith describes his, and the disease spread to older calves that were sucking the cows. I lost calves that were three weeks old and fat, and from that time until the present season have had more or less trouble, although my calves have usually lived from two days to a week old. In a few instances they have died in 12 to 24 hours after birth, and it did not seem to make any difference whether they sucked or were immediately taken away from their mothers and fed.

In the winter and spring of 1892 I had the most trouble in my herd; in fact, I nearly gave up being able to raise a calf, when a neighbor advised me to try lime-water. I had a good subject at the time, a calf three days old, that was so near gone that he could barely stand alone when lifted up. His nose and mouth were nearly as cold as those of a dead calf. I gave him half a pint of new milk with three tablespoonfuls of lime-water, and in six hours gave him one pint of milk with same amount of lime-water. This ration was given at night, and to my surprise the calf was alive in the morning. The dose was repeated three times that day, and the next day I added two raw eggs. The fourth day the calf got up and began to show signs of wanting something to eat, and I increased the ration of milk and eggs gradually for a few days, and the calf was completely cured and never showed any signs of scouring after that. From the success I had met with that one calf, I was encouraged to try again and went through about the same process with four more calves the same spring, and I have five heifers coming two years old that are good and healthy.

These calves lay from two to four days more dead than alive, and I expected to find them dead every time I went to the barn. Of course, when a calf dies before it is 12 hours old, nothing could save it; but I have never thoroughly tried the lime-water remedy on a calf that has lived six hours after the first dose, without I have saved it. I hope the disease has run out, as I have not seen any symptoms of it this season in my herd.

I think we have learned a thing at the Shattuck farm that will save the women lots of work where they have to warm skim milk for the calves; that is, to warm the milk with boiling hot water. The calves seem to do better than when there is no water mixed with the milk. I am unable to account for it in any way, unless pure skim milk is too rich food for the young calf's stomach.

How to Use the Babcock Test.

So many of our readers are using the Babcock test, either in creameries or for testing the comparative value of their cows in the dairy, that the following practical suggestions for its operations, which E. H. Farrington gives in the *Agriculturist*, will be widely useful. Mr. Farrington writes:

When the inventor gave this method of milk testing to the public, it was first tried by chemists of experiment stations, or persons who were somewhat familiar with the chemical actions involved in the process. They found the results obtained by it were accurate as compared with those of the gravimetric methods they had previously used for getting the per cent of fat in milk; and to them the making of a test was wonderfully simple. The directions sent out by Dr. Babcock with this test were sufficient instructions for that class of workers to get good results. As its field of usefulness broadened and the men that milked the cows began to use the tester, it was soon discovered that the Babcock milk test was not an automatic machine. Although very simple to a chemist it was found to be not like a clock, which only needed to be wound up and left to run itself for ten minutes to give accurate results, but the wheels must be watched, the milk properly mixed, and the strength of the acid be correct.

Experience with this test, which was in constant use at the World's Fair dairy test, taught us to keep a watchful eye on the following points: The mixing and temperature of the milk; strength, temperature and quantity of the acid, and the need of keeping the acid bottle corked up when not in use. Also measuring and mixing the acid and milk in the test bottle, adding the hot water, measuring the fat and regulating the speed of the machine.

The inquiries frequently received seem to show that black or white stuff separating with the fat is the difficulty most frequently met with. They make an obscure reading of the per cent of fat because of the indistinct separation of the liquids. The common remedy suggested for this difficulty has been a change of acid. If there is "black stuff" in the fat, get a weaker acid; if a white curd separates in the fat column, change to a stronger acid. That a too strong or a too weak acid may cause this trouble, is undoubtedly correct in many cases, but not always. The manipulation of the test may also cause these defects. It was found that nearly, if not all the acid sold in Chicago for this purpose was made at one factory, and by conversation with the manufacturer it was learned that the still making this acid was running night and day, turning out the same quality of acid without change.

It has generally been supposed to be easier to test a mixture of the milk of several cows than that of one cow, and that possibly there might be found a cow's milk which could not be successfully tested. The observations given in this article are the results of a great many experiments made with the milk of each of the seventy-five cows in the dairy test of the World's Columbian Exposition. From May to October were made at least one hundred and fifty tests of milk every day. During this time samples of a great variety of milks have been tested. There have been great variations in the composition of these milks and the

characteristics and health of the cows. I was able to test successfully any milk received, and by proper manipulation to get a clear separation of the fat.

It is my opinion that returning the supply of acid to the party from whom it was bought is often unnecessary. Any person who has trouble from either the black or white substance separating with the fat can probably remedy the difficulty by some changes in the manipulation, provided the acid is anywhere between 1.82 and 1.83 specific gravity at 60° F. The black substance that appears is probably charred fat, and indicates too strong an action of the acid on the milk. The white adulteration of the fat shows either too weak a reaction or an incomplete separation by the centrifuge. Each of these defects can, of course, be produced by acid either very much too strong, or too weak. They can also be brought out by different manipulation when acid having the correct strength is used. An entirely satisfactory working of the Babcock milk test can be expected if, in addition to the elaborate details which the originator of the method has already worked out, the following precautions are observed:

First—An acid having 1.82 specific gravity should be used with milk at 60° to 70° F. If the acid is stronger, cool the milk to a lower temperature. Somewhat weaker acid can probably be made to work all right by warming the milk.

Second—When measuring the acid into the test bottles, hold the bottle at an angle that will cause the acid to follow the inside walls to the bottom of the bottle and not drop through the milk in the center of the bottle. If properly poured into the test bottle there will be a distinct layer of milk and acid with little or no black color between them.

Third—Thoroughly mix the milk and acid as soon as measured into the test bottle. A better separation of fat is obtained by mixing at once than by allowing the two liquids to stand unmixed in the bottle until enough tests have been measured out to fill the centrifuge.

Fourth—After five minutes' whirling of the test bottles in the centrifuge, add hot water until the test bottle is filled up to the neck only; run the centrifuge another minute. Adding the necessary hot water in two portions is often a great help in getting a clear separation of fat. When the test bottles are taken from the centrifuge they are put into water at 140° to 160° F., and the per cent of fat read at that temperature.

Fifth—Too low results will be obtained if the centrifuge does not have sufficient speed. The machines have to be watched, as constant use wears some of them so that the speed designed by the manufacturer is not obtained.

Sixth—When testing skim milks or buttermilks which have a very small per cent of fat—two-tenths of one per cent or less—the reading of the per cent of fat should be made immediately on taking the test bottle from the centrifuge. If this is not done, and the test bottle cools before taking the reading, the contraction of the liquid in the bottle will often leave the fat spread over the inside surface of the measuring tube so that it is not seen, but has the appearance of being only a dirty tube. If read when taken from the machine the small fat globules can be seen and estimated.

POULTRY YARD.

Turkey Raising in the San Joaquin.

A correspondent of the *Fresno Republican* gives the following excellent local points on growing the great American bird:

As this is the time to commence hatching our turkey eggs, or at least to commence the incubation of them, I thought that I might perhaps drop a few hints that would be of advantage to some one. To those who do not use machines for incubation, and use hens, I would say that in order to secure a good hatch, great care is required, for (as I have said in these columns before) while our adult turkeys are perhaps the hardiest of any of our domestic birds, their little poults are, I believe, without a single exception, the most frail, while young, of any. They often succumb to the most trivial causes; therefore it is the more necessary that we use every precaution and means possible to protect and preserve them.

In the first place, if you use hens, see that they are clear of vermin. Do this as soon as you find "biddie" has become broody. Select a suitable place for her, which should be on the ground and away from where others can bother her. At night place her in it, after having first thoroughly rubbed her coat under the wings, on the neck and head and on top the butt of the wings with a solution of one part coal oil to five parts lard or other fresh grease. Do this every other day for three times before giving her the eggs.

Now if she still holds her nest well, clean out all the refuse of the old nest and flatten and hollow out a place in the ground about the depth and shape of a large tin pie-plate. Sprinkle very thinly with fine chaff or chopped straw not over one inch deep. Then place nine turkey eggs in the nest so prepared, after having marked the date on which they should hatch (28 days from the one you set them on) with a good indelible pencil on the shell of each egg so that you will not lose the time for their coming off and the better to be prepared to receive them.

Now place "biddie" on them, and one week from that day put two hen's eggs in the nest so that when the turkey eggs hatch, you will also have a couple of young chicks come out at the same time, as we often find young poults very backward in learning to peck food; and by seeing the young chicks (which peck their food immediately on the day from their shell prison) pecking their food, they are themselves the more readily induced to do so.

Do not forget that their first food must be hard-boiled eggs, seasoned with red pepper, and this must not be given until they are at least 24 hours old, as nature has provided the food in great abundance to sustain them for at least that length of time. The last thing before a bird is liberated from its prison house is to take up the yolk of the egg,

and this is to sustain them until such time as it is calculated they can find food, the length of time differing according to the particular kind of turkey. For the first two or three days they will need this egg food for from six to ten times per day. Do not give them any drink until the second or third day; then this should be milk curd. After three or four days you can vary the egg diet by adding some bread crumbs, and, finally dropping the egg altogether, feed milk curds and scraps of meat and grain.

Care must be taken up to the time they are from four to six weeks old to keep them out of the cold and wet; especially must this be looked after in the mornings this time of the season. A nice flock of turkeys will make a fine showing on or about Thanksgiving time, and be found then to pay well for all the care they have had. I am glad to note that quite a few have turned their attention to poultry of late. I wish them all success and will do all I can to assist them.

There seems to be a good deal of inquiry for purely bred stock and eggs. I have had several letters asking me where they could get stock that was strictly pure, and I must confess I could not tell where there was any that I was certain were kept pure, as the habit to allow all breeds to run together is calculated to prevent one's certainty of the purity of their eggs. Poulterers, see to this; there is something in it for the man who will keep purely bred stock, especially the Plymouths or Wyandottes. Why do we not hear from others on this subject? OLD DOCK.

Dead in the Shell, Etc.

TO THE EDITOR:—Can any one among your subscribers tell me the trouble with my incubator chickens? All goes well until the 21st day. A few eggs hatch perfectly—chicks are clean and dry off nicely. A few hours later the eggs are nearly chipped, when a thick, clear, shiny substance covers the chick's head. This dries and becomes too hard for the chick to penetrate. Increase of moisture seems to do no good. They die in the shell sometimes without any opening having been made. The few which are successful in hatching have their heads glued to their wings or their eyes closed—in fact, they are miserable, sticky creatures.

What is the cause? Too much moisture or too little? The machine is a hot-air one, and I follow the rules for increasing moisture somewhat the last day or so.

Feb. 22, 1894.

SUBSCRIBER.

[Will some of our incubator chicken growers explain this matter?—ED.]

Some Fine Chickens.

Says the *Petaluma Courier*: At the recent State Poultry Show in Petaluma, J. W. Forgeus of Santa Cruz, the well-known breeder of Brown Leghorns, entered some fine birds of this strain, and in competition with the world he has more than once carried off first premium.

His cockerel, "Captain Moore," and pullet, "Nina Belle," as a matter of course, won prizes at this last show, and the former, a grand specimen of the Barred Plymouth Rocks, will be recalled to mind by all who visited the show. The bird is three ounces over standard requirements, his comb is perfect, and his other markings are A1; but if he was cock of the walk, Nina Belle was the belle of the ball. She strutted off proudly with first premium; but that is getting to be an old story to this dainty pullet, for at all shows, including the recent Hamburg (N. Y.) show, where she distanced all World's Fair competitors, she carried off her laurels in the same easy way. Mr. Forgeus is an enthusiast in poultry, and understands breeding for points as thoroughly as any man on earth.

THE FIELD.

The Best Methods of Arranging Load and Draft in Hauling on Farm Roads.

TO THE EDITOR:—A late number of the *Deutsche Landwirtschaftliche Presse*, the leading agricultural journal of Germany, publishes the report of experiments made under the auspices of the Agricultural Institute of the University of Leipzig, for the purpose of testing practically the correctness of the extremely divergent views on the most advantageous mode of distributing the load and applying the draft in the case of farm wagons.

According to theory, on a hard and perfectly smooth plane it makes no difference on which part of the wagon the load rests or the draft is applied; and experiments made under these conditions confirm the prediction. But in farm practice we have to do, as a rule, with road surfaces more or less yielding; and the difference in the size of the front and hind wheels adds a complicating element, since the latter are supported on a larger section of their circumference than are the smaller wheels. In the latter, moreover, axle friction is greater than in the larger wheels.

The consequence is that, supposing the load to be so distributed as to rest equally on the front and hind wheels, the former sink more deeply into a soft road surface, causing an increased resistance as compared with the hind wheels. It seems reasonable that in order to equalize the resistance between the two sets of wheels, the front wheels should be eased by every available means, the more as, in case the hind wheels track with the front ones, the latter have to "break the way" for both.

The experimental tests were made by means of a specially perfected self-recording dynamometer, by which not only the average draft, but also its variations from one moment to another were accurately shown. These automatic diagrams are specially interesting in that they show in the most striking manner the extent to which the wear and tear on the team is aggravated by the constant succession of jerks, and how important it must be to obliterate

these jerks by some equalizing appliances before they reach the draft animals. The averages given in the tables below were, of course, obtained by a proper discussion of these diagrams in connection with previously determined constants of the dynamometer; the results are expressed in kilograms of weight required to overcome the resistance, by draft. The wagon was, of course, specially selected for good construction; its weight was 1051.5 kilograms (2313.3 pounds). A team of steady oxen were used for draft, and comparative trials were made in every case between hauling on a common field (dirt) road and a stubble field.

The first set of experiments was made with a load of 1440 kilograms (3168 pounds) and without varying the ordinary attachment of the traces. The load was alternately put entirely on the front wheels, and then on the hind wheels, with the results as a given below.

SET I.

	Field Road.	Stubble.
Load on the front wheels.....	73.8	466.0
Load on hind wheels.....	60.3	381.6

Calling the draft when the front wheels were loaded, 100 per cent, we obtain the following figures:

	Field Road.	Stubble Field.
Load on front axle.....	100.0	100.0
Load on rear axle.....	81.7	81.9

Trial set No. 2 was made on the following day under the same conditions, with a two-horse team instead of the ox team; the results were practically identical, showing in each case an advantage of from 10 to 13 per cent in favor of loading the rear wheels.

A third set of experiments was now made, including one with the load evenly distributed between the front and rear trucks, but with an increased weight, amounting to 1680 kilograms (3696 pounds). The results were:

	Field Road.	Stubble Field.
Load on front truck.....	112.5 kg.	368.1 kg.
Load evenly distributed.....	108.9 kg.	298.8 kg.
Load on rear truck.....	92.7 kg.	328.5 kg.

Or in per cents:

	Field Road.	Stubble Field.
Load on front truck.....	100.0 per cent.	100.0 per cent.
Load evenly distributed.....	96.8 "	81.2 "
Load on rear truck.....	82.4 "	89.2 "

The divergent result in the case of the stubble field experiment and evenly distributed weight is attributed to the accidental choice of a comparatively dry ridge instead of the well-soaked lower ground. However, taking all the trials together, there can be no doubt of the material advantage of loading the front truck as lightly as possible.

The next points experimented on were the influence of the point of attachment of the draft, or traces, and that of the greater or less length of the latter.

One set of experiments, made to compare the results as between an ordinary field road and a regular driveway, gave the following percentage results:

	Field Road.	Driveway.
Attachment low, traces long.....	100.0	100.0
Attachment low, traces short.....	77.0 per cent.	81.9 per cent.
Attachment high, traces long.....	71.8 "	80.9 "

These measurements confirm the current assumption that short traces lighten draft, as derived from experience. That the difference is less on the smoother driveway than on the dirt road in the field also agrees with the assumption, since on a perfectly smooth surface there would be no difference; the effect of short traces being to facilitate the lifting of the load over the inequalities of the roadway.

As between the field road and the stubble field, the following percentage results were obtained:

	Field Road.	Stubble Field.
Attachment low, traces long.....	100.0	100.0
Attachment low, traces short.....	89.6 per cent.	96.0 per cent.

Trials were also made to determine the effect of attaching the draft at the end of the wagon tongue. The following table summarizes the results obtained on the stubble field:

Attachment low, traces short.....	298 kg. or 89 per cent.
Attachment low, traces short.....	311.4 " or 100 "
Attachment at end of tongue.....	339.3 " or 109 "

Other experiments showed this difference to be still greater when, in attaching the draft at end of tongue, the load was placed on the front truck.

While it is not pretended that these experiments settle definitely the several points, they serve to point out the directions in which advantages in lightening draft may certainly be gained; namely, by disposing the load as near as possible to the rear truck, and by using short traces. The fact that draft animals hitched to the end of the wagon-pole (as in teams of more than two) do not work as advantageously as the wheel horses hitched with short traces, though well recognized by the practice of using the strongest animals in the latter position, is now, for the first time, demonstrated by measurement.

Collaterally, this series of trials serves well to illustrate the importance of good, smooth roads, in which all these differences are reduced to a minimum and the best results can be obtained under greatly varied conditions, as they must unavoidably be in practice. It may well, therefore, serve as a text to those of our citizens who, of late, have manifested such an active interest in road improvement.

E. W. HILGARD.

University Experiment Station, Berkeley.

Peanut Cleaning and Grading at the South.

When the peanuts arrive at the factory they are rough and earth-stained, and of all sizes and qualities, jumbled together, says the *Blue and Gray*. The bags are first taken up by iron arms projecting from an endless chain to the fifth story of the factory. Here they are weighed and emptied into large bins. From these bins they fall to the next story, into large cylinders, 14 feet long, which revolve rapidly, and by friction the nuts are cleaned from the earth which clings to them and polished, so that they come out white and glistening.

From this story the nuts fall through shoots to the third and most interesting floor. Imagine rows of long, narrow tables, each divided lengthwise into three sections by thin, inch-high strips of wood. These strips also surround the

edge of the table. Each of these sections is floored with a strip of heavy white canvas, which moves incessantly from the mouth of the shoot to an opening leading down below at the farther end of the table. These slowly moving canvas bands, about a foot wide, are called the "picking aprons."

Upon the outer aprons of each table dribbles down from the shoot a slender stream of peanuts, and on each side of the table—so close together as scarcely to have "elbow room"—stand rows of negro girls and women picking out the inferior peanuts as they pass, and throwing them into the central section. So fast do their hands move at this work that one cannot see what they are doing till they cast a handful of nuts into the middle division. By the time a nut has passed the sharp eyes and quick hands of eight or ten pickers, one may be quite certain that it is a first-class article, fit for the final plunge down two stories into a bag which shall presently be marked with a brand which will command for it the highest market price.

The peanuts from the central aprons fall only to the second story, where they undergo yet another picking over on similar tables, the best of these forming the second grade. The third grade of peanuts, or what remains after the second picking, is then turned into a machine which crushes the shells and separates them from the kernels. These are sold to the manufacturers of candy, while the shells are ground up and used for horse bedding. So no part of this little fruit, vegetable or nut, whichever it may turn out to be, is finally wasted, but all serves some useful purpose.

Cost of Wheat Growing.

If former statements of wheat-growers are correct, much of the last crop was grown at a positive loss. The export price for the last fiscal year was a fraction less than 80 cents, the average farm price only 62 cents, while the average price in Nebraska was only 50 cents; in South Dakota, 51 cts.; North Dakota, 52 cts. at the railway; and at points remote from market scarcely 40 or 45 cents. It is not long since the growers in these districts declared that the crop would not pay the expense of cultivation at less than 60 cents. As the yield of this region was not much more than 12 bushels per acre, the gross proceeds were only about \$6 per acre. What sort of cultivation would this pay for, defray the expense of threshing and delivery, and meet the interest on the investment, to say nothing of profit? I will not here go into the details of cost, which vary so much with the condition of the soil, methods of culture, efficiency of teams, the implements used and energy of management. If there are soils and treatment that give 16 or more bushels, the compensation is greater, and probably the profit; but for the fields that yield only six to ten bushels, it is difficult to see how a loss could be avoided. Such prices, with the deterioration of soil resulting from continuous cropping, in disregard of rotation, must result in ultimate degradation of fertility and value.

Official investigation, by State authority, has been made of the cost of wheat-growing in Illinois, and comparisons made with the value of the crop. In some years a profit is declared; in others a loss. The cost, as reported, varies somewhat from year to year—rarely less than \$10 per acre; often considerably more. The difference between New York and Dakota is not one of rate of wages, but of amount of labor. More cultivation is given, and the larger cost sometimes secures the better margin of profit. Farther east the cost is still greater, the yield quite as good and the profit possibly as large from higher prices of grain and the value of the straw. In New England, wheat may not be a profitable crop, and it is little grown in competition with the West; but the yields are generally greater per acre than in the best wheat-growing regions of the prairies, because of the better cultivation and care of the crop.

In Great Britain, where land is held at several hundred dollars per acre, wheat is still grown, though not as extensively as formerly. It seems incredible that rent and tithes to an amount greater than the gross income of a Dakota wheat field could be paid by an English grower, and that other expenses should swell the cost of cultivation to an equivalent of \$30 per acre, and still making a profit while selling the crop at 85 cents per bushel. Yet I have such a statement from credible authority. The cultivation included two three-horse draggings, drilling, harrowing twice and rolling in spring; cutting, carrying, threshing, winnowing and marketing were subsequent labors. The yield was 40 bushels, price 28 shillings (\$7) per quarter of eight bushels, and the straw, one ton, ten hundred weight, brought two pounds (\$8) per acre. The straw alone brought about as much as the entire crop is worth in Illinois. The lessons that these facts teach are thoroughness, high culture, rotation and sustained fertility. Slipshod husbandry never pays. Primitive methods are unprofitable. Makeshifts and temporary expedients may secure a small present profit at the expense of loss of fertility.

The exclusive wheat belt is receding. It is well that it is. Long since miscellaneous agriculture and horticulture took the place of exclusive wheat in western New York. Twenty-five years ago one could scarcely find butter enough in eastern Minnesota to grease a griddle, while the autumn nights were lighted with bonfires of thousands of tons of wheat straw, where now diversified production and plenty rule. Now there are counties in southern Dakota where such a change has already been effected. Perhaps low prices will prove a godsend to western agriculture, by driving exclusive wheat culture out of existence. Let wheat have a place in rotation, with 20 to 30 bushels per acre as a yield, but put labor to a better use than swelling a surplus product to the depression of prices. There is no need of growing wheat at a loss, where other products are demanded at fair prices, and it is unwise to persist in competing with half-price labor in Russia and the few cents per day competition of India. It is a perversity that nothing but hard times can cure. There is a conservatism that resents advice to quit unprofitable culture, as impertinent interference with one's right to do a foolish thing. If anything will cure the wheat craze, the present prices ought to suffice.—J. R. Dodge in *Agriculturist*.

THE HOME CIRCLE.

The Doorstep.

The conference-meeting through at last,
We boys around the vestry waited
To see the girls come tripping past,
Like snow-birds willing to be mated.

Not braver he that leaps the wall
By level musket-flashes litten,
Than I who stepped before them all
Who longed to see me get the mitten.

But no, she blushed and took my arm!
We let the old folks have the highway,
And started toward the Maple Farm
Along a kind of lovers' byway.

I can't remember what we said,
'Twas nothing worth a song or story;
Yet that rude path by which we sped
Seemed all transformed and in a glory.

The snow was crisp beneath our feet,
The moon was full, the fields were gleaming;
By hood and tippet sheltered sweet,
Her face with youth and health was beaming.

The little hand outside her muff,—
O sculptor, if you could but mold it!—
So lightly touched my jacket-cuff,
To keep it warm I had to hold it.

To have her with me there alone,—
'Twas love and fear and triumph blended.
At last we reached the foot-worn stone
Where the delicious journey ended.

The old folks, too, were almost home;
Her dimpled hand the latches fingered,
We heard the voices nearer come,
Yet on the doorstep still we lingered.

She shook her ringlets from her head,
And with a "Thank you, Ned," dissembled,
But yet I knew she understood
With what a daring wish I trembled.

A cloud passed kindly overhead.
The moon was slyly peeping through it,
Yet hid its face, as if it said,
"Come, now or never! do it! do it!"

My lips till then had only known
The kiss of mother and of sister,
But somehow, full upon her own
Sweet, rosy, darling mouth, I kissed her!

Perhaps 'twas boyish love, yet still,
O listless woman, weary lover!
To feel once more that fresh, wild thrill
I'd give—but who can live youth over?

—Edmund Clarence Stedman.

Harvey Langford.

IT'S hard work pleasing you, Harvey Langford. I gave up the attempt long ago," said Ina Barlow, with a shrug of the shoulders.

They were pretty shoulders, white and dimpled, gleaming from under the dainty muslin dress; but the shrug was undeniable, and followed up by a toss of the head and pout of the red lips.

"I should not suppose one could judge of the difficulty attending an untried task," retorted the young man. "You know well enough what would please me, Ina, and you are also fully aware that you constantly pursue the opposite path. Will Strong and Jo Dering are good enough fellows in their way; but for all that, you need not reserve all your smiles for them. Let them know how matters stand between us—"

"And how is that?" interrupted the girl, with a quick flash of her eye.

"Ina, didn't you give me your promise a month ago?" And the young man's honest brown eyes looked steadily into hers.

"I told you when you got to be overseer at the mines I would think about it. There's plenty of time between now and then for me to change my mind—if, indeed, it has ever been made up. At all events, frowns and fault-findings won't make me any the more eager for the day to arrive."

"Ah, darling, when that hour comes, the frowns will have been chased away forever. Come, dear, tell me if you love me just a little. Perhaps I am unreasonable, but I can't help it, Ina. When I see you with other men, and you seem so cold and indifferent to me, I feel as though I could kill them and snatch you away where no eye but mine could dwell on your beauty. There dear, I must leave you. Say good-night and give me a corner in your dreams."

The girl's eyes had softened now. The bright, young mouth quivered, and the full, red lips were raised to meet the warm, glowing kiss her lover left upon them.

"I do love you, Harvey," she whispered, "if you would only not be so cross."

"I know it, dear," he answered.

And gathering her in his arms as though she had been a feather, he pressed another kiss upon the chestnut-crowned head, and then went out into the night.

The scene just enacted was no uncommon one. Though but a rustic beauty, whose views of life were bounded by the village horizon, she had grown up a willful, petted thing, with her feet as carefully guarded

from the rough paths as any high-born lady in the land. True, the pretty arms were often bared to the elbows as the little hands worked busily in and out of the dough, but it was only when the whim seized her and some especial treat was to be prepared for the father whose law was her wish. And though neither silk nor satin rustled in her train, the pretty muslin, the fresh calico, relieved by bright ribbons at throat and waist, left their absence unnoted. On the clear, young brow no shadow of care had ever rested, and so she had grown up a thing of light and shadow, frowns and smiles, but with the light so dazzling as to obscure the shadow, the smiles so sweet they even seemed to chase away frowns. Admiration was to her what the dew is to the flower, and it was little wonder that oftentimes Harvey Langford's heart grew still with honest dread, or that he longed for the day to come when he might gather this wild-flower to his breast.

The present overseer of the mines was growing old and unfitted for his post. With the new year a change was to be made, and words the principal had dropped into his ear had given him the hope he was to be the successor. He could make for Ina then a home such as she left, only glorified by their mutual love; and as he wends his way homeward his breath comes short and quick in thinking of that time.

Another month rolled by, and Harvey Langford spent his days in a strange alternation of joyful hope and jealous anger, though latterly the former was slowly dying out. Ina began to treat him with suspicious coldness. She no longer bore allusion to the fulfillment of her promise, and her smiles grew more frequent to others as they lessened to him. He was pacing up the long lane leading to her door on one October afternoon, revolving many bitter thoughts and determining to make to Ina one last appeal, when, turning a bend in the road, he saw two figures a short distance ahead. There was no mistaking the straight young figure, with the pretty hat coquettishly placed upon the night-curls; but the man's heart beat thick and fast as in the tall, manly form at her side he recognized Will Strong.

No wonder she had grown cold and hard, when she held secret meetings with this man. He could hear no spoken word between them, but he saw that the girl's head was bent low, one little foot tapping the dust and her ungloved hand clasped within those of her companion. He was talking low and earnestly, and when she answered, the air of coquetry always with her had disappeared. Her manner was as grave as his own. He could almost see the crimson flush upon her cheek, for her head was raised now, and she was speaking in low, rapid tones. Then she ceased, and Harvey Langford's face grew white with the pallor almost of death, and from his eyes shone a fierce flame, as he watched the man before him bend and kiss the lips turned to him, then turn and hasten in the opposite direction.

A few quick, imperious strides brought him to her side. Her head was turned from him, her face buried in her hands; then she felt his grasp upon her arm, and, looking up saw in the stern, pale face before her that he had seen all. The blue eyes were wet, the long lashes clinging to the fair, delicate cheek, the little mouth half apart and quivering; but the picture brought no softness to the eyes which drank in all its beauty.

"Parting from your lover, were you? For how long—twenty-four hours? A pity any one should have witnessed the tender scene! Child! Woman! Devil! What are you, and what have you done this day?"

"Nothing that I have cause to blush for," and the face raised to his was as pale as his own; the eyes flamed with an answering flash. "If you had come to me like a man. Harvey Langford, I could have told you all you want to know, but you came instead to spy upon my actions, and you have received a spy's reward. From this moment you have lost the right to question, or I to answer. I have made a narrow escape from the jealous meshes in which you would have bound me, but the coils are broken. I am free, and so are you."

"I am not the first man who hugs a serpent only to feel its sting. God pity the man who takes your fair face and your false heart to sit beside his hearthstone. Heaven help me! I thought the inner life as pure and spotless as the outward show. Listen, girl! For you I toiled; the thought of you made labor sweet; the hope that your beauty would brighten my home, your smile welcome my coming, had made of me a better man. All, all is now but ashes in my grasp. I plucked the opening blossoms, only to find that I had gathered Dead-Sea fruit. Were you to come to me to-morrow a suppliant for the place I once so proudly offered, I would spurn you as now!" And shaking off his grasp from her arm with one look of bit-

terest contempt, he left her where he had found her.

"Harvey! Harvey!" she cried out at last; but his figure was far away, his ears deaf to her appeal, and like a wounded bird she sank upon the ground.

The dull November days were drawing to a close, the trees were stripped of their brilliant foliage which so lately had adorned them, the earth lay cold and bare, waiting for its snowy mantle, when, on a gray, chill morning, a low rumbling sound in the vicinity of the mines caused men to look at one another with anxious dread, which at last found vent in the fearful cry:

"The mine's on fire!"

It was not long ere all the population had gathered to the spot—the women with pallid faces, but lips that issued forth no moan, the children clinging to their skirts, sobbing, though for what they knew not.

"The wall will soon fall in! Some one must go to the rescue!" said a voice.

Then Harvey Langford stepped forward. "I am ready," he said, and in his eyes shone a calm determination, a quiet fearlessness, which showed, though he fully appreciated the danger, he would not falter.

"Harvey," whispered a voice in his ear; and falling back a step, he turned to see the fair beauty of the girl he had once so madly loved.

"Well, what do you want?" he questioned, roughly. "To look once more upon your work ere I go to my doom?"

"No, Harvey," the sweet young voice faltered. "To beg you, for my sake, not to go. I have suffered so, Harvey. Let me tell you how. It was not as you supposed. Will Strong had asked me to marry him, and I—I had told him I could not, because—because of my love for you; and when I said that, he told me you were a good, brave fellow, and since I could not care for him, he only hoped I might be happy; and then, Harvey, he begged me just to give him one kiss to take with him into his new life, and so I—"

"Gave it—yes, I saw it all. A well-told story, Ina Barlow—a story you may whisper in my dead ears when they bring, an hour hence, perhaps, my lifeless body from the mine." And, with a harsh laugh, he pushed away the little hand laid so pleadingly on his arm. "Stand back, men, I am ready." And in another moment the descending shaft hid him from their sight.

Minutes passed, which to those waiting seemed endless hours. The smoke came up in thick, hot gusts, and an awful silence fell upon all. Still came no sign from those shut from their sight of whose fearful danger the low, rumbling sound and dense smoke gave proof.

"The old shaft!" at last exclaimed a voice. "Could one enter by that, he could go below and warn the men which way safety lay."

But the opening was so small that a child only could effect a passage, and in what childish heart lay the heroism which should nerve it to face such dangers. Into Ina Barlow's pale face came a gleam of color; one glance at the slight figure, one prayer upon the pure lips, and she stood forward.

"Take me!" she simply said. "I go to save the man I love."

In her eyes shone a dauntless courage, and no man dared say her "Nay." But when she had at last gone into that awful chasm, which seemed to swallow up all in its vast yawning mouth, a groan burst from the lips of those present—a groan, followed by a cheer, as Harvey Langford's form appeared again in sight and one by one the miners followed. In that fearful peril which he had but just escaped, a sweet young voice seemed again to echo in his ear, a dim wonderment to pierce his brain as to whether its ring of truth were real, a wild desire to look again upon her face and read therein the secret; but in vain he searched to find her fair beauty. The chestnut-crowned head was nowhere to be seen when, in rough whispers, from mouth to mouth passed the knowledge of her deed, and his quick ear caught it.

"Cowards!" burst from his white lips.

"You would let a woman do this thing!"

"She said she went to save the man she loved," spoke one.

And in Harvey Langford's eyes there shone such joy as hid the misery there written, while on his lips uprose a wild prayer as once again he plunged from their sight. Lying where she had fallen, like a lily from its stem, white and senseless, he picked her up and bore her to the shaft. Many strong arms came to the rescue; but the cheers fell on dull, lifeless ears, and for a while they thought death had claimed them both. But life held too much promise; and when, scarcely three months later, the new overseer of the mines claimed his bride, distrust had vanished from both their hearts;

and, while kind and cheering wishes fell like hail upon them, in Harvey Langford's simple, quiet words "My wife!" as they stood upon the threshold of their new home, sounded the thanksgiving of a life.

Eyesight and Spectacles.

The proportion of people who wear spectacles is constantly increasing. Is this a thing to be lamented? In other words, does it indicate a deterioration of eyesight under modern conditions of life? Those who may be supposed to be best qualified to answer these questions answer them without hesitation in the negative. More spectacles are worn, not because poor vision is more common, but because the eye has been more intelligently studied.

A recent writer in the *Atlantic Monthly* says it is the exception to find persons whose eyes are normal and perfect. At an annual meeting of the British Medical Association, not long ago, the president of the ophthalmological section expressed the hope that the time will come when "a man who goes about with his eyes naked will be so rare that the sight of him will almost raise a blush."

This is as much as to say that since almost every man's sight needs correction, it will be a sign of advancing knowledge when almost every man wears spectacles. Of the advance already made in this direction the *Atlantic Monthly* writer says:

"The methods of testing the defects of vision have, in the last two decades, been brought to a standard of accuracy and refinement previously unknown. Thus many troubles, disabilities and maladies hitherto suffered in patience, or treated incorrectly and in vain, are now traced to defects of vision, and are quickly remedied by the use of appropriate glasses, concave, convex, cylindrical or prismatic.

"The schoolboy's headache, the seamstress's browache, the convergent squint of childhood, so far as they are the results of faulty refraction, are beginning to be erased from the catalogue of human woes."

Some specialists go so far as to maintain that every child should have his vision tested by a competent oculist. "It is far better," says the *Atlantic* writer already quoted, "to discover visual defects and to remedy them at the beginning of school life than to have the child sent home after his sight has been seriously injured, as dull of vision, or unable to get through his studies, and the subject of periodical 'bilious headaches'—matters nowadays of constant occurrence."—*Youth's Companion*.

Bribing Children.

There is not one of us but has a profound contempt for both the giver and the taker of bribes. Whenever we behold the evil cropping out in our political institutions, as is unfortunately sometimes the case, we raise our voices in loud and vigorous indignation. Yet here again is a moral principle, which, when applied on a large scale, we regard with horror, but which we frequently and unconsciously introduce into our own homes, says the *Boston Budget*.

The practice of bribing the children is widespread. There is hardly a home that is not guilty of it at one time or another, and the effect is, though in a less degree, much the same as when practiced in the larger fields of the world. It is a very easy matter to fall into this fault, because we feel an unusually tender sympathy for the little ones, and it is much easier and far more pleasant to reward them than to punish them. The chances of doing harm, however, are equally great in both cases. Indiscriminate punishment is often to blame for cowardly and deceitful traits in children, but, on the other hand, careless and injudicious rewarding makes the child bold and defiant. A good effect may be apparent for a time, but satisfied greed is a poor principle upon which to build a strong, self-reliant, manly character.

The child as well as the older person has duties to perform, and it is emphatically unwise to bribe him to do what he knows is right. Upon this point all mothers should read Miss Scoville's article in a recent number of the *Ladies' Home Journal*, where, in a severely direct paragraph, she says: "Recognizing at last that her child has faults which ought to be cured, the injudicious mother tries to obtain the desired result, not by eradicating the root of the mischief, but by cutting off a shoot here and there. Instead of talking plainly and lovingly with him, teaching him to see that it is a sin he must fight against, and showing him where he can go for help, she bribes him to overcome some special manifestation of it. She rewards him for being prompt at meals, or for getting up early in the morning, or for not teasing his sisters. The selfishness

is only turned in another direction; not one step has been taken toward uprooting it." And again: "It is no generous rivalry that is fostered by offering prizes to children. Let us depend upon awakening their ambition by other and purer means, permitting them to taste the sweets of well doing for its own sake, leading them on by every method in our power to understand that virtue is its own reward, not a scanty, but an exceeding great one, and strengthening them, as far as our earnest efforts can do so, to follow it ungrudgingly."

Fashion Notes.

Handsome new gowns are made of soft-textured, seeded satin in black or dark colors, with black watered silk skirt frills, and full, mutton-leg sleeves. Any extra garnitures are of black lace.

Shirt waists and blouses made of washable fabrics in plain, beautiful colors, in pink, ciel blue, cream, etc., and in stripes, checks and fancy combinations will again be highly favored for city and country wear.

Fayette, one of the new very popular spring fabrics, is extremely pliable, being finished without dressing of any kind. It is woven on silk warp, and merchants claim that it will not spot. This, indeed, they warrant. It comes in colors and black, and is 42 inches wide.

Dressy toilettes of fine black woolen and silk warp fabrics are prettily made up with yoke, crush collar and belt of colored shot velvet. Vests, full sleeves, girdles and a circular flounce of velvet appear on handsomer gowns of black silk or satin, with frequently epaulets or collarette of white lace.

So far as can be judged at present, the spring indications are for quiet, rather neutral tints for round hats, toques and bonnets in straw and chip, leaving the milliner more scope to use the brilliant trimmings of flowers, feathers, ribbon and lace, which are already adorning the windows and shelves of leading importing houses.

Some of the new princess dresses are made with the waist portion buttoned diagonally from the left shoulder, the buttoning extending on down the entire length of the skirt. The edge which laps is either piped, braided or cut into points or straps, with a handsome button in each strap. Other models are made with a peplum overdress.

Fashion still smiles most approvingly on all the eccentricities employed in broadening the feminine shoulders with berthas, bretelles, cape collars, revers, puffs, frills and all sorts of wide-spreading elegances in lace, velvet, silk and moire. The majority of the fancy sleeves have passed from a quaint and charming style to ultra-distorted outlines which are neither pretty, picturesque nor artistic.

Many of the spring patterns in satins, bengaline silk and woolen mixtures are so woven as to give them a changeable effect, and the designs on their shimmering surfaces are small as a rule, and often in rich Persian color mixtures. Dark bengalines shot with a color and figured with a silk dot make admirable vests and sleeve puffs for woolen costumes of medium weight.

Nearly all the new cloth gowns have some sort of basque over the hips. A pattern that seems to meet with much favor is the short "ripple" flounce, that is cut in circular shape, with no seams, at the side and opening front and back. This may be entirely separate from the waist, to which it is joined by a belt. Short, flat tabs of cloth are also quite popular on the tailor-made gowns, which are as elaborate this season as those from the dressmakers, having lost their character for severity and simplicity.

All indications point to a continuation of the immense sleeves that fashion has elected for two seasons past. So long as their vogue is unchanged the open flowing cape will be a leading wrap, for it is utterly impossible to wear a jacket with sleeves of any normal size above the dress sleeves of the present without crushing ruin to the sleeves; and to shape the coat sleeves large enough to go on easily over the newly-inflated under ones would make a caricature of both coat and wearer.

Skirts do not change greatly in style or shape, remaining close about the hips and flaring from the knee down. Many, when made of single-width goods, are of half-circle shape, with the single seam up the back, while others of narrow-width silk and other materials have gored breadths and godet plaits in the back. Overskirts come slowly but surely to the fore, and the long styles are about equally popular with the pointed apron or tunic shapes. There is no particular enthusiasm, however, over the fashion in any of its guises.

YOUNG FOLKS' COLUMN.

Baby Willie.

There is a wee man I have happened to meet,
Whom surely you'd love, he's so dainty and sweet,
His roguish blue eyes, how they sparkle and shine,
How loving their glance when they gaze into mine.

So thoughtful he looks, he must be very wise;
He's wondrous good natured—except when he cries;
He's fond of a frolic, a dance, or a song;
And he helps us by hindering, all the day long.

This wee, busy man is the darling of all,
The pet of the household, whatever befall.
We almost are sorry to think he must grow;
He's the most charming baby—except yours, you know.

His words, though they're few, are of influence great;
No mightier sovereign rules o'er a State;
His retinue meekly allow him his way,
And seldom are known to rebel at his sway.

Now, what is his name? and now, where does he live?
How can you expect me such pointers to give?
Somebody might steal him, if only they knew
Half how cunning he is, or the things he can do!

S.

Tommy's Hero.



OMMY PERRY was seven years old; an uncommonly bright little fellow, fond of mischief, yet withal sensitive, thoughtful and not a little inquisitive. His home was in South Boston, near the famous Dorchester Heights, where, in the year 1776, during the war of the Revolution, a detachment of the American army secretly intrenched themselves, and planted a battery so successfully that the British troops were compelled to sail away from Boston harbor, never to return.

On the morning of the twenty-second of February, in the year in which the incident herein related occurred, Tommy was very quiet and thoughtful during the breakfast hour. He had been told that it was a holiday, because it was the birthday of George Washington, and he was trying to imagine what sort of a man it could be who was so worthy of honor that business was suspended and schools closed upon his birthday.

Mamma noted that her little son was trying to solve some knotty problem, so, when the morning meal was over, she drew him to her side and said, "Well, dear, what is it?"

"Mamma, who is George Washington? Why do we not go to school on his birthday?"

Mrs. Perry then told him the story of the "Father of his Country," the great and good man who was commander in chief of the American army during the long struggle which resulted in the independence of the American colonies and the founding of the United States Government, which is now so great a power among nations. She told him briefly of the occurrences of those days in the vicinity of Boston, especially the successful strategem which made the neighboring heights historic ground.

She also related how, the victory won, the successful and beloved general was recalled from his beautiful country home at Mount Vernon, to become the first President of the new Republic, in which capacity he was equally successful, and thus endeared himself to the American people for all time. Nor did she neglect to impress upon the young mind the fact that the great soldier and statesman, who is ever "first in the hearts of his countrymen," from his early childhood loved truth and right, and because he was good, as well as great, his people have ever delighted to honor him.

Tommy listened attentively, his brown eyes dilating as his mother proceeded. To make the story seem more real, Mrs. Perry led her little son to another room, where upon the wall hung an engraved portrait of the great general, dressed in full uniform, a drawn sword in his hand, and mounted upon a handsome white horse.

Tommy was deeply interested, but not satisfied. His knowledge of birthdays included only those occasions which came every year to himself and other members of the family, and Mrs. Perry had neglected to state that the hero of the day was dead. In Tommy's imagination he was a living hero, and could not be very far away—the little lad's world at that time was a very small one. He felt sure he should recognize the great man if he saw him; no one he had ever seen looked like the portrait, or wore such peculiar clothes. He would ask mamma where he lived, and some day he would try to find him. But as he was about to question her papa was heard calling, and mamma hastily left the room.

Tommy remained for a few moments

standing before the portrait in deep thought; then he left the room to look for mamma. He found her in the kitchen instructing Mary concerning the dinner, and before she was at liberty to answer his question, Archie Farrington, a cousin, of the same age as himself, came in. He had with him a note, written by his mother, which he was to deliver to Aunt Sue, who lived on the other side of the Heights.

"Please, Aunt Josie, may Tommy go with me," he said.

Mrs. Perry consented, and the little lads were soon on the way, Tommy having completely forgotten George Washington, and the questions he was to have asked his mother. Their course lay directly over the hill. As they approached the park as the summit they were startled by a terrible noise, such as they had often heard from the guns at the forts in the harbor, only much nearer and louder.

"It's guns!" said Archie; and they must be on the Heights. Let's go up."

The heavy sound was repeated again and again. The boys had been told that when a number of guns were fired in quick succession it was a salute in honor of some person of high rank.

A thought flashed across Tommy's mind which for a moment seemed almost to deprive him of the power of speech, but he soon recovered and exclaimed excitedly:

"O, Archie! it must be George Washington! They wouldn't fire guns for any one else to-day!"

"That's so," returned Archie; "perhaps if we go up there we'll see him."

The little fellows started to run, so eager were they. The boom of the great gun continued. Their excitement was so intense that when they reached the gate at the entrance to the park they were nearly breathless. As they toiled, panting, up the steep embankment, Tommy's face glowed with anticipation, for he felt sure when they reached the level plain at the top they would see the great general, sitting astride a magnificent white horse, arrayed in the picturesque Continental uniform, his sword in one hand and a funny three-cornered hat upon his head.

But there was only a crowd of men and boys, and the cannon in a cloud of smoke. No noble white steed. No heroic rider.

Tommy felt inclined to cry, but he would not; he was a boy; only girls did anything so foolish. He could not give up an idea easily. He was sure his hero must be somewhere about. A stout man with a pleasant face stood near. Perhaps he would know. Tommy approached him and said:

"Mister, will you please tell us where George Washington is? We came up to see him."

The man thus addressed stared at the boys in blank amazement, but as he noted their flushed, eager faces a broad smile spread over his good-natured countenance, and he ejaculated:

"Why, bless my stars, children! He's dead!"

This was too much. The sustaining sense of masculine superiority completely deserted our little man, and unmistakable tears rolled down his cheeks. Archie looked bewildered for an instant, then decided to cry because Tommy did.

The stout man, seeing their disappointment and distress, took some pennies from his pocket, and offered them to the children, saying: "Here, boys, buy something with these; that will be better than seeing George Washington."

But the disappointment was keen. They were not to be consoled by any such everyday manner. There must be a mistake somewhere. Surely, a man would not have a birthday if he were dead.

"I'm going straight home to ask mamma," said Tommy, and off he trotted, with Archie following close behind. The note for Aunt Sue was forgotten. The mystery must be explained. Other matters could wait.

A few moments later two excited little boys burst into Mrs. Perry's sitting room, where that lady sat reading.

"O mamma, is George Washington dead? We heard the guns—and we thought he was on the Heights—and we went up to see him—"

"And he wasn't there—and the man said he was dead—" interrupted Archie.

"And he wanted to give us some cents—"

"And we wouldn't have 'em—and—and—"

Here both boys began to cry again, and Mrs. Perry could not quiet them for some time. She finally succeeded, however, being materially assisted by the sudden entrance into the room of Tommy's sister, Isa, and his cousin, Nellie Farrington. Then the dignity of the wee men quickly asserted itself. It should not be said that girls had seen them cry, for had they not often said, in tones of withering contempt, that "only hables and girls would cry?"

When order was restored Mrs. Perry said:

"Yes, dears. George Washington is dead."

"But how can a man have a birthday when he's dead?" queried Tommy, indignantly.

Then she explained to them the beautiful truth that the good deeds men do live after they are gone from earth.

"Every one," she said, "cannot be great, but all may be good and true, and even though dead, they will always live in the hearts of those who knew and loved them."

—Helen Morgan.

Curious Facts.

There are now 17 crematories in the United States.

In 1890 the railroads of the world were estimated at 370,281 miles.

It is said that South Africa last year gave a profit of \$20,000,000 from its gold mines and \$7,750,000 from diamonds.

The average weight of 20,000 men and women weighed at Boston was: Men, 141½ pounds; women, 124½ pounds.

Humboldt describes an oak tree which he saw in France 90 feet in circumference at the base, and estimated to be 2000 years old.

The cave animals of North America, according to Prof. A. S. Packard of Brown University, comprise 172 species of blind creatures, nearly all of which are mostly white in color.

A splendid record for safety of ships and cargoes was made during 1893 by the large fleet of grain carriers between Pacific ports and Europe. The voyage is the longest and stormiest of all routes in the world's commerce, yet out of 326 vessels which sailed from San Francisco and other Pacific ports for Europe, only one failed to arrive at her destination safely and with cargo in good order. This one ship was stranded on a South Pacific island, and lack of wrecking facilities alone prevented her getting off and resuming her voyage. Her crew was saved.

Smiles.

Conclusive.—Will Askit—"How old should you say Miss Skinner was?" Maude Saysit—"Old enough for people to begin telling her how young she is looking."—Puck.

A Larger Class.—Miss Willing (meaningly)—"Do you know they are talking of putting a tax on old bachelors?" Mr. Border (more meaningly)—"They would raise more revenue if they'd tax all the old married men who wish they were single."—Life.

"How is Skimmins getting along in his profession?" said one Chicago man to another. "He is quite successful, I understand." "But he told me yesterday that he owed several thousands of dollars." "Yes; that shows how well he has established his credit."—Washington Star.

Any Change a Relief.—Figg—"Joskins has got a baby down at his house." Fogg—"Thank heaven!" Figg—"Then you are fond of babies?" "No; and I suppose Joskins will bore us to death talking about the brat. But he'll leave off bragging about his dog for a while!"—Boston Transcript.

Highest of all in Leavening Power.—Latest U. S. Gov't Report.

Royal Baking Powder
ABSOLUTELY PURE

PATRONS OF HUSBANDRY.

Random Thoughts.

By A. P. ROACHE, W. M. S. G. of California.

Brain and mind must win the fight,
That is waged by wrong against the right.

The master's office acknowledges with thanks the receipt of proceedings of the State Granges of Oregon, Illinois, Michigan, Rhode Island, Massachusetts and Connecticut.

Don't forget the Executive Committee meeting on the 14th of March, in San Francisco. Much of the success of the Grange Congress in April will depend on the labors of those present.

If you desire to see Sunset City at the very height of its glory, April or May will be the time. April will just fit the time for farmers—between last sowing and first haying. Come before the rush of harvest work.

It's an ill wind that blows no one good. The rate war between the great transcontinental railroads promises to be a bonanza to California, and especially to the Midwinter Fair. It will be the means of giving many an individual a peep at our sunny State and open their eyes to the fact that while bulls and bears still exist in the wilds of San Francisco, they are only a degenerated species of the genus Homo, and not of the genus Bovine, or Ursine, so there is no greater risk over the ordinary dangers of travel in visiting Sunset City than in visiting New York or Chicago.

Evolution has evolved many homely possibilities into beneficial actualities. It has long been urged that a matrimonial intelligence office is a long-felt want well appreciated by bashful maids and lovelorn swains. The grange supplies the want beautifully, and is warranted to be the greatest cement of hearts that the world has ever known. Try it, sisters and brothers who pine for companionship, and if you are a catchable bachelor, or a natty maiden, and are regular attendants of a live Grange without attracting your affinity in less time than a year, we will send you a sure cure for the "blues" in their worst form.

If a farmer, a merchant, or a builder, should employ a number of men to perform a certain line of work at a given place, and, after the nature, mode and extent of the work were fully explained and understood (the price agreed on being satisfactory to the workers) because of a difference of opinion among themselves, one would refuse to do this, another that, and a third the other, thereby delaying the work, engendering discontent among those who are inclined to do their duty, disappointing their employers and robbing them of so many days, weeks or months wages because they returned no equivalent for them—would not any fair-minded person advise to either compel the parties to fairly do the work, or fill their places by those who will? Yet the above is the exact condition of many of our State and, at present, our National Congress. Alas for baleful examples in high places! When our public servants so far forget their duties to their constituents, their State, their flag and their honor as to hamper, deadlock, hinder and clog the wheels of government, idly sitting and garrulously arguing, to the tune of a large salary, for lost time, wrung from the purse of every taxpayer, feigning only to gain some party advantage, it is time a new understanding was arrived at and then that eminently just business principle "no work, no pay" would have a salutary effect in eradicating an abuse as foolish as it is disgraceful, as despicable as it is idiotic.

The question is asked, "Has not the grange outlived its usefulness?" No; not as long as shameless immorality walks up and down the length and breadth of the land! No; not as long as bribery and corruption, trickery and fraud blacken the calendars of our courts of justice! No; not as long as the "rum fiend" with maudlin jeer and maniac shout rushes in through the doors of peaceful homes, grappling and carrying away our bravest and best, closing the gates of innocence and honor on our daughters and casting into pauper graves the defiled and worthless bodies of our brightest sons! No; as long as there remains one sentiment of love in the human heart; as long as virtue, honor, justice and truth are pearls of greatest price, and as long as greed, crime and shame distort the image of God, so long will the grange be needed, and just so long will its usefulness remain unimpaired.

Pennsylvania is one of the leading grange States, with nearly 30,000 members.

San Jose Grange.

TO THE EDITOR:—Political questions have been the subject of discussion in San Jose Grange for the past several weeks. It declared against the present duty on grain bags and on coal, and in favor of the present tariff on prunes, raisins and other kinds of fruit; also in favor of the proposed income tax as provided for in the Wilson tariff bill. All of these resolutions were immediately forwarded to each of our delegates in Congress.

Having disposed of political questions for the time, the grange at the meeting of last Saturday inaugurated an educational campaign. Prof. Childs, principal of the State Normal School, introduced a resolution favoring manual training in all public schools in the State as rapidly as qualified teachers could be obtained. Prof. Childs said that the present system of education was very defective; that many branches now being taught were of no practical benefit to the mass of scholars; that they were compelled to pursue studies that could not be utilized by the average man or woman; that many studies were impracticable and useless; that every pupil should be taught some useful employment that will better fit them for gaining a livelihood. The system which is known as stuffing he condemned in no measured terms. It destroyed not alone the physical, but the mental vigor of many pupils, which a more humane system would have saved. He said some 70 or 80 applicants had been refused admission to the Normal School principally because they did not possess constitutions that would withstand the mental strain required of them.

These thoughts were concurred in and amplified by several ex-educators as well as some laymen. The subject proved so interesting, especially to parents, that it was continued for further discussion.

After the educational question is disposed of, European immigration will be taken up. San Jose Grange is not vain enough to think that laws will always be passed, either by Congress or the State Legislature, in accordance with the wishes expressed in our resolutions; but as we are a part of their constituency, of the members thereof, as good citizens we should make known to them our wishes.

There are in San Jose Grange between 80 and 100 voters, who can influence a couple of hundred outside votes, and those gentlemen who desire our suffrages would do well to keep themselves posted on the platform of principles enunciated from time to time by San Jose Grange.

Some members of the order are getting quite nervous in regard to the use of the abbreviated or San Jose ritual. It may not be perfect. It may not suit those who believe in consuming time in long ritualistic work at the expense of valuable time that would be used to real advantage to the members. Yet members of San Jose Grange are of the opinion that the little leaven sent out will leaven the whole, and in the near future every grange in the United States will be working under a greatly abridged ritual. In accordance with the regular custom of devoting the first Saturday to musical and literary exercises after the routine of the grange work had closed, the grange was turned over to the young ladies, with the worthy lecturer in the chair.

The doors were opened and a large number of outsiders who had collected in the anterooms entered the hall. An excellent programme had been arranged by Miss Ada Ross, when the following numbers were rendered: Instrumental solo, Miss Geisler; recitation, Miss Veda Parkhurst; recitation by Miss Saunders; select reading by Miss Phelps; instrumental solo by Miss Ross; vocal solo by Miss Lulu Tenny; duet by Mrs. Foot and Miss Wells.

The committee on the grange congress has not reported, but it will probably ask for space on the literary programme for four or five pieces consisting of recitations, addresses, vocal and instrumental music.

San Jose, Mar. 3, 1894. AMOS ADAMS.

Note from the State Grange Organist.

TO THE EDITOR:—At the suggestion of Worthy Master Roache I send the following list of songs, selected from the "Glad Echoes," which I hope the members of the Grange who intend attending the Grange Congress will familiarize themselves with, so that, should opening or closing songs be called for, we will be able to respond. Pages 27, 39, 55, 46, 76, 87, 92, 62. I chose the "Glad Echoes" knowing that a great many of the granges were provided with these books.

After corresponding with the musical committee of Stockton Grange, it has been decided to accept the "Grange Melodies"

as the book to be used at our next State Grange.

I hope all the granges will provide themselves with the new books, as I am sure you will be pleased with them, for they contain many new, bright, pleasing selections.

If the granges will accept one book to be used by all, how much easier it will be for the person selecting the songs than at present when three books are used.

My list will be published very soon, taken from the new books, and I will expect a strong grange choir at the next State Grange meeting. Fraternally.

MRS. FRANKIE GREER, Organist.
Sacramento, March 1, 1894.

From Tulare.

Tulare Grange held its regular semi-monthly session at Goldman's hall on Saturday afternoon.

The secretary read a communication from the secretary of the State Grange notifying this grange that at a meeting of the State Executive Committee it was provided that each subordinate grange should appoint and send to the Grange Congress at the Midwinter Fair, on the 13th and 14th of April, a brother and sister to act as a reception committee from that grange. Worthy Master Premo and Sister Fowler were appointed such committee and the secretary was directed to so report to the secretary of the State Grange.

The committee appointed at last meeting to revise the By-Laws, reported in favor of adopting the Constitution and By-Laws provided for subordinate granges by the State Grange, which was adopted, and the secretary directed to copy them into the roll book.

Bro. Chapin reported that E. S. Adams, manager of the State Fruit Exchange, would be in Kings county during next week for the purpose of organizing county fruit exchanges, co-ordinate with the State Fruit Exchange. Bros. Chapin, Woods and Tuohy were appointed a committee to arrange with fruit growers for the purpose of having Mr. Adams come to Tulare and assist in organizing a fruit exchange here.

Bro. Forrer called attention to the manner in which trees coming here are inspected, the time trees are detained in the depot for inspection, the inconvenience and loss to nurserymen, and liability of damages to the county. A general discussion was had, the general effect of which was that the State quarantine law, requiring the careful inspection of all trees coming into the county, is a good law in the interest of orchardists.

Sister Ingram, in a neat and impressive speech, presented Past Master Tuohy with a past master's badge.

Subject for discussion at next meeting: "Freight Rates and How to Reduce Them;" and in connection therewith David Lubin's proposition for all farming produce to go by mail.

Bro. E. C. Shoemaker filed with the secretary his appointment as county deputy.

Bro. Chapin reported that his address before the Grange Congress at the Midwinter Fair will be: "Agricultural Education in the Public Schools."

Some patrons believe if in the public schools less attention to trigonometry and kindred subjects were required, and more instruction given in botany, entomology, horticulture, viticulture, floriculture, agriculture, dairying and veterinary, the pupils would be very much better fitted for the battle of life. They see no good reason why in the high school maintained in agricultural towns classes should not be formed, with practical instructions on one or two days in the week, when the pupils should be taken to adjacent dairies, orchards and farms, getting objective lessons and practical instructions in those industries.

From the National Lecturer.

The object of the grange is to advance the farming interests of the country.

There are 614 granges in New York State with 35,000 members. The net gain in membership during 1893 was 1509.

The grange is in a prosperous condition in all the eastern and northern and in some of the western and southern States.

There are at present more than 1000 granges in New England with 60,000 members. There are also 300 Pomona granges with a total of 35,000 members.

April 13th and 14th will be grange days at the Midwinter Fair at San Francisco. Distinguished speakers will address the large number of patrons who will be present.

The grange is the only farmers' organization in the country which has kept itself free from political intrigues and alliances, and which has the universal respect of all classes. The grange is 27 years old and is ac-

knowledgeed the best farmers' organization which ever existed. Its decline in some places is not due to any inherent weakness but because its members in those sections departed from the teachings and principles of the order and attempted to make it a political organization. The leaders of the order desire to have the grange re-organized in all sections where for any cause it has become dormant. Write to the master of the State Grange or to the officers of the National Grange, J. H. Brigham, master, Delta, Ohio; John Trimble, secretary, Washington, D. C.; and Alpha Messer, lecturer, Rochester, Vi. ALPHA MESSER.

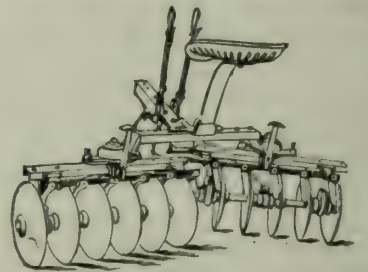
Petaluma Grange.

Mr. A. B. Lerkenby writes that Petaluma Grange held a meeting of unusual interest on Feb. 27th. The question of Woman Suffrage was discussed, Mr. Mechem supporting it in a strong argument. After this came discussions on the Initiative and Referendum, concerning which the sentiment was one of general approval. Mr. Lerkenby suggests that other granges take up these subjects, and he adds that, as for himself, his faith in the propositions is absolute.

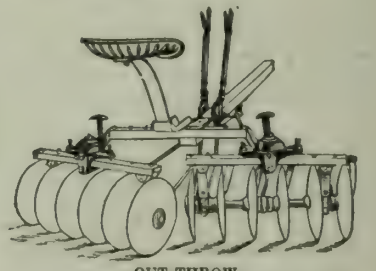
From Watsonville.

TO THE EDITOR:—On March 3d, Watsonville Grange initiated a class of six in the first and second degrees. The secret instructions were given by the Worthy Master, G. A. Webb. The third and fourth degrees will be conferred on March 17th. Bro. and Sister H. F. Blohm were appointed to act as a reception committee at the Grange Congress to be held at the Midwinter International Exposition grounds on April 13 and 14, 1894.

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AGRICULTURAL NOTES.

CALIFORNIA. Butte.

The Oroville Register says: Enough rain has fallen to insure good crops in all the grain-growing portions of Butte, and wheat and barley are looking well and promise an excellent crop. The adobe lands were seeded early in the season and grain has made an excellent start. Not deterred by the very low price of fruit last year, new orchards are being planted in the valley and low foothills. Near Chico considerable land has been cut up and is being offered for sale. The Ackerman tract, the Reynolds land and probably the Reavis ranch, will be subdivided. Fruit at Rio Bonito, Thermalito and near Oroville is being extensively planted. It is probable that at least 200 acres of olives and oranges will be planted near this town during the spring. No new apple or prune orchards are being set out in the mountains so far as we can learn. Stockmen are somewhat blue, as the price for cattle, horses and sheep is low.

The Oroville Mercury reports tree planting lively in its neighborhood. It says: It has been estimated by careful men, and those who are competent to judge, that there are within eight miles of Oroville about 3000 acres in orange trees alone. Of these, but very few comparatively are in bearing. When are added the olive and deciduous trees, it will be seen that possibly the acreage now devoted to fruit culture in the country immediately tributary to Oroville will fall not short of 10,000 acres. A very small proportion is in bearing. More come in each year, but we are now in the "waiting stage," a time when it is outlay and very little return. But happily this period is now about past. In a very short while every acre will be yielding returns, and Oroville will be the center of a great fruit trade. Hundreds of carloads will be shipped each season, and canning establishments will have to be established to handle the vast output which cannot be shipped profitably. Then Oroville will prosper as it never has before. There will be work for hundreds handling the fruit crops. Each season this acreage is being added to. At Palermo we learn of several large tracts being planted to olives and oranges. In the Wyandotte region many residents are putting out from five to twenty acres. The Oroville Olive Company is now plowing and will set out 40 acres in olives in the next few weeks. Messrs. Desmarais and Almy, who have purchased the Morrissey tract, will plant largely. At Thermalito, Colonel McLaughlin is putting out five acres in olives, Edward Gilman 20 acres of the same fruit, Judge Hunt of Oakland 15 acres in oranges, and the supervisors are having planted to acres in olives at the infirmary. These figures might be added to were all the facts available. But it is certain that there will be several hundred acres planted this season and added to the many thousands. Oroville cannot help but prosper when these trees are in bearing. And now is the time to invest.

Kern.

The Bakersfield Californian reports that at Button Willow S. W. Wible is having hogs fattened on a large scale. Just now there are 2000 of them in the pens, and each one is gaining about two pounds in weight every day. They are fed upon Egyptian corn, which is prepared for them in the following manner: Huge tanks have been constructed, each holding 80 sacks of Egyptian corn. A number of finely perforated pipes run lengthwise through these tanks, and when the charge of corn is put in steam is turned into the pipes. The tanks are charged about noon each day and the steam is kept on until the next morning. When taken out the corn looks for all the world as if it had been popped, and is said to be extremely delicious to the human palate. This steamed corn is then mixed with water to form a pasty consistency and fed freely. The troughs from which the hogs eat are kept scrupulously clean. Once a week the feed is salted a little and occasionally wood ashes are mixed with it. The feed averages from five to six pounds of steamed corn daily per hog.

San Benito.

The Watsonville Pajaronian says: In the southern part of San Benito county many of the farmers are not putting in more than enough crops to satisfy home demands. The prices of hay and grain have not allowed any return for labor, and they are going to raise but enough hay and grain for their own use. More attention will be given to stock raising. Some years ago a correspondent of one of the city papers predicted that before the close of the century a great part of the San Joaquin valley and other valleys which had been used for stock grazing in earlier days would be again the home of the cattle man. Low prices of grain, small crops, and the expensive cost of transportation are factions which will make this prophecy possible.

Santa Clara.

San Jose Tree and Vine: One of our most careful orchardists has been using all the stable manure he can get time to haul, and finds a great improvement in the soil of his orchard in regard to mellowness and easy working. A. Block, the great pear-grower of Santa Clara, uses hundreds of loads of stable manure, and, in fact, almost everything which has manurial value. Straw, weeds, brush and almost all carbonaceous materials have been burned up in California for a long series of years. We believe it time to call a halt on such practice and take measures to get more carbon into the soil. Stable manure does not contain all the elements of fertility. Phosphates should be used, and in many cases nitrates. Potash and lime are not usually deficient in California soils, but a little experiment whether or not it will pay to use them in certain cases. It has been thought that vegetable matter as a manure was not favorable to the conditions of soil which caused land to endure drought, but if well plowed in and decomposed the action is really favorable in this direction.

San Jose Mercury: Twenty-six members of the Ohio State Horticultural Society passed through San Jose on their way to Santa Cruz. They saw and admired about everything there was to be seen from a car window, and when the train left Los Gatos and began to wind around the curves in the canyon, their expressions of delight were numerous. They had been traveling in a special car, which they

switched off wherever anything offered to interest them. They left their special car at San Francisco while they took this little side trip. There were some prominent people in the party, among the number being Hon. N. H. Albaugh, ex-speaker of the Ohio House of Representatives, who is also ex-president of the American Nurserymen's Association; Hon. Bob Nevin, who nominated McKinley, and who is on the slate as the next Governor of Ohio; C. F. Ware, president of the Luxury Coffee Company; L. C. Simpson, banker; William Kramer, wine merchant; T. B. Connelly, agent of the great Texas Pacific; Fred Lierman, stock-grower; E. M. Glancey, real estate dealer; Nick Ohmer, ex-president Ohio State Horticultural Society; M. Beecher, contractor; Hon. George Warrington, attorney; Fred G. Withoft, nurseryman, Dayton, Ohio. A. J. Conover, stove manufacturer, Dayton, Ohio. Nearly every member was accompanied by his wife. All are interested extensively in the fruit-growing business in Ohio, Georgia and Kentucky. Fred G. Withoft is a director in companies representing 6778 acres of orchard in bearing. They left care when they passed from the snowstorms of the East into the sunshine of California, and they were enjoying the beauties of this land to the fullest possible extent.

Santa Cruz.

Pajaronian: A contract was made by a beet-grower of the Cooper ranch, last week, to pay the Chinese \$1.10 per ton for the field work if the yield was less than 15 tons per acre, and \$1 per ton if the yield was over 15 tons per acre. Another large contract—one of the largest that will be let this season—has been given at a slightly advanced figure over these quotations. The tendency is downward on the price paid Chinese for beet-field work, and well it may be, for the smooth Mongolian has been making high wages in the beet fields. Many of them have made over \$3 per day in fields where the yield was large. They have been paid more than they received when this valley furnished the beets for the Soquel factory. Chinese labor has advanced in price as other labor has gone down, and the Mongolian is now the highest priced labor in the market. If white labor would co-operate here, as at Chino, and take beet-field contracts, the Chinese could soon be worked out. There is a large and growing opportunity here for the field laborers.

Pajaronian: A few carloads of Pajaro apples have been sent Eastward the past week, but the season is nearly over and the packing houses are about cleared out. Among the shipments this week were a carload for Indianapolis, two carloads for Los Angeles, one for Denver, and lots for other points.

Solano.

G. W. Tillston of Elmira writes: "I have a few almond trees and the birds have taken their buds for three years in spite of me; but this time I tried poisoning them with strychnine. I take small apples and cut them in two, the round way, and take a nail and punch holes all over the face of the apples, and stick them on the limbs of the trees. In this way I killed some three thousand in a few days. That is a sure shot for them and will destroy them better than anything I know of."

Sonoma.

Petaluma Courier: On Monday eggs reached the lowest price ever known in this market—12 cents per dozen. They have been as low as this only once before—four years ago, when for one day they sold at "a cent apiece." It is by competent judges thought quite probable that prices will further decline in the near future. Such a "slump" in the egg market as we have had for several weeks past, is very unusual at this season of the year, but it must be borne in mind that this is a very unusual season "all around." With extreme dullness pervading the atmosphere of the market for every other commodity, it would be very strange if eggs and other poultry products should not suffer as well as the rest. It argues nothing against the business of the poultry raiser. Indeed, his branch of business was one of the last to feel the effects of the stringent money market. This producer also has a compensating circumstance in his favor in the price for grain. He can now get good feed for one cent per pound—so he can afford to feed hens which lay low-priced eggs. It is a fact, further, that the prospects for the future in the poultry business never seemed better than they do right now, in spite of the discouraging prices which prevail at the present. Many new chicken ranches will be started this spring, and the production of broilers and eggs for this year will be much greater than ever before. There is little danger, either, of the business being overdone for a long time to come.

Sutter.

A dispatch from Yuba city (Sunday, March 4th) says: The large raisin dryer, warehouse, store-rooms, etc., of J. B. Wilkie at this place were burned this morning at 6 o'clock. In the building were 4000 trays and 100 cords of wood, besides the fruit graders, stemmers, dippers, tracks, trucks and other appurtenances. The dryer was built last fall and had only been used one season. It was one of the largest and best equipped establishments of the kind in the State. The total loss is \$10,000; no insurance. Incendiaries are believed to have set the fire, as there had been no fire in any of the furnaces for some time. Mr. Wilkie will rebuild.

Tulare.

Major C. J. Berry, Horticultural Commissioner for Tulare county, contributes a note to the Tulare Register on inter-cultures, as follows: It does seem to a novice in horticulture that the spaces between young trees when first planted in orchard form can be utilized in the production of some kind of short crop that will pay part of the expenses of building up his orchard until such time as it will bear fruit. The writer confesses that he labored under the same impression for a number of years, but during

the last four years has made some practical experiments and the results with various crops are herein set forth for the information of your readers who may be or contemplate growing an orchard: Potatoes, one crop, do no perceptible injury to the trees. Beans are very injurious, seeming in some way to poison the trees. More deaths occurred among the trees planted with beans between the rows than any other vegetable. Watermelons stunt the trees very much; particularly is this the case with prune trees. Pumpkins do not stunt the trees and do but little harm, but they do no good either. Corn is exceedingly stunting and whatever you get for a corn crop will be offset by a shortage in your fruit crop, besides holding back your trees from a proper "up-to-date" development. Peanuts do not injure the trees materially, but they encourage the breeding of "red spider," and that insect is destructive to young trees; besides that, it costs money to keep it in subjection. Strawberries are not injurious; blackberries I have never tried. Wheat, barley or hay crops of any kind are very bad. To sum the entire matter up, there are only one or two crops, if any, that should be raised between your trees. Of course, to a poor man starting an orchard it looks wasteful to cultivate so much land that is unoccupied between his trees, but experience has shown the writer that the success lies in cultivating it "all the same."

The Hanford Sentinel speaks wisely, as follows, of the subject now uppermost in the thoughts of California fruit producers: There need be no conflict between the proposed Fruit Exchange and commission men. The latter may buy all the fruit raised if they want it, by simply paying for it. The unholly practice of producers giving their fruit over to men of any class to put upon the market, without money and without security, even, is undebatable; it is ruinous and unbusinesslike. The Exchange must and will stop it, if producers will but unite. This need not hurt the commission man who expects to do an honest business and has suitable financial backing. He can go to the Exchange and buy the goods, put up the "stuff," and go into the market and make what percentage he can off his purchase. He can handle his end of the rope as best he can. The Exchange only makes it possible for producers to hold and handle one end of the rope and not be forced to make a rope and throw both ends and all the balance of it to the other fellow. There is no use of fear among producers that their liberty will be abandoned by forming an Exchange. A solid compact of the producers will give them the only liberty they can secure or may desire, viz.: The liberty to demand and receive money for their products, or to have those products in their own control to put up as security for hiring money. When they stand firm and solid as one man, they have undisputed mastery of the situation and can dictate what is their right—a fair reward for toil and money for their goods. The honest commission man will appreciate this condition of things at the very moment it is established, and will adapt himself and his manner of doing business to the situation. But so long as producers do not unite for their own protection, the commission man or buyer of any kind will wreck prices and deal with the producer as he finds him in a way to be dealt with. While it is the just province of the producer to assert his rights and be master of the situation to his own reasonable profit and prosperity, his efforts and their results need not and will not injure or abridge any legitimate right of commission men.

Ventura.

The Venturian thus reports a jaunt through the country about Saticoy and Moutalvo: While the good people are praying for rain water, there is, as yet, no indication of damage from drouth. A large acreage has been set to fruit trees in these localities, and the advancement in horticultural interests is very marked. Work in all lines of industry pertaining to the soil is well advanced, and the people are in readiness for a downpour, and we believe they will get it before the middle of March, and an abundant harvest will follow. The agricultural acreage near Saticoy is being greatly augmented by the cultivation of the Schappa Peitria tract, comprising over a thousand acres.

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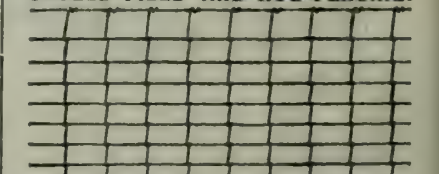
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In one of the best EARLY Fruit Sections of the State, together with a nursery of Orange, Lemon and Deciduous Trees, for sale at less than its real value.

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IT HAS BEEN DEMONSTRATED IN THE PAST FEW years by the large number of trees sold by me that nursery stock grown on the river bottom of Sutter county is far superior to any grown in the State. I am prepared to supply in large or small quantities:

Bartlett Pears, Plums and Prunes
On Myrabalan Plum Roots.

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Cherries, Peaches, Apricots, Apple, Almond
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Special Rates on Large Orders.
Send for Price List for 1893-94.

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—ROSES—

Strong two-year-old field-grown Roses on their own roots, all true to name, of the following varieties:
Adrienne Christopheles, Aurora, Beauty of Stapleford, Chestnut Hybrid, Couquette de Alps, Capt. Christy, Duchesse de Brabant, Emperor of Morocco, General de Tartar, Gold of Ophir, General Jacqueminot, Infant du France, Jean Ducher, La France, La Marque, Lady Emilie Peel, Mad. Camille, Mad. Bravy, Mad. Beraud, Mad. Clement Massier, Mad. Lambard, Mad. Jos. Schwarz, Marie Ducher, Marquis de Vivien, Marquis de Fenelon, Marquis Ferry, Marquis Neil, Melville, Moos Pink, Princess Stephanie, Revere de Ore, Reine Marie Henriette, Rainbow, Saffron, Sunset, San Germaine St. Pierre, Solferino, Striped, Triomphe de Bordeaux, Ulrich Bruner, W. A. Richardson, Yellow Banksia and others.
Purchaser may select any varieties. Five plants for one dollar. 50 plants in 20 varieties, my selection, for \$8.50. 100 plants in 20 varieties, my selection, for \$15.
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FRENCH PRUNES on Seedling Peach, and
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ALL WARRANTED CLEAN, TRUE TO NAME AND
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Surplus Stock of

ALMONDS, 8 Varieties.
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At very LOW PRICES. Also an assortment of
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WRITE FOR PRICES ON STOCK YOU NEED.

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Are just what every
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form the foundation up-
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LEMON TREES FOR SALE.

I have some 15,000 Lisbon and Eureka Lemon trees,
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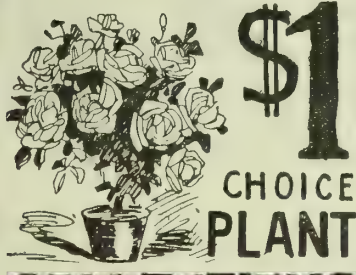
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20 ROSES
FOR \$1.00.
Our Sample Collection of
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This offer is made to
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DISTINCT VARIETIES. ALL PLANTS LABELED. TRUE TO NAME.
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Be Sure and Give Us a Trial.

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FRUIT TREES. FRUIT TREES.
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Do not fail to correspond before making purchases. Satisfaction guaranteed.

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Better than
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Is Different from Others.

It is intended to aid the planter in selecting the Seeds
best adapted for his needs and conditions and in getting
from them the best possible results. It is not, therefore, highly
colored in either sense; and we have taken great care that
nothing worthless be put in, or nothing worthy be left out. We
invite a trial of our Seeds. We know them because we grow them.
Every planter of Vegetables or Flowers ought to know about our
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A NO. 1 TREES,

Two-Year-Old, 4 to 6 feet High.

Extra inducements offered to intending buyers both
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ALL KINDS OF

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Send and get book on Olive Culture.

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I do not buy trees to sell; what is offered is grown in
my own grounds and free from scale bugs. No scale
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employed. Order direct from the nursery and procure
your trees true to label. Order early, as early planting
is the most successful with deciduous trees. Prices fur-
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50,000 FRENCH PRUNE TREES
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No. 1—8 to 8 ft.,.....\$25 00 per 1000
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First class stock. Free from insect pest. Samples
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Light Without Heat.

To the speculative mind none of the possible future applications of electricity is more attractive and none so full of immediate interest, as the possibility that seems almost within our grasp of obtaining light without heat, or making the light waves without the heat waves that have thus far always been at the same time the companion and the burden of all artificial light, says the *Electrical World*. The time is ripe, and the exact science of the day seems all but ready and willing to give the analysis of two great problems, the answer to either of which would stand the crowning achievement of a century of progress in the application of nature's secrets to the requirements of daily life. One of these—the navigation of the air—seems to be a mechanical problem only; while the other—the production of light without heat—we may confidently say is only a question of properly handling the electric current. Nature presents us with beautiful examples of both solutions, but guards jealously the key to her method of operation, by which well-known forces are made to do the apparently impossible thing, and it is equally beyond our science to-day to explain how the bird soars aloft on motionless wings and how the glow worm emits a gleam of light without a ray of heat. But they do it, and the many imitators of the bird will soon be equaled in number by those who are chasing the fire-fly's secret.

What nature does with nature's forces man should and doubtless will be able to do with a full knowledge of those forces and a better comprehension of the methods by which nature applies them. Who shall say which is the more difficult accomplishment, the production of an artificial ruby or the production of an artificial light without heat? There is no certainty, indeed, that the latter will come from the hands of the chemist first. We are not only too prone to hastily write that down as the impossible which is simply not yet done and our last achievement as the most difficult of all accomplishments. Let us not, however, forget that the chemist has striven for more than a century to make the artificial stone with commendable success and the mechanic has striven a century to navigate the air, while the electrical engineer has wrested but a comparatively short time with the problem of light without heat and has already shown that the solution, far from being impossible on the lines of his attack, is, indeed, a reasonable expectation of another decade of electrical advance.

News in Brief.

—Horses which formerly sold for \$50 and \$60 in Harney valley (Or.) are now sold for \$25. Recently a band were sold for \$10 a head to a man without money, to be paid for in two years.

—An Oregon speculator recently purchased 6400 acres of valuable timber land in Nehalem valley. The price paid for it is stated at \$72,000. This is the largest land sale for some time.

—Work on the Esquimalt fortifications near Victoria, B. C., will begin at an early date. Arrangements are now being made for a number of teams for hauling dirt and rock on the excavations.

—The Canadian Pacific has let a contract for building 250 miles of railroad between Nelson, B. C., and a point near Calgary. The proposed route is the much-talked-of Crows' Nest pass and Tobacco plains.

—Artesian water has been struck in Cochise county, A. T., by a man named McRae. The flow is 21,000 gallons in 24 hours. In addition to the value of the water, McRae will get \$2000 reward offered by the Supervisors for a running well not more than 500 feet deep.

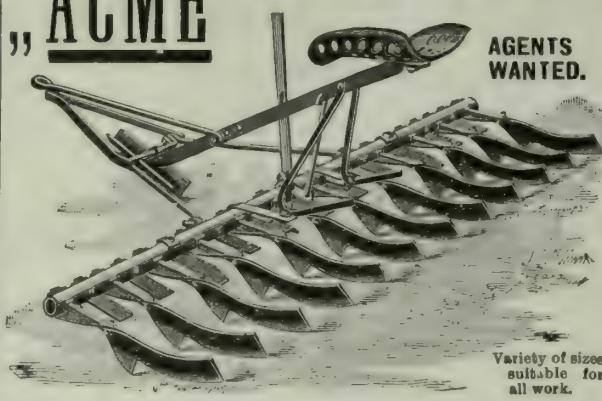
—At the Sisson hatchery no less than 8,500,000 young fish have been hatched this season. About 6,500,000 still remain on hand, and will be kept until they are a year old. Trout hatching will soon commence, and it is intended to handle this season about 2,500,000 eggs.

Beware of Ointments for Catarrh That Contain Mercury.

As mercury will surely destroy the sense of smell and completely derange the whole system when entering it through the mucous surfaces. Such articles should never be used except on prescriptions from reputable physicians, as the damage they will do is tenfold to the good you can possibly derive from them. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., contains no mercury, and is taken internally, acting directly upon the blood and mucous surfaces of the system. In buying Hall's Catarrh Cure be sure you get the genuine. It is taken internally, and made in Toledo, Ohio, by F. J. Cheney & Co. Testimonials free.

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"ACME" PULVERIZING HARROW, CLOD CRUSHER AND LEVELER



AGENTS WANTED.

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Is adapted to all soils and all work for which a Harrow is needed.

Flat crushing spurs pulverize lumps, level and smooth the ground, while at the same time curved coulters cultivate, cut, lift and turn the entire surface of the soil. The backward slant of the coulters prevents tearing up rubbish and reduces the draft.

Made entirely of cast steel and wrought iron and therefore practically indestructible.

CHEAPEST RIDING HARROW ON EARTH—sells for about the same as an ordinary drag.

I deliver free on board at SAN FRANCISCO and PORTLAND.

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ONLY 25 YEARS OLD AND A GIANT!

THE H. H. H. LINIMENT

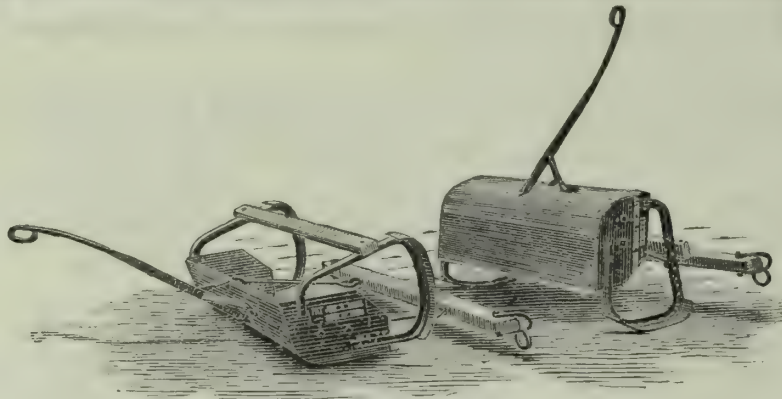
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- 1st—Because it is the best for Man or Beast.
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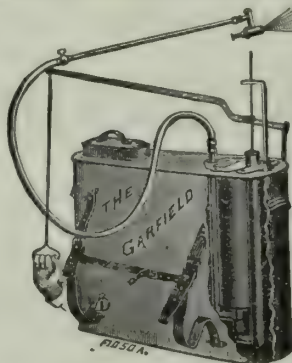
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PATENTED AUG. 1, 1893.

Cheapest, Best and Only One to Protect Trees and Vines from Frost, Sunburn, Rabbits, Squirrels, Borers and other Tree Pests. For Testimonials from Parties who are using them send for Descriptive Circulars.

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SPRAYING PUMPS.

Ours always the best—We lead others follow—Our Double Empire Barrel Pump has brass cylinder, plunger and rod, brass valve seat, and brass spout. Our

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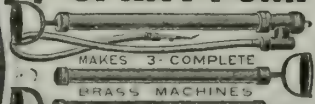
is made of heavy sheet copper, concaved to fit the back, with metal valves, and furnished with the latest improved Vermorel Nozzle. The very best Knapsack Sprayer on the market. Our Little Gem pail pump is all brass with metal valves, heavy hose and the improved Vermorel Nozzle. Special prices to offset high transportation rates. Catalogue free.

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\$17 SPRAY PUMP



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BAKER & HAMILTON, San Francisco,

Guano Fertilizer!

PLAIN AND NITROGENOUS
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GUANO FLOUR.

Complete and Special Fertilizers

FOR ALL KINDS OF

Fruit, Grain, Sugar Beets, Vegetables, Etc.

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Loans on wheat and country produce a specialty.

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Pumps fitted up for all depths of wells, ready to put in.

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Established 1870. Trial Subscriptions, 50c for 3 mos. or \$2.40 a year (till further notice). DEWEY PUBLISHING CO., 320 Market Street, San Francisco.

S. H. MARKET REPORT

The Markets.

SAN FRANCISCO, March 7, 1894.

Wheat.

The price of spot Wheat has been a puzzling question for the past two days. Speculation has carried quotations away out of all reason, considering the general conditions of the situation. On Monday, May Wheat scored an advance of 8c per cbl, in the Call Board, which naturally had its effect on the sample market by giving it a more or less unsettled and feverish character. This morning there was a drop of 4c per cbl, but it may be reversed before night. For shipping purposes standard Wheat is quotable at 92½¢ per cbl, while for Call Board uses probably \$1 would be paid. Sales were made to-day of 600 tons, March delivery, season's storage paid, at \$1.04½¢ per cbl.

Barley.

The market is very dull, and the immediate prospects are not favorable for any marked improvement in matters. Feed descriptions are in limited demand, even the wants of millers being small. There is still some shipping movement in brewing qualities, and this trade tends to keep the market in position. We quote as follows: Feed, 70¢ per 1½¢ cbl for fair to good quality and 72½¢ for choice bright; brewing, 80¢ per 87½¢ cbl.

Dried Fruits.

Peaches are in demand at higher figures, stocks being light. The market generally shows healthier feeling. We quote as follows: Apples, 5½¢ @ 6¢ per lb for quartered, 5½¢ @ 6¢ for sliced, and 8¢ @ 9¢ for evaporated; Pears, 4¢ @ 8¢ per lb for bleached halves, and 3¢ @ 5¢ for quarters; bleached Peaches, 7¢ @ 9¢; sun-dried peaches, 5¢ @ 6¢; Apricots, Moorpark, 11½¢ @ 12½¢; do Royals, 10¢ @ 12¢ for bleached and 6¢ @ 7¢ for sun-dried; Prunes, 4½¢ @ 5¢ per lb for the four sizes, 4½¢ @ 4¢ for the five sizes, and 2½¢ @ 4¢ for ungraded; Plums, 4¢ @ 4½¢ for pitted and 1½¢ to 2¢ for unpitted; Figs, 3¢ @ 4¢ for pressed and 1½¢ to 2¢ for unpressed; White Nectarines, 7¢ @ 8¢; Red Nectarines, 6¢ @ 7¢ per lb. RAISINS—Offerings continue liberal. We quote: London Layers, 75¢ to \$1.15; loose Muscates, in boxes, 50¢ @ 75¢; clusters, \$1.50 to \$1.75; loose Muscates, in sacks, 2½¢ to 2½¢ per pound for 3 crown, and 2¢ for 2 crown; Dried Grapes, 1½¢ to 1½¢ per pound.

General Produce Market.

OATS—Trade is not of large proportions, while offerings are quite liberal and holders are anxious to do business. With a view of drawing out more custom, prices were lowered yesterday, but, so far, there has been no perceptible increase in the demand. We quote as follows: Milling, \$1.05 @ 1.15; Surprise, \$1.17½¢ @ 1.25; fancy feed, \$1.10 @ 1.15; good to choice, \$1.10 @ 1.15; poor to fair, 80¢ @ 90¢; Black, nominal; Red, nominal; Gray, 97½¢ @ \$1.05 per cbl.

CORN—Asking prices for White Corn have been advanced, owing to some inquiry on shipping account. The improvement is not expected to be lasting, as dealers look for prices to recede as soon as the prevailing demand is satisfied. Quotable at 90¢ @ 92½¢ per cbl for large Yellow, 90¢ @ 92½¢ for small Yellow, and \$1.10 for White.

CRACKED CORN—Quotable at \$20.50 @ 21.50 per ton.

CORNMEAL—Millers quote feed at \$20 to \$21 per ton; fine kinds for the table, in large and small packages, 2½¢ @ 3½¢ per pound.

OILCAKE MEAL—Quotable at \$37.50 per ton from the mill.

SEEDS—We quote: Mustard, brown, nominal; Yellow, —; Trieste, —; Canary, imported, \$4 @ 4.25; do, California, —; Hemp, 3½¢ per lb; Rape, 1½¢ @ 2½¢; Timothy, 6½¢ per lb; Alfalfa, 7¢ per lb for California and 8¢ @ 8½¢ for Utah; Flax, \$2.25 @ 2.50 per cbl.

CHOPPED FEED—Quotable at \$17.50 @ 18.50 per ton.

MIDDLINGS—Quotable at \$17 @ 20 per ton.

MILLSTUFFS—We quote: Rye Flour, 3½¢; Rye Meal, 3¢; Graham Flour, 3¢; Oatmeal, 4½¢; Oat Groats, 5¢; Cracked Wheat, 3½¢; Buckwheat Flour, 5¢ @ 5½¢; Pearl Barley, 4¢ @ 4½¢ per lb; Normal Nutrient, \$3 per case of 1 dozen cans; Breakfast Delight, \$3.25 per case of 2 dozen packages.

BRAN—Quotable at \$16 @ 17 per ton.

HAY—The tone of the market is of easy character, with light volume of trade. Receipts are ample for all requirements. Wire-bound hay sells at \$1 per ton less than rope-bound hay. Following are wholesale city prices for rope-bound hay: Wheat, 10¢ @ 13½¢; Wheat and Oat, 9¢ @ 12½¢; Wild Oat, 9¢ @ 11½¢; Alfalfa, 8¢ @ 10¢; Barley, 9¢ @ 10½¢; Compressed, 8¢ @ 11½¢; Stock, 7¢ @ 8¢ per ton.

STRAW—Quotable at 55¢ @ 65¢ per bale.

HOPS—Quotable at 15¢ @ 17½¢ per lb.

RYE—Quotable at 92½¢ @ 96½¢ per cbl.

BUCKWHEAT—Quotable at \$1.15 @ 1.20 per cbl.

GROUND BARLEY—Quotable at \$16.50 @ 17.50 per ton.

POTATOES—Arrivals are very large, while there is not much demand outside of local sources and prices therefore have easy tendency. We quote: Sweets, 40¢ @ 75¢ per cbl; Early Rose, 45¢ @ 55¢; River Burbanks, 30¢ @ 50¢; River Red, 30¢ @ 35¢; Salinas Burbanks, 75¢ @ 90¢; Oregon Burbanks, 75¢ @ 85¢; Oregon Garnet Chiles, 55¢ @ 65¢ per cbl.

ONIONS—There is a good tone to the market, a choice article being in request at full figures. Quotable at \$1.50 @ 2.40 per cbl.

DRIED PEAS—We quote: Green, \$1.40 @ 1.50; Blackeye, \$1.60 @ 1.70; Niles, \$1.50 @ 1.75 per cbl.

BEANS—We quote: Bayos, \$1.90 @ 2.10; Butter, \$1.75 @ 1.90 for small and \$1.95 @ 2.10 for large; Pink, \$1.50 @ 1.62½¢; Red, \$2 @ 2.25; Lima, \$2 @ 2.10; Pea, \$2 @ 2.25; Small White, \$2 @ 2.15; Large White, \$2 @ 2.12½¢ per cbl.

VEGETABLES—The market is very lightly furnished, and offerings will continue small until the weather is more settled and warmer. We quote as follows: Asparagus, 12¢ @ 17½¢ per lb for the ordinary run and 20 to 25 cents for fancy; Mushrooms, 12¢ @ 15¢ per lb, for common and

20¢ @ 25¢ per lb, for good to choice; Rhubarb, 8¢ @ 10¢ per lb; Green Peas, 5¢ @ 7¢; String Beans, —¢ @ —¢ per lb; Marrowfat Squash, \$2.25 @ 2.50 per ton; Green Peppers, —¢ @ —¢ per lb; Tomatoes, \$1.50 @ \$1.75 per box; Turnips, 75¢ per cbl; Beets, 75¢ per sack; Parsnips, \$1.25 per cbl; Carrots, 35¢ @ 40¢; Cabbage, 50¢ @ 55¢; Garlic, 1½¢ @ 2½¢ per lb; Cauliflower, 60¢ @ 70¢ per dozen; Dry Peppers, 10¢ per lb; Dry Okra, 15¢ per lb.

FRESH FRUIT—Good sound stock is in fair demand at steady prices. We quote: Apples, \$1 @ 1.50 per box for good to choice, and 50¢ @ 85¢ for common to fair; Choice Mountain Apples, \$1.50 @ 2 per box.

CITRUS FRUIT—There is no very general demand for anything in this line, and movement is therefore slow. A few days of sunshine and warmth would likely stimulate trade. We quote: Fair to choice Navel Oranges, \$1 @ 2 per box; Seedlings, 60¢ @ \$1.25; Mandarin Oranges, 50¢ @ 75¢ per box; Mexican Limes, \$4 per box; California Limes, \$1 @ 1.50 per small box; \$2.50 @ 3.25 per large box; Lemons, Sicily, \$4 @ 5; California Lemons, \$1 @ 1.25 for common; \$1.50 @ 2.50 for good to choice; Bananas, \$1.50 @ 2.50 per bunch; Hawaiian Pineapples, \$2.50 @ 3; Mexican Pineapples, \$3 @ 4 per dozen.

NUTS—We quote: Chestnuts, 6¢ @ 8¢ per lb; Walnuts, 6¢ @ 7½¢ for hard shell, 8¢ @ 9¢ for soft shell and 8¢ @ 9¢ for paper shell; Chile Walnuts, —¢ @ —¢; California Almonds, 10¢ @ 11¢ for soft shell, 6¢ @ 7¢ for hard shell and 11½¢ @ 12½¢ for paper shell; Peanuts, 3¢ @ 4¢; Hickory Nuts, 5¢ @ 6¢; Filberts, 10¢ @ 10½¢; Pecans, 5¢ @ 8¢ for rough and 8¢ @ 10¢ for polished; Brazil Nuts, 10¢ @ 11¢; Cocoanuts, \$5 @ \$5.50 per 100.

HONEY—A disposition to realize causes easier tone in prices. We quote: Comb, 10¢ @ 11¢ per lb for bright and 8¢ @ 9¢ for dark to light amber; water white extracted, 5¢ @ 5½¢; amber extracted, 4½¢ to 5¢; dark, 4½¢ to 4½¢ per lb.

BEESWAX—Quotable at 23¢ @ 25¢ per lb.

BUTTER—Selling figures have again been lowered. Supplies are in excess of the demand, and dealers have reduced asking prices with the view of developing extra custom. The situation just now is largely in favor of buyers. We quote: Fancy Creamery, 22¢ @ 23¢; fancy dairy, 20¢ @ 21¢; good to choice, 18¢ @ 19¢; common grades, 16¢ @ 17½¢ per lb; store lots, 11¢ @ 15¢; pickled roll, 14¢ @ 18¢; firkin, 14¢ @ 16¢.

CHEESE—Supplies are on the increase, and the market shows easier feeling without any positive change in prices. We quote: Choice to fancy, 12¢ @ 13¢; fair to good, 9¢ @ 11¢; Eastern, ordinary to fine, 11¢ @ 14¢ per lb.

EGGS—Stocks remain large, with no very active demand. We quote: California ranch, 14¢ @ 16¢; store lots, 12¢ @ 13¢ per dozen.

POULTRY—Turkeys are higher, as stocks are well cleaned up. Some dealers look for this description to do even better as the season wears along. Broilers are steady. Some small, scrubby Hens are coming forward that are hard to sell at the lower quotation. Geese are firm, choice product being wanted. We quote: Live Turkeys—Gobblers, 13¢ @ 14¢; Hens, 14¢ @ 15¢; dressed Turkeys, 15¢ @ 20¢ per lb; Roosters, \$3.50 @ 4 for old and \$5.50 @ 6.50 for young; Broilers, \$4 @ 6; Hens, \$4 @ 4.50; Ducks, \$4.50 @ 6; Geese, \$1.50 @ 2 per pair; Pigeons, \$2.25 @ 2.50 per doz for old and \$2.50 @ 3 for young.

GAME—Poor demand. We quote: Gray Geese, \$2 @ 2.50; White Geese, 75¢ @ \$1; Brant, \$1 @ 1.25; Honkers, \$3 @ 4; Hare, 75¢ @ \$1; Rabbits, \$1 @ 1.25 per doz.

PROVISIONS—Demand not urgent. We quote: Eastern Sugar-cured Hams, 12¢; California do, 10¢ @ 11¢; Bacon, Eastern, extra light, 12¢; medium, 9½¢; do, light, 10¢; do, light, boneless, 11½¢; light, medium, boneless, 10½¢; extra light, sugar-cured, 13½¢; Pork, prime mess, \$14 @ 15; do, mess, \$17 @ 18; do, clear, \$19.50 @ 20; do, family, \$22 @ 24; Pigs' Feet, \$11.50 per bbl; Beef, mess, bbls, \$7.50 @ 8; do extra mess, bbls, \$8.50 @ 9; do, family, \$9.50 @ 10; extra do, \$11 @ 11.50 per bbl; do, smoked, 10¢; Eastern lard, tierces, 7½¢ @ 7½¢; do prime steam, 9½¢; Eastern pure, 10-lb pails, 10¢; 5-lb pails, 10½¢; 3-lb pails, 10½¢; California, 10-lb tins, 9¢; do, 5-lb, 9½¢; do, kegs, 10¢; do, 20-lb buckets, 9½¢; compound, 7¢ for tierces.

WOOL—Market very quiet. Quotations unchanged. A further lowering of asking rates might bring about some custom, but holders are mostly disposed to await future developments. We quote spring:

California, year's fleece, 7¢ @ 8¢; do 6 to 8 months, 7¢ @ 9¢; do Footbill, 10¢ @ 11¢; do Northern, 12¢ @ 13¢; do extra Humboldt and Mendocino, 11¢ @ 13¢; Nevada, choice and light, 12¢ @ 14¢; do heavy, 8¢ @ 10¢; Oregon, Eastern, choice, 10¢ @ 11¢; do Eastern, poor, 7¢ @ 9¢; do Valley, 12¢ @ 14¢. We quote fall: Free Mountain, 6¢ @ 8¢; Northern defective, 5¢ @ 7¢; Southern and San Joaquin, 3¢ @ 5¢.

HIDES AND SKINS—Quotable as follows:

	Sound.	Culls.
Heavy Steers, 57 lbs up, 7¢ @ 8¢	4¢ @ 5¢	4¢ @ 5¢
Medium Steers, 48 to 56 lbs.4	3¢ @ 4¢	3¢ @ 4¢
Light, 42 to 47 lbs.3	2½¢ @ 3¢	2½¢ @ 3¢
Cows, over 50 lbs.3	2½¢ @ 3¢	2½¢ @ 3¢
Light Cows, 30 to 50 lbs.3	2½¢ @ 3¢	2½¢ @ 3¢
Stags.3	2½¢ @ 3¢	2½¢ @ 3¢
Kips, 17 to 30 lbs.4	3¢ @ 4¢	3¢ @ 4¢
Veal Skins, 10 to 17 lbs.5	4¢ @ 5¢	4¢ @ 5¢
Calf Skins, 5 to 10 lbs.7	6¢ @ 7¢	6¢ @ 7¢

Dry Hides, usual selection, 7¢; Dry Kips, 7¢; Calf Skins, do, 7¢; Cull Hides, Kip and Calf, 4¢; Pelts, Shearling, 10¢ @ 20¢ each; do, short, 25¢ @ 35¢ each; do, medium, 40¢ @ 50¢ each; do, long wool, 50¢ @ 75¢ each; Deer Skins, summer, 25¢; do, good medium, 15¢ @ 20¢; do, winter, 5¢ per lb; Goat Skins, 25¢ @ 40¢ apiece for prime to perfect, 10¢ @ 20¢ for damaged, and 5¢ @ 10¢ each for Kids.

TALLOW—We quote: Refined, 5½¢; rendered, 4½¢ @ 4½¢; country Tallow, 4¢ @ 4½¢; Grease, 3¢ @ 4¢ per lb.

San Francisco Meat Market.

Beef is in good supply. Mutton is in moderate receipt and steady. Spring Lamb comes in slowly. Following are the rates for whole carcasses from slaughterers to dealers:

BEEF—First quality, 5½¢ @ 6¢; second quality, 4½¢ @ 5¢; third quality, 3½¢ @ 4½¢ per lb.

CALVES—Quotable at 4¢ @ 5¢ for large, and 6¢ @ 7¢ per lb for small.

MUTTON—Quotable at 7¢ @ 8¢ per lb.

LAMB—Yearlings, 8¢ per lb; Spring, 12½¢ per lb.

PORK—Live Hogs, on foot, grain fed, heavy and medium, 5¢; small Hogs, 5½¢ @ 5½¢; stock Hogs, 4½¢ @ 4½¢; dressed Hogs, 7¢ @ 7½¢ per lb.

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To Measure a Room for Wall Paper.

To determine the number of rolls of paper to cover the walls of a room, measure the circumference, from which deduct the widths of doors and windows and divide the remainder by 3.

Example.—Let us suppose a room 12x16 feet, which has two doors and two windows, which average 4 feet wide:

12 x 12 x 16 x 16 equal 56, circumference.
4 x 4 equal 16, doors and windows,

56
16

3)40

13 1/4, or say 14 rolls.

This rule is calculated for a room of not less than 10 or more than 12 feet in height. For a room under 10 feet high, having a frieze, say of six inches, we will proceed as before with the measurement of the room, deducting the widths of the doors and windows. But in this case multiply the remainder by two and divide by 15; for this reason, that we can cut five lengths out of a double roll, which, placed side by side on the wall, cover a space 7 feet 6 inches from the ceiling, and instead of multiplying by 7 feet 6 inches we multiply both by 2.

Example.—Take a room 14x14, with two doors and windows:

Circumference of room..... 56
Less for doors and windows..... 12

44

2

15)88

5 13-15

Say 6 double rolls, or 12 pieces. Of course if a dado is required its width will determine how much paper will have to be deducted. — The Carpet and Upholstery Trade Review.

An Electric City.

Great Falls, Mont., appears fairly entitled to distinction of being called the Electric City. At Black Eagle Falls, three miles above the town, an immense dam has been thrown across the Missouri. Not only are the street cars propelled and lighted by electricity from the power houses, but they are heated as well by electric radiators placed in each car. Elevators, printing presses, cranes and all kinds of machinery are operated by the ubiquitous force. There are automatic excavators, electric pumps and electric rock-crushers. A not uncommon sight on the street is a mortar-mixer attached to an electric wire leading down from a pole. The restaurants cook by electricity, the butcher employs it to chop his sausages, the grocer to grind his coffee and the tailor to heat his goose. The subtle fluid is a welcome blessing in every home; the housewives run their sewing machines and heat their flatirons by electricity; they have electric broilers and teakettles, and they bake their cakes in electric wooden ovens that can be set away on a shelves like paste-board boxes.

The Silk-Spinning Spider.

The silk spider of Madagascar forms the subject of an interesting article in *Die Natur*, by Dr. Karl Muller. Its native name is Halabe, meaning great spider. This Halabe, or *Nephila Madagascariensis*, spins threads of a golden color and strong enough, according to Maïndron, to hang a cork helmet by. The female spider may attain a length of 15 cm., while the male does not exceed 3 cm. A single female individual, at the breeding season, gave M. Camboue, a French missionary, some 3000 m. of a fine silken thread during a period of about 27 days. The thread was examined with a view to creating a new industry. Specimens tested at a temperature of 17° C. showed an elongation of 12.48 per cent under a weight of 3.27 gr. Small textures woven of these threads are actually used by the natives for fastening flowers on sunshades and for other purposes.

To Beat the Ferris Wheel.

"The Gigantic Wheel," to be erected at Earl's Court, will, says *Invention*, be 50 feet taller than the great Ferris Wheel at the World's Fair, Chicago, its summit being 300 feet above the ground. It will be fitted with 40 cars, each holding 40 persons, and will revolve at a very slow speed, about equal to the second hand of a watch. The round trip will occupy 20 minutes, with five stoppages, there being landing stage accommodation for filling and emptying eight cars at the same time. The cars will be luxurious. There will be novel opportunities for observation and for enjoying tea parties in the air.

A DETROIT MIRACLE.

A GREAT TRIUMPH FOR MEDICAL SCIENCE.

Particulars of One of the Most Remarkable Cures on Record Described by the Detroit News—A Story Worth a Careful Perusal.

From the Detroit News.

The following paragraph, which appeared in the *Evening News* a short time ago, furnished the basis of the following article. It is of sufficient importance to the *News*' readers to report it to them fully. It was so important then that it attracted considerable attention at the time. The following is the paragraph in question:

"C. B. Northrop, for 28 years one of the best known merchants on Woodward avenue, who was supposed to be dying last spring of locomotor ataxia, or creeping paralysis, has secured a new lease of life and returned to work at his store. This disease has always been supposed to be incurable, but Mr. Northrop's condition is greatly improved, and it looks now as if the grave would be cheated of its prey."

Since that time Mr. Northrop has steadily improved, not only in looks, but in condition, until he has at last regained his old-time strength.

It had been hinted to the writer of this article, who was acquainted with Mr. Northrop, that the miraculous change had been wrought by a very simple remedy called Dr. Williams' Pink Pills for Pale People. When asked about it, Mr. Northrop fully verified the statement. He was enthusiastic at the result in his own case of Dr. Williams' Pink Pills. It was a remedy that he had heard of after he had tried everything he could to give him relief. He had been in the care of the best physicians, who did all they could to alleviate this terrible malady, but without any avail. He had given up hope, when a friend in Lockport, N. Y., wrote him calling his attention to the case of a person there who had been cured of a disease similar to his own, and to the case of John Marshall of Hamilton, Ont., also cured by Dr. Williams' Pink Pills. Mr. Marshall was so well known that an account of his cure and recovery was published in detail by all the city papers. One could scarcely conceive a case more hopeless than that of Mr. Northrop. His injury came about in this way: One day, nearly four years ago, he stumbled and fell the complete length of a steep flight of stairs which were at the rear of his store. His head and spine were severely injured. He was picked up and taken to his home. Creeping paralysis very soon developed itself, and in spite of the most strenuous efforts of friends and physicians the terrible affliction fastened itself upon him. For nearly two years he was perfectly helpless. He could do nothing to support his strength in the least effort. He had to be wheeled about in an invalid's chair. He was weak, pale and fast sinking when this timely information came that veritably snatched his life from the jaws of death. Those, who at that time saw a feeble old man wheeled into his store on an invalid's chair, would not recognize the man now, so great is the change that Dr. Williams' Pink Pills have wrought. When Mr. Northrop learned of the remedy that cured Mr. Marshall in Hamilton, and the person in Lockport, he procured a supply of Dr. Williams' Pink Pills through Messrs. Bassett & L'Hommiedieu, 95 Woodward avenue, and from the outset found an improvement. He faithfully adhered to the use of the remedy until now he is completely restored. Mr. Northrop declares that there can be no doubt as to Pink Pills being the cause of his restoration to health, as all other remedies and medical treatment left him in a condition rapidly going from bad to worse, until at last it was declared there was no hope for him and he was pronounced incurable. He was in this terrible condition when he began to use Dr. Williams' Pink Pills, and they have restored him to health.

Mr. Northrop was asked what was claimed for this wonderful remedy, and replied that he understood the proprietors claim it to be a blood builder and nerve restorer, supplying in a condensed form all the elements necessary to enrich the blood, restore shattered nerves and drive out disease. It is claimed by the proprietors that Pink Pills will cure paralysis, rheumatism, sciatica, palpitation of the heart, headache, and all diseases peculiar to females, loss of appetite, dizziness, sleeplessness, loss of memory, and all diseases arising from overwork, mental worry, loss of vital force, etc.

"I want to say," said Mr. Northrop, "that I don't have much faith in patent medicines, but I cannot say too much in praise of Dr. Williams' Pink Pills." The proprietors, however, claim that they are not a patent medicine in the sense in which that term is used, but a highly scientific preparation, the result of years of careful study and experiment on the part of the proprietors, and the pills were successfully used in private practice for years before being placed for general sale. Mr. Northrop declares, and he is a living example, that there is nothing to equal these pills as a cure for nerve diseases. On inquiry the writer found that these pills were manufactured by Dr. Williams' Medi-

cine Co., Schenectady, N. Y., and Brockville, Ont., and the pills are sold in boxes (never in bulk by the hundred) at 50 cents a box, and may be had of all druggists or direct by mail from Dr. Williams' Medicine Co., from either of the above addresses. The price at which these pills are sold makes a course of treatment with them inexpensive as compared with other remedies or medical treatment. This case is one of the most remarkable on record, and as it is one right here in Detroit and not a thousand miles away, it can be easily verified. Mr. Northrop is very well known to the people in Detroit, and he says he is only too glad to testify of the marvelous good wrought in his case.

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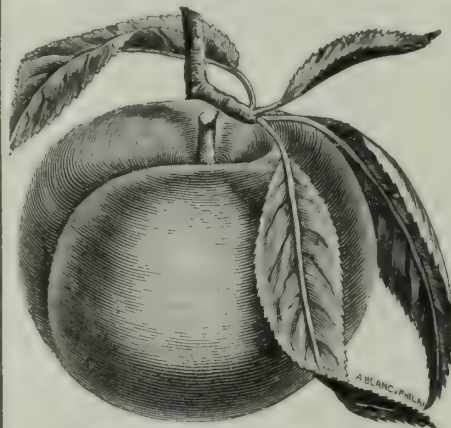
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Electric Fishes.

The fishes known to possess electrical organs number about fifty species, but only in five or six have these organs been carefully studied, says *Electricity*. The fishes are not confined to one class or group, and inhabit both fresh and salt water. The best known are various species of torpedo (belonging to the skate family), which exists in the Mediterranean and Adriatic seas; the gymnotus, an eel of the lagoons in the Orinoco region of South America; the malapterurus, or thunderer fish of the Arabs, which is found in the Nile and other African rivers; and various species of skates of the seas of northern Europe. The electrical organs belong to two distinct types, that of the torpedo, gymnotus and skate being closely related in structure to the mussel, while that of the thunderer fish has a greater resemblance to a secreting gland. Both types are built up of a vast number—lately estimated by Ewart at as many as 250,000 in a torpedo—of minute elements, each supplied with a nerve fibre.

The Farmer and the Squirrel.

The ground squirrel is a cunning little beast, with an appetite only equalled by his remarkable propensity to increase his kind. With sagacity and industrious habits, acquired by heredity and necessity, he has managed to build up a reputation that has made him a terror and an outlaw. While the farmer everywhere knows him, and is more or less familiar with his thievish and destructive characteristics, it is probable that comparatively few fully realize the immense amount of loss that he is capable of causing a district or State in the aggregate, say for one year, much less for a series of years.

It is with the view of conveying some approximate notion of the squirrel's great capacity as a destructive agent, while gratifying his inordinate appetite, that the following facts and figures are submitted:

Some practical and observant farmers have said that every squirrel killed was as good as one sack of wheat or its equivalent saved. Whether this be so or not, it is safe and extremely conservative to say that one squirrel or gopher will eat his own weight each month, and probably destroy as much more. Allowing his weight to average one and three-quarters pounds, he will eat and destroy about 40 pounds a year. Now, to give the agricultural districts of California the benefit of 100,000 of these pests actively at work through the greater part of the year, the figures for the aggregate consumption will be found to show up 4,000,000 pounds, a very respectable amount. While 2000 tons of food products lost each year is no small item for producers to consider, this estimate is so modest that those who have given the subject attention will be quite likely to multiply it several times.

These disagreeable facts constantly staring the producers in the face, it is not at all strange that many efforts should have been made to exterminate the evil as far as possible. While most attempts in this direction have proved failures, it is only fair to say that one plan has proved a notable success. This preparation is known far and wide as "Wakelee's Squirrel and Gopher Exterminator." It was the result of scientific and patient study and a full appreciation of the importance of the subject with which it had to deal, and as it has now been on the market for over 15 years, events have proven its complete success and fully justify the immense and yearly increasing sales.

It is estimated that in the 15 years past, more than 10,000 tons of squirrels and gophers have been destroyed by its use alone. Let the curious in figures go into this fact, and by the light of the above hints find out the amount of food it would have required to have made those tons of vermin contented. This preparation is put up in large and small cans, will keep any length of time and is not at all expensive. Directions accompany each can.

Worthless imitations of this valuable preparation are so numerous that the farmer should be extremely careful to obtain the genuine Wakelee Exterminator.

At the Revival Meeting.—Stranger—"I should like to say a few words to-night." Leader—"I don't know. Have you had a career of crime, been a drunkard or anything of that sort?" Stranger—"No, indeed; I can truly say I have always led a correct life." Leader—"All very well, no doubt; but the people won't care to listen to you. You'd better stay, however, and hear Bruiser-boy, the reformed pugilist, and Mole, the saved sneak thief. Both of 'em are rattlers."

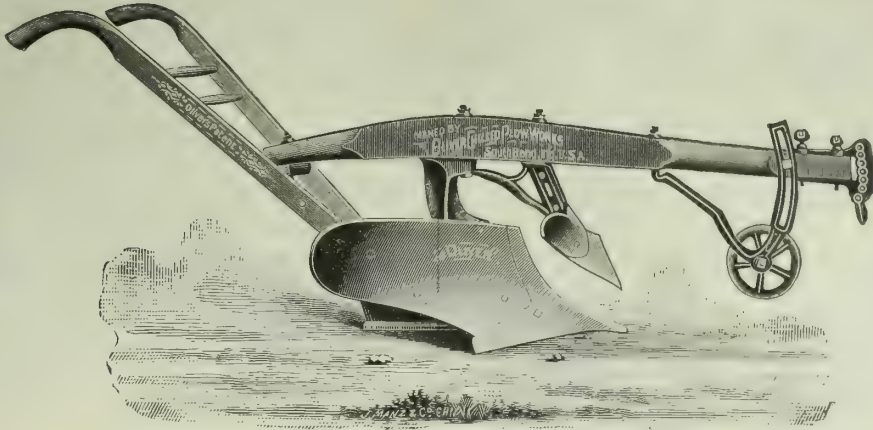
Without the resolution in your hearts to do good work so long as your right hands have motion in them, and to do it whether the issue be that you die or live, no life worthy the name will ever be possible to you, while in once forming the resolution that your word is to be well done, life is really one, here and forever.—Ruskin.

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List of U. S. Patents for Pacific Coast Inventors.

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FOR THE WEEK ENDING FEB. 20, 1894.

- 515,285.—COLD STORAGE—Burnham & Meyers, S. F.
515,072.—FRUIT BASKET—T. Cogswell, San Diego, Cal.
515,115.—GRIP OPENER—W. P. Courtney, Oakland, Cal.
515,117.—COAL BUCKET—Curtis & Isaacs, S. F.
515,288.—SYRINGE—C. D. Harsin, Stockton, Cal.
515,050.—CARBURETER—G. E. Hoyt, S. F.
515,148.—LEACHING ORES—Janin & Merrill, S. F.
514,946.—INSECT TRAP—L. M. Long, Porterville, Cal.
515,162.—LIFTING FORK—G. M. Parsons, Virginia, Nev.
515,014.—MOLD—E. L. Ransome, Oakland, Cal.
515,015.—FIREPROOF FLOORING—E. L. Ransome, Oakland, Cal.
515,016.—CONCRETE PIPE—E. L. Ransome, Oakland, Cal.
515,017.—SLAKING LIME—E. L. Ransome, Oakland, Cal.
515,163.—CLAMP NAIL—H. C. Rasner, S. F.
515,131.—CHAMBERS, ETC.—J. D. Rush, San Diego, Cal.
515,023.—SWIVEL—F. Salathe, Santa Paula, Cal.
515,186.—CAN-BODY MACHINE—C. M. Symonds, S. F.
515,032.—FLOWER POT—W. L. Vestal, San Bernardino, Cal.
514,976.—STRINGING PIANOS—C. S. Weber, San Jose, Cal.
514,973.—PLOW—J. H. Wiles, Douglas, Or.

NOTE.—Copies of U. S. and Foreign patents furnished by Dewey & Co. in the shortest time possible (by mail or telegraphic order). American and Foreign patents obtained, and general patent business for Pacific Coast inventors transacted with perfect security, at reasonable rates, and in the shortest possible time.

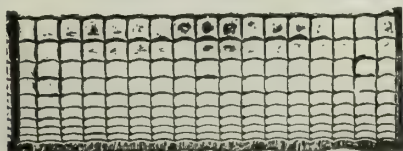
Every man has his own vocation. There is one direction in which all space is open to him. He has faculties silently inviting him thither to endless exertion. He is like a ship in a river; he runs against obstructions on every side, but one, on that side all obstruction is taken away, and he sweeps serenely over a deepening channel into an infinite sea.—Emerson.

NOTICE.

The Annual Meeting of the Stockholders of the GRANGERS' BUSINESS ASSOCIATION, a corporation, for the election of a Board of Directors, and for the transaction of such other business as may properly come before it, will be held at No. 103 Davis Street, San Francisco, at 10 o'clock, A. M., Wednesday, April 11, 1894.

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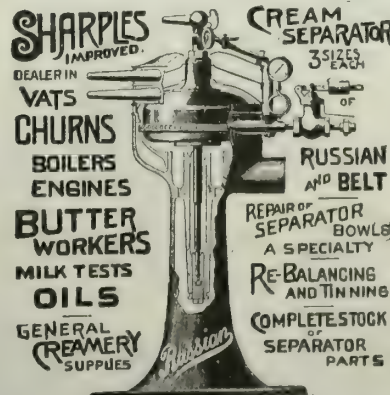
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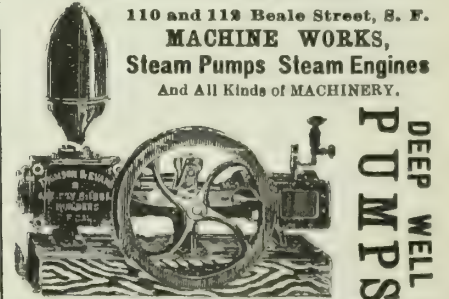
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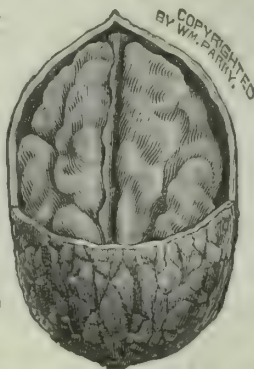
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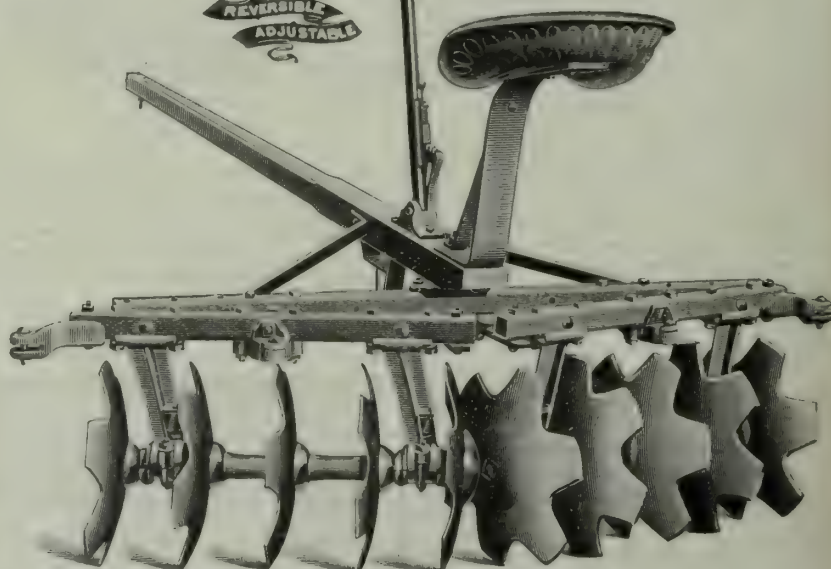
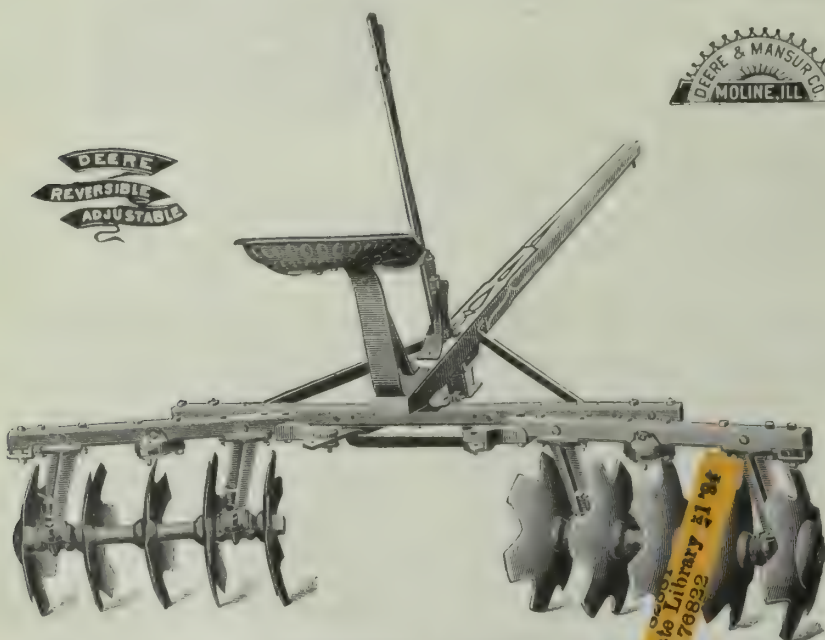
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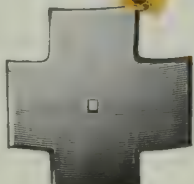
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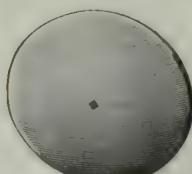


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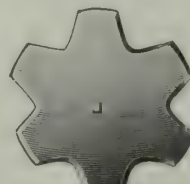
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PACIFIC RURAL PRESS

Vol. XLVII. No. 11.

SAN FRANCISCO, SATURDAY, MARCH 17, 1894.

TWENTY-FOURTH YEAR.
Office, 220 Market Street.

The California Fruit Union.

It is announced that the California Fruit Union proposes to go out of business and will do no shipping this year. The reason seems to be that the Fruit Union has not secured such co-operation from the fruit-growers as was expected at the outset, and the growers, who have been thus far shipping through the Union, think they can do their business just as well or better in other ways. It does not appear that there is anything the matter financially with the concern, but there is money to meet all obligations which may be outstanding.

It does not occur to us that the retirement of the Fruit Union has any great significance. We do not like any movement in this great fruit trade which looks like retrogression, and we would have preferred that the Fruit Union should live, throw off its limitations and entanglements, and develop into such a co-operative union of fruit-growers as was aimed at by its organizers about nine years ago. This would have been better than collapsing. But the collapse does not indicate at all that a general co-operative movement of fruit-growers will not succeed.

The Fruit Union began well, and that is about as far as it ever went toward the ideals cherished by its organizers. Before its first year was out, it was warped and twisted in so many ways to meet the special interests of different people that before the child could walk it could hardly be recognized by its parents. From that point onward it continued to develop side issues and personal interests until, during recent years, it has only been a name under which certain growers have shipped to distant receivers with whom they found most profit in dealing. Though it shipped a large amount of fruit, and in that way aided materially in the extension of the business, and is deserving of credit therefor, it long since ceased to be a union of California fruit-growers, if, indeed, it ever was.

This being the case, we cannot regard the cessation of the work of this organization as of any particular moment. The same parties will ship fruit and the same parties will receive it, so long as the business is profitable, and they can as well do this under one name as another.

Undoubtedly, the failure of the Fruit Union to realize the aims of its organizers was due to the fact that individual interests were stronger than co-operative zeal. So long as this is the case, any co-operative enterprise will fail. It is now the question whether, after a decade of dissatisfaction and deprivation of due reward, the fruit-growers are any more prepared to advance their industry commercially than they have been hitherto. It certainly looks as though they were. The outcome of the several co-operative enterprises which are now under trial, or are projected for the coming summer's trial, alone can answer the question. The present indication is that they will strike a higher mark in commercial co-operation among fruit-growers than the Fruit Union was ever able to attain.

IT IS TELEGRAPHED from Chino that a large force of men is employed at the sugar factory. The capacity is to be enlarged nearly a half. All sugar will be refined there this season. Four new boilers, lime kilns and an ice plant will be added, necessitating the erection of large brick

The Orange.

The orange season is at its height, and the marketing is showing that the orange is no exception to the rule of low prices, and naturally some disappointment is being felt in the producing regions. It would probably be better to derive some consolation from the fact that the depression of the orange is only its share in the general area of low commercial barometer which is affecting all products. Still, though its traffic be temporarily unsatisfactory, the orange is just as handsome and valuable as ever as a product of horticultural skill and labor. If one views the citrus fruits now on sight at the Midwinter Fair he gets no idea of doubt or depression. The orange and lemon displays speak only of beauty and wealth and are exceedingly exhilarating in their effect upon the mental state of one who studies them. The two great citrus fairs have passed, but their ruins are still well preserved. This week there is, besides these, a classified exhibit, chiefly of citrus fruits, in the main horticultural building, which is in some respects the finest and most interesting display ever made. There are about 400 plates of fruit of the leading varieties, selected from their best products by orange and lemon growers in all parts of the State. This gives the visitor an opportunity which he has never had before of comparing the fruit of different prominent localities. It is wonderful how many fine oranges there are grown in California.

And the beauties of the fruit are only half of the charms of the orange. The tree is perhaps the grandest of our fruit trees, and its rich green and gold colors are charms which no words can fitly characterize.

WE alluded recently to the reports of the successful eating of black scale by the *rhizobius ventralis*, which bids fair to run the *vedalia* close for honors. Alexander Crow, State Quarantine Inspector, has received a letter from Elwood Cooper, in which the writer gives the gratifying information that the black ladybugs have almost entirely exterminated the scale in his orchard. Indeed, so thorough has been the work of the beneficent bugs that Mr. Cooper thinks some steps should be taken to insure a continuance of the supply. Mr. Crow has on file no less than 250 written applications for colonies of the *rhizobius*, and these will all be filled in due season.



ORANGE TREE IN BEARING.

buildings. Planting is in full progress, 80 tons of seed having been received. The acreage planted to beets this year is nearly double that of last year.

ENGLISH Board of Trade returns for January point to improvement. The iron industry presents a more hopeful outlook, and exports and imports have increased \$27,000,000 over the same month last year.

TITLES to lands in Oklahoma are said to have been endangered by the signal gun firing too soon at the time of the rush.

IT IS ANNOUNCED that Adolph Spreckels, the youngest son of the Sugar King, has secured the Napa ranch formerly owned by John McCoord. This ranch is situated one mile south of Napa and contains 90 acres. It has been used as a farm for the breeding of trotters for several years. Mr. Spreckels is reported to have paid \$25,000 for the ranch, which he will convert into a thoroughbred breeding farm. Mr. Spreckels has been a liberal purchaser at recent sales and now owns some 30 or more thoroughbreds. In fact, he owns more Australian blooded stock than any two other breeders in America.

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Our latest forms go to press Wednesday evening.

ANY subscriber sending an inquiry on any subject to the RURAL PRESS, with a postage stamp, will receive a reply, either through the columns of the paper or by personal letter. The answer will be given as promptly as practicable.

ALFRED HOLMAN.....Editor
J. F. HALLORAN.....General Manager
E. J. WICKSON.....Special Contributor

San Francisco, March 17, 1894.

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See Advertising Columns.

The Week.

The week has not brought any more rain to the southern counties, and they must have a wet spring if they attain their seasonal average. Thus far, growth is looking well; but naturally apprehension is felt, and there is some hardship because of backwardness of natural pastures. To offset this source of anxiety, the south is enjoying an unusually good tourist traffic, and the number of winter residents is said to be very large. Such a sunny winter is cake to a tourist, though it may be saltless mush to others.

The Midwinter Fair shows improvements at each succeeding visit. The spectacular attractions are now quite satisfactory, and satisfy the multitude who open three parts of their faces to them. The cheap overland fares are bringing in many Easterners, and excursion trains from California points are well patronized. The Fair should receive liberal patronage from this on to its close. It certainly offers an immense interest and entertainment.

IT IS INTERESTING these times to hear of a buyer who is willing to put money in improvement enterprises. It is announced that the Escondido irrigation district bonds to the amount of \$250,000 have been sold to I. E. Doty, a Nebraska capitalist, for 91 cents on the dollar. Doty also secured a contract for constructing the entire water system, which will extend from a point above La Jolla, on the Indian reservation, at the headwaters of San Luis Rey river to the dam site in Donsagern canyon and thence five miles to a point down the canyon, where a flume will be constructed to Escondido, a distance of 15 miles. The entire length of the system will be 21 miles. Mr. Doty states that he will begin work within six weeks.

NEW YORK has granted the right-of-way to an electric company along the canals of the State to lay conduits, string wires, or otherwise transmit the immense electric current generated at Niagara Falls. The company will run the canal motors to open and close the locks.

Sugar Cane for the Tule Lands.

An experiment is now beginning, the results of which will be watched with much interest by tule land farmers who are endeavoring to produce profitable crops on the expanse of reclaimed land near the confluence of the San Joaquin and Sacramento rivers. After vast expenditure for the reclamation of these vast areas of rich and kindly soil, it has become a close question as to what can be best done with it. The low prices of grain have seriously affected the larger tule enterprises. Smaller tracts are profitably used in truck farming, but the extension of such crops is naturally limited. Other styles of farming are also satisfactorily followed to some extent, but the discovery of a new crop adapted to the situation and profitable to grow will be hailed as a godsend by a multitude of owners and tenants.

The United States Department of Agriculture now proposes to assist in the solution of the question, so far as trial of some crops which are grown in the Southern States on naturally moist lands are concerned. It proposes to do this by the establishment of a station under the direct control of the Secretary of Agriculture. In this way the general government will minister to local agriculture in California as it has already done in some other States. The establishment of a station under the Secretary of Agriculture will thus supplement, in one or two special branches, the general experiment station work which is directed by Prof. Hilgard under the control of the Regents of the State University. The Government has done this in other States. It has a grass station in Kansas, it has had sorghum sugar stations in New Jersey and Kansas, and stations for the growth and working of true sugar cane in Florida and Louisiana. It is in fact contemplated to move to this State from Louisiana the machinery which has finished its work in that State. When it was announced that it was concluded to close the Louisiana station, Congressman Caminetti, in whose district the main tule region is situated, conceived the idea that our tule lands should be given a chance to demonstrate their fitness for sugar cane if they had such fitness. He secured an item in the appropriation bill to advance such an experiment if the Secretary of Agriculture deemed it advisable.

Dr. H. W. Wiley, Chief of the Division of Chemistry, in whose charge all the sugar work of the department is placed, favored the measure and commended it provisionally to the late Secretary Rusk. When Mr. Morton became Secretary of Agriculture he gave the proposition careful attention and authorized the preparation of a report upon the physical features of the main tule region by one of the staff of the Agricultural Department of the State University. This report gave a faithful review of all the matters involved and included description of several tracts of land the use of which was tendered to the Department of Agriculture for experimental purposes. Upon this showing and other information of its own the department decided to undertake the experimental work which has now been commenced.

The site accepted is situated on Union island near the landing on Middle river known as Fish Camp. It is the property of Williams & Bixler and has been thoroughly reclaimed for several years. It is adjacent to the levee on Middle river and includes good representative areas of both sediment and peat soils, so that the experiments will show the behavior of the cane on both these soil classes.

This year there will be about two acres planted with cane seed, and the extension subsequently to ten acres of cane is contemplated. If the preliminary tests are satisfactory, it is contemplated that a small sugar-mill will be constructed by the Government by which its own cane and cane produced experimentally by private growers can be crushed and tested. The location of the mill at a river landing will facilitate movement of cane to the site by water.

This is the outline of the experimental work which is beginning this month on the tule lands. Of course, its outcome can only be conjectured. It is projected to prospect a new subject. Cane has been grown in this State successfully for many years, both in the tule region and away from it; but nothing has been done with it in a systematic way. This foundation for an industry the Department of Agriculture professes to lay for California if conditions, yet to be ascertained, favor it. Of course, the vista which a prophetic eye may discern beyond the mists of experiment may show miles of green cane within the levees and scores of sugar mills beside the waterways and the vast territory which now has but scattered habitations, thickly dotted with prosperous homes. If this should come, it will be but the realization of a dream which a host of pioneer tule-land reclaimers have cherished, but have not thus far realized.

The Wheat Shortage.

It may be encouraging to wheat-growers to be reminded that there is less wheat than usual in the world than at this time in former years. According to the March report of the Department of Agriculture, an outline of which has been telegraphed, the indicated crop of wheat in the farmers' hands in the United States is 114,060,000 bushels, or 23.8 per cent of the volume of the crop of 1893. This is nearly 21,000,000 bushels less than the average estimate for March 1st, last year, and nearly 20,000,000 less than the average for the past eight years. The amount remaining in the farmers' hands in eleven principal wheat-growing States is about 73,000,000 bushels, 63.8 per cent of the amount in the producers' hands in the country at large. The average amount of the crop of 1893, per measured bushel, is calculated to be a little over 381,500,000 commercial bushels, against 306,000,000 measured bushels as heretofore reported.

Official and commercial estimates of the world's wheat crop for 1893 make it 32,000,000 bushels less than last year. The final estimates will probably still further reduce the totals for 1893, as the preliminary estimates of Russia and Germany are greatly reduced by the final estimates.

IT IS INTERESTING to note that "tall oat grass," which is winning the good opinions of many Californians as a pasture grass, is also developing high utility in the Southern States. A correspondent of the *American Agriculturist* describes it as one of the few cultivated grasses that thrive well on sandy upland in the South. It does very well on a variety of soils, though sandy land suits it best. It is a hardy plant and stands both summer drouth and winter cold about equally well, and is not less valuable for its large and valuable quality of hay than for the enormous amount of early and late pasturage it affords. It is sometimes called evergreen grass, owing to the fact that at the South it is green the year round, winter and summer. The hay is very nutritious, and two crops can be had in a favorable season. The grass grows in tussocks, and hence heavy seeding is required—about two bushels to the acre. This grass is not so hard to get a stand of, as is the case with most of the cultivated grasses. The seeds ripen while the stalk is green, and hence both a seed and a hay crop can be saved. This southern description rather exaggerates its merits, as they are developed under arid conditions in this State, and yet it must be counted one of our best imported grasses. It is now quite widely distributed in this State.

THE San Jose fruit-growers evidently do not consider the proposed ad valorem duties, which we are quietly told are almost as good as the old duties, are any such thing. In the face of such assurance they have met in San Jose and resolved as follows:

WHEREAS, The ad valorem tariff on dried fruits as proposed by the Wilson bill is ruinous to the fruit industry of California, in which there are more than \$50,000,000 invested, giving employment to many thousands of our citizens; so invested upon the assurance of the Government that the industry would be protected against foreign products and pauper labor; therefore be it

Resolved, That it is the sense of the fruit-growers of Santa Clara valley that the present duty upon dried fruits should be retained.

A committee was appointed to gather statistics and formulate a statement showing facts and figures in justification of the demand for the retention of the present tariff. This will be forwarded to California Senators by wire.

ON MARCH 12TH the Secretary of the Treasury sent to the Senate a list of licensed producers of sugar from both sorghum and sugar cane in each State and Territory to whom bounty has been paid and the amount paid to each. The statement shows that the payments for the current year up to March 4th have been as follows: Beet sugar, \$610,935; sorghum sugar, \$16,926; cane sugar, \$2,513,597; maple sugar, \$115,597. California leads in the production of beet sugar. Nebraska and Utah are also producers of this kind of sugar. Kansas and Minnesota are the only producers of sorghum sugar, and the latter only slightly. Louisiana receives the bulk of the bounty paid on cane sugar.

A SALEM, OR., PAPER comments on the fact that apples are bringing \$2 a bushel in the East, while in Salem 75 cents is considered a good price, and adds that there are practically none for shipment, as orchardists have for years neglected the apple for other fruits.

THE Italian Chambers have accepted an increase of the duty on grain to nine lire per quintal. At this rate the Italian farmers hope to be able to compete successfully with the cheaper breadstuffs imported from Russia and America.

From an Independent Standpoint.

During the past week, for the first time in many years, there has been serious talk at Washington of flagrant and criminal corruption in high official life. It is charged that the Wilson tariff bill has been see-sawed for weeks at the bidding of stock jobbers in New York; that while the public has been kept in ignorance of caucus proceedings the speculators have been fully informed; and that very large sums have been made by certain Senators operating in connection with Havermeyer and other Wall street manipulators. On Tuesday of this week, Senator Pepper, the Kansas Populist, presented to the Senate a resolution reciting these charges and calling for an investigation, but it was voted down, a fact which wears an unpleasant look. It is deemed most extraordinary that Senators whose integrity is in question should join in a vote to suppress investigation, and it has not failed to be pointed out that this is not the usual course of straightforward men confident in their own integrity and unwilling to rest under dishonorable imputation.

When the Tariff bill came up to the Senate six weeks ago, it was, in conformity with custom in such cases, referred to the Finance Committee. Instead of inviting the full committee to consider it, the chairman (in line with the policy of Chairman Wilson of the House and with the party programme) invited the Democratic members only. The motive was plain. The Democrats had a majority in the committee and a majority in the Senate; if they could settle all differences among themselves in private meetings, then in formal session later on it would be easy to carry their measure through the committee, and, in due course, through the Senate.

Thus it came about that for the five weeks following the receipt of the Tariff bill from the House, it was in the hands not of the Senate, not of its Finance Committee, but of a caucus made up of the Democratic members of that committee and such of their party associates as they chose to invite. In all these weeks this caucus, which soon grew to include the whole Democratic membership of the Senate, has been trying to come to some agreement with reference to the bill. Proposition after proposition has been made and considered, but no information of the proceedings has been allowed to go to the public. But somehow, certain Wall-street speculators have been kept posted, and the stock market, day by day, has reflected the course of things. When in the caucus it has looked as if sugar would remain on the free list, sugar-trust stock on the New York board has gone down. When, later, the caucus determined to put a rate of one cent per pound on sugar, sugar-trust stock went up; and somebody made a big pile of money by the deal. And as with sugar, so with other things. The bill has been see-sawed now one way, now another; the stock market has been kept in a fever; transactions on the boards have been lively; and the promoters of speculation who have known the "inside" of things at Washington have dishonestly won vast fortunes.

The question is, how have these speculators contrived to keep informed when an anxious public has been kept wholly in the dark? There has been one way, and only one way—somebody in the caucus meetings has reported their doings from day to day to those in a position to make shameful profit out of the information. The Republicans charge that the caucus has been dominated by the speculators; that it has backed and filled on sugar and other matters in obedience to the dictation from New York, and that many if not a majority of its members have been in on the deal. This, however, is mere partisan heat and extravagance, neither reasonable nor respectable. But the fact remains that somebody has betrayed the secrets of the caucus to the Wall-street men; that shameful abuses have resulted, and that our highest national tribunal has been disgraced.

And of this it must be said that it is the natural and inevitable outcome of a wrong way of doing public business. An effort has been made to do in a party caucus what, in the contemplation of the Constitution and the laws, should be done in open legislative session. The effort thus made to eliminate the minority, and to cheat it out of its rights, has ended in confusion and shame; and it is just such an end as might have been expected from such a course. The charge by the Republicans—putting the shame upon the Democrats—is more specious than just. In the instance, it so happens, the Democrats are at fault; but the profounder fault lies in the system of secret caucus legislation, for which the Republicans are even more deeply responsible than the Democrats. There is only one right way to carry on the legislative business of a republic like our own, and that is without concealments. Executive work must, in the nature of things, proceed often in unannounced courses, but the national legislature ought never to close its doors. And above all

no party should ever attempt to give into the hands of its secret caucus, duties instructed by the People to all their representatives in Congress.

The bill, now at last in the hands of the full finance committee and therefore again before the public, was much changed by the Democratic caucus. Sugar is taken from the free list and subjected to a rate of one cent per pound; coal is to be rated at 40 cents per ton; iron, which was made free under the Wilson bill, is again put on the duty list; honey is changed from 10 cents per gallon to 20 per cent ad valorem, a reduction of one cent; apples in any form reduced to 20 per cent ad valorem on the dutiable list; olives, 20 per cent ad valorem; currants, raised from 10 to 20 per cent ad valorem; plums, prunes, figs, raisins and other dried grapes, including Zante currants, changed from 1½ cents per pound to 30 per cent ad valorem, a slight reduction, 1½ cents being reckoned as equivalent to 31.5 per cent ad valorem; almonds, shelled or unshelled, 25 per cent ad valorem, a reduction of from 3 to 5 per cent ad valorem; filberts and walnuts of all kinds, 35 per cent ad valorem, the change being substantially only from a specific to an ad valorem duty; other nuts, from 1 cent per pound to 20 per cent ad valorem, a reduction of 1 per cent ad valorem.

In the wine schedule appear all those changes which were agreed on by the wine interests. Burlaps and grain bags made from them are increased from 20 to 22½ per cent ad valorem; equivalent to 1½ cents. A duty of 20 per cent ad valorem is placed on Chinese matting. It was formerly on the free list.

Contrary to the wishes of most of those who have interested themselves in Californian currants, there are two clauses which will affect them, instead of one which would have left no doubt. One is that which refers specifically to Zante currants, and the other is that which refers to currants of any description other than Zante. Thirty per cent is the duty on Zante currants, and 20 per cent on other currants. Consequently, all Zante currants imported will hereafter be invoiced as plain currants, thus saving 10 per cent ad valorem. An effort will be made to have this changed. There are many other changes, but those enumerated are the only ones that specifically affected the interests of the RURAL'S readers. The general opinion seems to be that the bill has been made worse by the changes. They have played hob with the philosophical theories upon which it was alleged to be based. As one critic puts it, the bill as it comes from the majority of the committee "is neither a bill for revenue, for protection, nor for free trade, but has all the objectionable features of each system, with none of the good points of either. It is a crazy quilt made up of schemes to favor all forms of greed that could get a 'pull' in the composition of it." This is a severe indictment, but hardly too severe when notice is taken of the discrimination in favor of South Carolina, Louisiana and Alabama and against States like California which have no "pull" in Democratic councils.

It is expected that the committee will report the bill to the Senate this coming week, but it will probably be three or four weeks before debate upon it will begin. The Democrats claim to have conciliated all factions, and seem confident that they will pass it as soon as they can force a vote; but this is very doubtful. Senators Hill and Murphy continue to oppose it openly, and others among the Democrats, it is asserted, will stand with them. However, no man can prognosticate its fate until the progress of debate shall force the hand of some who are now silent and non-committal.

The Florida Winter.

We are indebted to Mr. B. S. Pague of the Weather Bureau for a copy of the first issue for the season of the Weather-Crop Bulletin of the Florida weather service. It is dated March 5th, and from it we make the following extracts:

The winter of 1893-94 was a very mild one in Florida. The temperature averaged about 6 degrees higher than during the winter of 1892-93, and about 2.5 above normal. The rainfall was deficient, averaging about .25 of an inch less than for the previous winter and over half an inch less than normal. The average temperature for December was a little more than 1 degree above normal, and the rainfall was nearly normal for the State but in the extreme western portion there was a deficiency of between 2 and 3 inches. January was the warmest month of the winter, the monthly mean temperature being about 10 degrees higher than the mean for January, 1893, and over 1 degree higher than normal. The rainfall for January averaged about 1 inch below normal and about .25 of an inch above that for January, 1893; frost occurred on only 8 days of the month, against 28 days in January, 1883. February was slightly colder than usual, the temperature averaging about 2 degrees below normal. Killing frosts and thin ice were reported on 3 or 4 days in the northern and western portions of the State, where the temperature was from 1 to 3 degrees below normal, while on the east coast it was

slightly above normal. But little damage was done by frost to fruit or trucking interests.

The season so far has been unusually favorable for crops. Vegetation generally is much further advanced than it was this time last year. Strawberries were in market several weeks earlier than last season. First ripe strawberries were reported at Tampa Dec. 26th; first noticed in Jacksonville market Jan. 10th; first ripe ones reported in St. Augustine Jan. 13th, grown in St. Johns county. Peach trees in Duval county were in bloom Jan. 14th. The orange crop of the year 1893-94 is estimated at 4,500,000 boxes, and from the best information obtainable, about 4,000,000 boxes have been shipped. The crop was larger by about 1,000,000 boxes than the crop of 1892-93. The quality of the fruit was good, but it has not shipped so well as did the preceding crop. As compared with last year's crop, a larger percentage has been shipped up to date. Orange trees are now blooming for the next crop, and in many groves the ripe fruit and blossoms may be seen on the same tree.

Canned Goods Gossip.

The Cutting Packing Company furnishes the following review of the canned goods trade:

There is little change in the situation in canned fruits, continued dullness being the rule in spite of existing prices, the lowest ever known.

Naturally some trade has grown out of them, but nothing like what would be expected; and although all qualities have shrunk alike in value, the call seems to be almost wholly for the cheapest brands, so that the anomaly presents itself of the trade throughout the country filling its wants with table fruits at from 90c. to \$1.15, while the stocks of higher quality, held by canners at from \$1.10 to \$1.35, are being depleted in the same proportion. Such demand as exists is uniform for all varieties except the much admired and luxurious cherry which, although costing from \$1.15 to \$2 nine months ago, and now offered at from \$1.10 to \$1.50, according to size, shape, color and an absence of syrup, is the best let alone fruit we ever knew—a veritable boycott having grown up around it.

Possibly three-pound Extras are equally ignored, but then this is neither the "time or place" for such. Nothing is said about futures, except to decry the idea of ever packing more. We think, however, we can see some feeling on the part of domestic dealers that the bottom has been quite, if not actually, reached, and if they really need any goods in the near future that they cannot err in buying at present prices.

One parcel only, so far as we know, has been sold for export since our last advices, and that at prices and terms that will not encourage the packer to continue in business.

Tomatoes sympathize more strongly with fruits at present than at any date since the packing season, and we attribute it to the natural anxiety of jobbers, who are suspicious of any and all values, to realize on their holdings, although there is still a seven month's demand to supply before new goods arrive.

The Frozen Meat Trade.

Some figures recently published show the enormous extent to which the frozen meat trade in England has been developed during the last 13 years. It appears that in 1893 no fewer than 2,514,541 carcasses of frozen sheep and lambs and 171,640 quarters and pieces of beef arrived in London from New Zealand and Australia alone, without counting 1,373,733 sheep from the River Plate and 16,425 more from the Falkland islands. The sheep are mainly bought direct from the farmers in New Zealand or Australia by representatives of the English companies, the amount paid being 2d per pound for animals not over 70 pounds in weight. The farmers also receive the skins, kidneys and fat. A few are sent on consignment, but the other system is thought to work more satisfactorily, as under it the farmers know at once what they are to get, and are saved tedious delays and possible disappointments. There are, altogether, 22 meat-freezing works in New Zealand, of which 13 are in the North Island and nine in the South, and these works can freeze from 12,000 to 13,000 sheep in a day, or an aggregate of 4,000,000 a year. The cost of a complete set of works, capable of dealing with 1000 sheep a day, is estimated at from £17,000 to £20,000. Eighty-eight vessels altogether have now been fitted with refrigerating apparatus, and these have a maximum carrying capacity of 6,700,000 carcasses. The cost for slaughtering, freezing and putting the sheep on board is from three-eighths of a penny to a half-penny per pound, and the freight, insurance and London charges amount to about three half-pence per pound, making the total cost to the importers 4d per pound, or a fraction under. The present market price in London for the best New Zealand mutton is 4½d (a trifle over 8c) per pound.

Retirement of an Old Firm.

SACRAMENTO, March 7.—The W. R. Strong Company, engaged in the nursery and seed business, went into insolvency to-day for the benefit of its creditors. The debts and liabilities of the company aggregate \$145,217, distributed among about 328 creditors residing in various parts of the State. The assets amount to about \$130,000. The heaviest creditor is B. R. Crocker of this city, who loaned \$50,000, which is secured by a mortgage on a fine farm. Some other creditors are the Farmers and Mechanics' Bank of Los Angeles, \$6079; the Fresno Loan and Savings Bank, \$2148. The company has been embarrassed by attachment suits pending in Los Angeles, Riverside and Sacramento counties, and in order that all its creditors should be treated alike the company decided to take advantage of the insolvent act to secure an equitable distribution of its assets among all its creditors.

Rainfall and Temperature.

The following data for the eight days ending 5 A. M. Wednesday, March 14, 1894, are from official sources, and are furnished by the U. S. Weather Bureau expressly for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total rainfall for the eight days.....	Total seasonal rainfall to date.....	Total seasonal rainfall last year to same date.....	Average seasonal rainfall to date.....	Maximum temperature for the eight days.....	Minimum temperature for the eight days.....
Yuma.....	.....	2.16	.82	8.01	92	46
San Diego.....	.....	4.62	6.30	8.09	101	44
Los Angeles.....	T	6.59	22.49	15.47	70	42
Keeler.....	.....	1.60	3.54	2.38	74	33
Fresno.....	.....	6.12	9.12	6.56	70	40
Sacramento.....	.32	13.20	20.37	15.72	66	42
San Francisco.....	.04	16.06	19.20	19.91	58	44
Red Bluff.....	.29	17.52	28.28	18.96	62	38
Eureka.....	1.50	45.38	33.64	35.96	62	38

Butte's Best Acre.

On the General Bidwell ranch at Chico, 60 bushels of wheat per acre have been grown in one season. Caleb Scott of Concow valley has cut two crops of red clover, which made three tons, worth \$10 a ton or \$30 an acre. J. H. Hoad of Merrimac dug 90 sacks of good potatoes per acre, averaging 115 pounds per sack. Reyman & Evans, on the west side of Feather river, cut five crops of alfalfa averaging a ton and a half per cutting, which sold for \$6 per ton or \$45 per acre. George Worth of Nelson harvested 80 bushels of barley per acre. Joe Gardella of Oroville cut 200 sacks of cabbage, averaging 65 pounds per sack. On the Evans ranch at Nord, 64 bushels of Pride of Butte wheat have been cut per acre. John Scott of Junction House raised 2000 pounds of Lima beans per acre. J. H. Hutchins of Central House raised 10 tons of alfalfa per acre, worth \$6 per ton. S. J. Nikirk of Nelson harvested 82 bushels of barley per acre. Near Chico, John Guill raised 40 tons of sugar beets per acre. Peter Webber of Gridley has grown 53 bushels of wheat per acre. On Brush creek, \$150 worth of raspberries per acre have been obtained. Allen Henry of Chico cut three tons of grain hay per acre, this from a field of 12 acres, the hay being weighed and sold in Chico. Joe Gardella of Oroville raised 300 sacks of onions, averaging 100 pounds per sack, to the acre. Wm. Looney and sons, west of Biggs, harvested 38 bushels of wheat per acre on 640 acres. J. McIntosh of Nelson raised 28½ bushels of wheat per acre, volunteer, on 1500 acres.

On Butte creek blackberries returned \$150 an acre. On the Sacramento river a Chinaman on eight acres obtained \$1800 worth of broom-corn straw and \$800 worth of seed, making in all \$2600 for the eight acres, or \$325 per acre. J. S. Hutchins of Central House cut 80 bushels of barley per acre from a 70-acre field. Chas. Wick of Sundale got \$20 per acre from 100 acres of wheat and barley hay. In one of the vegetable gardens near Oroville 40 tons of sugar beets per acre were obtained. Geo. Martin obtained from a number of land-owners on Brush creek, the following data: An acre of Early Rose potatoes gave 300 bushels; River Reds, 400 bushels; Beauty of Herbon, 500 bushels; Wilson's Choice, 700 bushels. The lowest price for any variety was one cent per pound. Allen Henry of Chico, on a 90-acre field, got 53 bushels of wheat per acre, and John Ball, on 320 acres, obtained 54 bushels of wheat per acre. T. B. Hutchins of Central House, from 20 acres of French prune trees, obtained 10,000 pounds of fruit, and on an acre of alfalfa he cut five crops, giving 10 tons per acre, worth \$6 a ton. W. L. Sanders of Union district cut three tons of wheat and barley hay per acre, worth \$10 per ton. On four acres of slickens, Mr. Munn got 125 bushels of barley per acre. Jim Decker of Chico cut three tons of hay per acre. Joe Gardella dug 75 sacks of sweet potatoes per acre, and from a single acre he got 300 sacks of Irish potatoes, averaging 110 pounds to the sack. At Nimshew, M. V. Roe realized \$967.50 per acre from Ben Davis apples. On the Henshaw place, near Biggs, 60 bushels of wheat per acre have been grown. Chinese on land rented from Reyman & Goldstein, dug 313 sacks of potatoes per acre. In growing rhubarb in Springer Mills district, \$480 per acre has been realized. Wm. Smith of Pleasant valley obtained over \$250 per acre from strawberries. J. S. Hutchins of Central House raised 60 tons of sugar beets per acre by letting them grow to their full size.—Oroville Register.

A Game Law Convention.

SACRAMENTO, March 5.—In accordance with the request of the State Sportsmen's Association Governor Markham has named the following delegates-at-large to the convention to be held in San Francisco April 10th, to revise the State game laws:

From San Francisco, Judge Joseph McKenna, Crittenden Robinson, W. W. Foote, W. S. Kittle, Harry Babcock, E. S. Knowles and J. O. Cadman; Sacramento, W. E. Gerber and C. N. Post; Grass Valley, Dr. I. W. Hayes; Colusa, H. M. Albery; San Diego, Leonard Goodman; Oakland, F. W. Henshaw; Los Angeles, H. M. McNeil; Yreka, Dr. Robinson; Salinas, Judge A. Dorn; Riverside, A. W. Bonner; San Bernardino, H. M. Willis; San Benito, Senator Thomas Flint, Jr.; Chico, Park Henshaw.

CORRESPONDENCE.

An Australian's Comments on Fruit at the World's Fair.

By Fred C. Smith, Angaston, South Australia.

I must confess that in some respects I was disappointed with the exhibit of horticulture at the great fair. I had expected that samples of nearly all of the fruit products of the different regions of the world would be shown, either fresh, dried, manufactured, or put up in glass jars, and all together in the Horticultural building. While in reality the great display in that department was little more than an ordinary "fruit show" on an immense scale, I had hoped to see many novel features introduced; which would have illustrated the development and evolution of the industry.

Practically, horticulture in comparison with some other branches of human work, is in its infancy. While other departments of effort have been receiving the benefit of the careful attention of thousands of skilled, earnest and enthusiastic workers, horticulture has only recently, say within the last 25 years, begun to be developed into a science. Hitherto it has hardly been a big enough thing peculiarly to tempt men of wealth into it; and men who would pay for the private work of their own investigators, quite apart from the questions of making it profitable, have been very few and far between. From the very nature of things, it has been impossible for a man to commence in a small way and build up an immense and constantly increasing fortune out of horticulture, even in California. The very causes which have operated to produce iron, steel, coal and oil millionaires would have prevented the rapid and wholesale consumption of fruit in the United States, which alone gives reason for the splendid promise of the future that horticulture holds out in that country.

With this phenomenal progress came the recognition of the important place it was likely to take in the development of the natural resources of the country and its health aspect also, and as its sister, agriculture, was being given close and earnest attention by the National and State Legislatures, with a view to concentrating the energies of skilled scientific workers upon it, horticulture also received similar help, and the two branches have almost invariably been represented under the roofs of the same experiment stations, co-operating and working together where possible. The aid of chemistry, of entomology, of meteorology, and other sciences is being invoked to find out and demonstrate plainly the reasons for things which, to even the best and oldest of horticulturists were bare facts only, and for which various and often absurdly inadequate explanations were offered and accepted from generation to generation, until this restless age of research in all things appeared.

I hoped to have seen, in some practical way, illustrations of the work that is being as it is to be done in this way (for the producers), shown at the Horticultural building. Certainly, a series of addresses, some of which I heard, were given at the horticultural and agricultural congresses at the fair, but only a very limited few, mostly experts and enthusiasts, attended and listened to the statement of work done and to be done at the Government Experiment Stations.

The splendid exhibit of California, by far the best in the fair and, I suppose, better than anything that any other single country in the world can show at present, was lacking in some respects as an educational display.

The Americans are splendid advertisers, and the fruit all through was, as a rule, a big advertisement. Of course, 95 per cent of the visitors at the Horticultural building would be mere sightseers, and the beautiful disposition of the fruits, both fresh and in manufactured forms, was made almost solely to strike the eye of possible consumers.

I was sorry that more attention had not been paid to the educational part. I mean, for instance, in the way of a display in groups, each sample named, showing the different purposes each group was adapted for and stating the reasons; other groups being made up according to season; and combination groups showing what special qualities of different special kinds were needed to make the perfect all-round fruits, thus exemplifying the great work that intelligent hybridization may and must yet do for us. Similar practical ways might have been found for plainly convincing that most conservative of human beings, the cultivator of the soil, of the great part that science is to play in the future in lessening his labor and making the results of it more sure, in defending him from different pests and foes, and even founding what will be ultimately actually a school of pathology for plants, through whose help the farmer and grower will be able to distinguish the causes of disease and apply the remedies, and, better still, understanding the causes, will be in a position to guard and protect his trees and plants from the coming evils that before so worried him to account for.

One of the great features of the fruit display was the effective use made of the glass jars in displaying the more delicate fruits and those whose season was past or not yet come, though I expected to see some far larger jars and pillars, and more of them, than were there.

California, with its superb situation, variety of climates and productive soil, has forged away ahead of all the other States as a fruit State, and the intelligence and enterprise

which I witnessed in its vine and tree-clad hills, valleys and broad plains was again strikingly exhibited in the methods used to advertise the industry. The State authorities had thousands of handsomely gotten up booklets illustrating the producing industries, printed for free distribution. It had been found, however, that an indiscriminate giving away was inadvisable, because many people threw them aside, so a small charge for the postage was being made when I secured several for posting to different parts of Australia.

Most of the important fruit centers had divisions of their own, worked up into different designs, such as kiosks, pagodas, etc., in which a local official was stationed, giving printed and oral information about his or her district, and in some cases free samples to the visitors and inquirers.

A great deal of taste was generally shown in the California stands and cases and racks; a few large glass jars of perfect fruit in bright, clear liquid, and set off by pampas plumes or dhurra, planter's friend or sorghum, producing a much more artistic effect than the scores of shelves of small jars of fruit that some of the States showed. They clearly recognized the fact that a few choice things tastefully shown constitute a far more attractive advertisement than a whole heap of small things, none of which are specially noteworthy. One glance at the show windows of American cities is sufficient to prove the general appreciation of that fact by our bright cousins.

One exhibit of a glass pillar about six inches in diameter and seven or eight feet high filled with fruit looked very well indeed; another consisted of electric-light bulbs, every other one of which was filled with fruit and closed up and screwed into its place to be illuminated at night by its lighted fellows.

These were ranged on the side and over the top of an archway, behind which stood a patent preservative fluid salesman, and across the opening of the archway, over the small counter, was a long glass tube, about one inch in diameter, filled with different berries preserved in the advertised fluid.

Bearing testimony to the originality of the American, and particularly the Californian growers, were such striking objects as a life-sized horseman armed cap-a-pie, constructed principally of prunes; a great model of the liberty bell, made of oranges; an immense globe; a Cleopatra's needle and a pyramid all of the same fruit, helped to lend variety. It puzzled me at first to know how the oranges were made to hold on to the wooden framework without being injured, but on looking closely I found each fruit was resting in a small loop of copper wire, the two ends of which were fast in the wood; the great globe from Riverside contained over 13,000 oranges on it. There was a mound of walnuts in one place five or six feet across, a curtain of strings of peanuts, etc., in another, and a door beautifully designed and marked out in partitions with all sorts of shapes, colors and sizes of cereals, legumes, etc. A reconstructed giant tree, a great cask used as an office and salesroom, big apples and bunches of grapes made up from innumerable small ones, also a 490-pound California pumpkin, were among other notable "big" features of the Horticultural department.

Canada made a very fine show of fruits indeed, surprising me very much by the variety and quality of the exhibits, but they were badly looked after during the last crowded three weeks of the fair, not being renewed or dusted; while most of the States had a man at each of their exhibits, and up to the last day or two they kept on replacing decaying or shriveled fruit by the supplies from home, which were coming in every week.

Petty pilfering kept the guards and attendants hard at it defending the fruit tables, especially the grape displays, and women, I was assured, were worst of all. I myself witnessed many instances of it, and that reminds me of something that I saw in the art galleries; a statue of a lion whose tail was in a position which might easily be sat upon bore a card upon which some wag had written, "Kindly keep off this tail; it has been sat upon and broken, once by a boy, and nineteen times by women."

I was exceedingly sorry that Australia had made such a poor show in the fruit section; a few sugary specimens of raisins and prunes, not well packed and in poor boxes, and a stack of badly labeled canned fruits were all that was to be seen during October—the apples having gone—to prove that we were a fruit-growing country at all. It was an opportunity for advertisement that should not have been missed. As an Australian, I was delighted to hear the remarks everywhere that N. S. W.'s splendid exhibition called forth, and I felt the more sorry that our fruit was not represented when I found the profound ignorance of Australia and its size, climate, productions, etc., prevailing in the Eastern States.

South Africa, too, was not well represented in fruit, though some magnificent Zante currants and Sultana raisins were staged. Among the other curios in the fruit section, I noticed potatoes which were grown in boots, in horseshoes and in iron rings. Also, preserved in a glass jar, in which it had been placed in 1851, was a long, thin cucumber like a snake, from Ontario, Canada.

The rivalry between three or four States for the honor of producing the largest apple in the World's Fair was exceedingly keen, and growers all over these States were sending in their largest apples, one State beating another, till at last Oregon beat them all with a "Gloria Mundi" of 33 ounces, one drachm and 16½ inches in circumference. This was carefully mounted, and placed in a conspicuous position in front of a noisy little bantam cock in a cage, and a card was attached to the top of the cage with the inscription, "Come down, Arkansas! Come down, British Columbia! Come down, World!!! The Oregon rooster is up to stay." Then followed the signed affidavits of the Horticultural Commissioners testifying to the correctness of the size and weight.

Arkansas, whose general exhibit of apples was the best in the fair, retorted with a large card prominently displayed, bearing in bold type the words, "Arkansas for apples; Oregon for bantam roosters."

HORTICULTURE.

The Japanese Plums.

Prof. L. H. Bailey of Cornell University, Ithaca, has just published an interesting bulletin on these fruits, of which the following summarizes the conclusions reached:

1. Twenty-four years ago a plum was introduced into California from Japan which proved to belong to a species heretofore unknown in America. It was first fruited by the late John Kelsey of Berkeley, Cal., and for him it was named. It began to attract wide attention about ten years ago.
2. This plum belongs to the species *Prunus triflora*, which is supposed to be native to China, but which is unknown in a wild state. Subsequent importations have been made from Japan, and at the present time about 30 varieties are more or less known and disseminated.
3. These Japanese plums are distinguished from the common Domestic plums by their generally more pointed or heart-shaped fruit, which has a deep groove or suture upon one side, by a longer keeping flesh and generally a less winged pit. In other botanical features they differ in commonly bearing three or more winter buds at a joint, instead of one, in the light-colored rough bark, flowers usually in twos or threes, leaves long-obovate or elliptic and finely serrate. They are closely allied in botanical characters to some types of native plums.
4. The nomenclature of the varieties is much confused, largely because the Japanese names are used for groups or classes, and not for specific varieties; and there is no uniformity even in the generic application of these names. It is essential to an exact understanding of this fruit, therefore, that the Japanese class names be discarded in this country.
5. While importations from Japan have been made freely, there are probably many more good varieties in that country which have not reached America; but we must look for most permanent progress in the future from American offspring.
6. The Japanese plums differ among themselves greatly in hardiness. The Kelsey is adapted only to the States south of Virginia and to the warmer parts of the Pacific coast; but other varieties are fully hardy in parts of Connecticut, Ontario, New York and Iowa.
7. The varieties now known to be hardy in the plum regions of New York are Burbank, Abundance, Willard, Ogon, Satsuma, Chabot, Yosebe and Berger; and others give promise of being as hardy as these.
8. The period of ripening of the various kinds extends over a long season, running in New York from the middle of July to the middle of September. The same variety does not always appear to ripen at the same period in successive years. This is especially true of the Kelsey, which sometimes varies through a period of three months. In New York, the earliest market variety which has been tested appears to be Willard, followed closely by Ogon, then Abundance and Berckmans, and Burbank still later. Kelsey is generally the latest of all the varieties.
9. Most of the Japanese plums keep for several days, and some of them even for two weeks, after they are ripe. Satsuma is one of the best keepers known in the North.
10. The larger part of the varieties are red, with deep yellow flesh, and the Satsuma and a few varieties less known have deep red flesh. There are only four well-known yellow varieties. There are eight freestones, as follows: Ogon, Willard, Kelsey, Berger, Maru, Munson, Normand and Yosebe.
11. The varieties which can be most confidently recommended at the present time are Abundance, Burbank, Willard, Kerr, Berckmans, Maru, Red Nagate, Chabot, Satsuma and perhaps Ogon. Kelsey is recommended for the South.
12. The chief weaknesses of the Japanese plums are too early bloom of some varieties and liability to the fruit-rot fungus. Among their advantages are partial immunity from black knot and leaf blight and often a partial freedom from curculio injury.
13. Altogether, the Japanese plums constitute the most important type of fruit introduced into North America during the last quarter of a century, and they should receive careful tests in all parts of the country.

How to Get Sound Apples.

D. W. Coolidge, secretary of the Fruit Growers' Society of Lane county, Oregon, reports to the *Rural Northwest* that, as a result of thorough spraying, his apple crop the past season was fully 96 per cent sound and free from worms or scab, while his neighbor who did not spray, but had trees of the same age and kind on similar soil, did not harvest over 40 per cent of sound fruit. Mr. Coolidge sold his apples in the cellar at an average price of 77 cents per box.

He sprays his trees as soon as the leaves fall with a solution of concentrated lye, one pound of lye to four gallons of water. In February he sprays the trees with the Bordeaux mixture.

Just after the blossoms fall, he again sprays with a combination of the Bordeaux mixture with soap and Paris green. Every three or four weeks after this he sprays with a wash prepared from Paris green, soap and lime, doing the last spraying about the 1st of September.

In preparing the Bordeaux mixture for the February spraying, Mr. Coolidge uses two ounces of blue vitriol and two ounces of lime to a gallon of water. He dissolves the vitriol in hot water and slakes the lime in cold water. The vitriol solution must be allowed to get cold before the lime is added.

For his spraying immediately after the blossoms fall, he uses the ingredients in the proportion of three pounds of blue vitriol, three pounds of lime, three pounds of good hard soap and four ounces of Paris green to 50 gallons of

water. For the subsequent sprayings he uses the same with the exception of the blue vitriol.

In addition to spraying, Mr. Coolidge wraps his apple trees with strips of burlap and kills the worms of the codlin moth which accumulate under these strips every ten days.

FLORIST AND GARDENER.

Other Practices with Asparagus.

Two weeks ago we gave a detailed account of California practice in asparagus growing by a Los Angeles county grower. Southern practice, described more with reference to the needs of the small grower, is the following by Prof. W. F. Massey of the North Carolina Experiment Station. It will be found interesting and suggestive in this State:

There is no one matter in gardening in which an amateur more commonly fails than in setting an asparagus bed, unless it be in his attempt to grow mushrooms—while both are perfectly easy when done properly. While an asparagus root in the dormant conditions can hardly be killed by cold, wet or drouth, my experience is that there is no plant gotten from nurseries that is more commonly injured in transportation by careless packing. When once the roots are heated in a close package, they are worthless for planting. I once lost a shipment of 30,000 Conover's Colossal roots, when they were worth \$10 per 1000, through the reckless packing of them in masses in large tierces. If asparagus roots are to be bought from a nursery, always buy from some one who has a reputation to sustain for careful packing, and get as close to home as possible. But the most perfect roots are often lost by experienced people in planting. They have read that asparagus roots must be set deep in the ground, and thereupon deep down in the ground they bury their yearling roots, and are astonished to see that only here and there a feeble shoot ever reaches sunlight. In my boyhood, the planting of an asparagus bed was one of the grand mysteries of the old negro gardener. He excavated the soil as carefully as an old Scotchman would in planting a grapey under glass, and always paved the bottom with brickbats, stone, or oyster shell. Why he did so no one ever knew, but "dat's de way to grow sparrergrass," and he grew it, too, for his excavated bed was filled with the lightest and richest of compost, and the paved bottom never hindered the shoots from growing upward. But with the development of the great market gardening interests in various parts of the country, came more economical and business-like methods. For many years all markets demanded blanched asparagus, and many places still do, while other places want green and tender shoots. The toughness of the blanched shoots has led buyers in many markets of late years to seek green asparagus, and we will give our mode of growing both the blanched and green. The gardener must, of course, grow to suit his market. If it demands white asparagus, he must grow white of course, and we would note that asparagus that is all white to the tip is more tender than that which has made a green tip and is only white below, while none is so tender as that which is entirely green.

When asparagus is to be grown in quantity, it is always better to start with the seed rather than to buy the ordinary nursery-grown roots. When well grown, one-year-old roots are to be preferred to older ones, but the actual nursery-grown roots are so thickly crowded that most people plant two-year-old roots. I prefer to sow the seed thinly on very rich soil and give careful culture for one season. Such roots are worth double what crowded two-year-old roots of the nursery are, for any mode of subsequent planting. The preparation of the land for asparagus is a most important matter, for the plantation is to last many years, and no subsequent manuring or culture can fully atone for deficient preparation. As to varieties, my experience is that one is as good as another. Fine asparagus is wholly a matter of rich feeding. I can take seed from the wild asparagus and grow as fat stalks as from any named seed. Asparagus being a dioecious plant, and being grown entirely from seed, a purely distinct variety is usually imaginary. The land for the asparagus planting should be light and warm, for earliness is of prime importance. Above all it should be deep and rich. No ordinary farm land can at once be put in condition to grow the best asparagus, no matter how we may fertilize it. Therefore I prefer to use land that has been for years cultivated and manured for market garden purposes, and which has been thoroughly and deeply worked. Having such a soil and plenty of old, rotten manure we may proceed to plant for blanched asparagus, as follows: Run out deep furrows in the well-prepared land, five feet apart, by going several times in this furrow and then cleaning out with a shovel. This must be done as early as possible in spring, or, in this latitude, late in autumn. Put a liberal dressing of fine compost in these trenches and work it with a bull tongue or a one-horse subsoiler.

Now set the roots, spreading them out in their natural position. Draw in just enough of fine soil to cover the crowns an inch or so, and tramp or roll tight with a broad-tired wheel. When the shoots grow, gradually work the soil into the trenches until finally the soil is level. We prefer to cultivate no crops at all between the rows. We should have said that two feet should be allowed between plants in the row. Cultivate clean all the season and flat. Clean off the dead tips at the end of the season, and at no stage of growth allow any seed-bearing plants to mature seed. This not only weakens the plant, but will give trouble from seeding plants. The second season cultivate as the first season, having given a heavy manuring broadcast, or, in the absence of manure, not less than 1000 to 1500 pounds of high-grade, ammoniated fertilizer. The following autumn give a dressing of half a ton per acre of kainit, and manure again late in winter or early spring. As in this season cutting will begin, the first culture, before any growth commences, should consist in plowing the land in sharp ridges over the rows and cleaning out the dead

furrows between, so as to drain all water away. These ridges warm up more quickly than the flat land and cause earlier growth. The cutting should be done as soon as the shoots cut the ground, by running a long asparagus knife down near the crown of the root, and cutting without hurting the adjacent shoots, cutting none that cannot be long enough for the regular bunching machine. The French growers pull the soil away by the hand, and pull the shoots away without cutting, and then return the soil.

To grow green asparagus we do not plant in deep trenches, and we can produce asparagus at an earlier date in the season, because the roots are nearer the surface. Our practice is as follows: We sow the seed thickly—preferably in autumn. The land being well prepared, lines are marked out on the level surface and the young plants are transplanted with a dibble as soon as they are about as long as one's finger. These young plants can be set very rapidly, and they live and grow off as readily as any other spring plants. We set them rather closer in the row than when planting roots in trenches, say 18 to 20 inches apart. Cultivation is perfectly flat. I once had asparagus fit to cut the next season by this method, but it is better to defer any cutting until the second year, and this will be a year ahead of roots set in trenches. These roots all ramify near the surface. To my taste this is by far the best asparagus, and wherever buyers get accustomed to it, they no longer want the blanched article. The planting of such a bed is a matter of far less cost than the old method. Of course the bunching always is done by a machine, making uniform bunches, and it is unnecessary to describe it here. But many growers injure the sale of their asparagus by using poor ties of twine or old rags. Always use the flat ties of bass bark or Raffia, and always put two ties on a bunch. Cut the butts square and pack in crates just deep enough to stand the bunches on a bed of fresh moss or grass.

Late Crops of Potatoes for Seed.

It is sometimes said that "it is always best to go north for seed unless living in the extreme north ourselves."

That is just what was formerly believed, but you cannot make a southern potato-grower of experience agree to any such thing now, for they all know that home-grown seed from the late fall crop of the previous season is invariably best for spring planting. No southern grower ever uses a northern potato now unless it is impossible to get the home-grown potatoes. More than this, growers north are beginning to find out the superiority of these southern-grown seed for spring planting, and there is a strong movement of southern seed potatoes northward. Seed potatoes have been sent in carload lots this winter as far north as Michigan for spring planting. These fall-grown potatoes are ripened so late that they never sprout in winter, and their growth is made from a strong terminal bud and a full food supply. Planted whole, one strong shoot takes the lead and the result is large potatoes. We find also that there is no deterioration because there is no growing from weakened seed. One market gardener in the South told me that he was using his seed potatoes the eleventh year from the original stock, and found that they are better than he can get from the North. Farmers too far north to make the second crop for seed may be benefited by changing seed from a locality where the seed matures later in the fall. They can do this by sending either north or south. Potatoes of spring planting in the Middle States, kept over for seed the following spring, will deteriorate; but from seed ripened late in fall, they will not, and a southern grower who understands his situation has no need for sending anywhere for seed except to test new sorts.—W. F. Massey.

CEREAL CROPS.

The Wheat Problem.

Continuing the discussion of the cost of the wheat crop in various parts of the world, concerning which we have made several references lately, we give portions of an article by Henry Stewart, a prominent Eastern agricultural writer, in the *Country Gentleman*. Mr. Stewart does not see the prospect which some enjoy that our wheat-growers will soon reap richer rewards because our population will soon be so large that we shall eat all our own wheat. It is to this view that he refers in his opening sentences:

We have not yet found the lowest price of wheat, for since the remarkably optimistic prognostications of your Kansas correspondent about a year ago, the market values have been continually decreasing until at the present time a price that was thought impossible has been reached, and every indication is tending to still lower prices, until the lowest cost at which wheat can be produced with a satisfactory profit to the business growers, who employ large capital in their enterprises, has been found. And it seems from the evidence at hand that this limit will not be far from 50 cents a bushel laid down at the ultimate market in England, for this is the market by which the value of all the wheat in the world is fixed.

Then instead of farmers looking forward to the good time coming—which has been promised any time these forty years past, when the old song was first sung in our ears—in which wheat would sell for \$2 a bushel, we must look forward to a rapid diminution in the value of this grain, until the price is named at which it can be produced with some profit upon the vast plains of Argentina, now looming up on the horizon as one vast wheat field covering 240,000,000 acres of fertile land, in a fine climate, the total product of which may be not less than the vast quantity of 3,600,000,000 bushels, or more than the whole product of the world to-day. But in addition to this, all the great Northwest will be growing wheat at the same price; for there, too, will be found ample room and fertile land

enough to produce nearly as much as the broad plains of South America.

And these figures are supported by the best of evidence given by an English writer in an exhaustive article written for a leading Chamber of Agriculture in England, and reported in *Bell's Weekly Messenger* of January 1. These figures have been gathered by the writer of that article from prominent authorities in every large wheat-growing country in the world. And in all of them the possibility—nay the certainty—of still lower prices seems to be foreshadowed, if not assured, in a very short time, for the last serious drop in prices has been caused by the first considerable exports from Argentina, consisting only of the comparatively insignificant quantity of 20,000,000 bushels in 1893. This is a substantial proof of the weakness of the market by reason of oversupply, and this in spite of the falling off of the products of not less than 100,000,000 bushels for the year, elsewhere.

The market price of anything is based on the cost of producing it. Everything, from a shoe peg to a diamond, is thus valued in the markets of the world. This is self-evident, for the producer of anything of value must sell it to live. And if there is any difficulty in thus disposing of it he will reduce the price, if it is possible, down to the very cost of production rather than miss a sale of his goods. And the price is fixed for the whole stock at the lowest figure offered by the most eager seller. Then the farmer who can produce his wheat at 25 cents per bushel will sell as near this figure as he can get a profit. Thus the product of the whole world is valued at something more than the cost of the cheapest part of it. And if any country can grow it at 50 cents a bushel delivered at the place of sale and consumption, that will inevitably regulate the markets of the world, when, as is now the case with England, that place of consumption is the largest purchaser in the world, and is drawing supplies from every other wheat-growing country. And to show this fact in extenso the following table is given:

IMPORTS OF WHEAT INTO GREAT BRITAIN, 1892-93.

From—	Bushels.
America.....	121,711,448
India.....	10,525,296
Russia.....	16,163,200
Austria.....	4,401,424
Australia.....	5,121,323
Chili.....	3,098,423
Argentina.....	11,170,440
Various places.....	624,200
Total.....	172,815,754
Home-grown wheat.....	56,000,000

No other country occupies this prominent position as a purchaser of wheat and other grains. Thus it is the market by which the prices of the world's harvests are fixed, and as every country having a surplus is competing in this market, the values of the grain are made there for every exporting country; and as a merchant's business is to learn and know everything relating to his markets for purchase and for sale, and the actual cost of what he buys—and he will naturally give as little more than this cost as he can, and less if circumstances are in his favor—it must follow that the English importer of wheat will offer no more than the cost of the grain and as little profit to the grower as he can be induced to accept; and as the cheapest or the most impecunious producer will sell the lowest, his price fixes that of the whole stock offered for sale. This should be clearly understood as being the immutable law of trade and commerce, and operating everywhere and with everything at all times.

Now, then, what is the lowest cost at which wheat can be produced in the world?

The writer referred to begins with Kansas. From that State, he has information from one extensive producer that wheat may be grown at 25 cents a bushel, all above that being the grower's profit. Another extensive farmer in Kansas says that he can deliver wheat in England at the present price of 80 cents a bushel, with a very satisfactory profit. Now, I find the transport of wheat from Emporia in Kansas to Liverpool, England, is 25 cents a bushel, thus to a great extent corroborating other statements to the effect that it is possible to lay down wheat from Kansas in English markets at 16 shillings the quarter of eight bushels. This is equal to \$4 of our money.

But in Kansas a farmer has to pay a considerable price for his land, while in Dakota and the Canadian province of Manitoba adjoining, the land costs practically nothing, and with \$500 a man can make a start as a wheat-grower, and as stated in the article referred to, become rich in a few years growing wheat at 25 cents a bushel. And a trustworthy journal, the *Northwest Farmer* of Winnipeg, after interviewing several large wheat-growers, states the actual money outlay for a bushel of wheat to be not more than 10 cents, or for a crop of 25 bushels an acre, the exceedingly low sum of \$2.50 an acre. This counts only the actual cost of the work. The product of Kansas, Nebraska, Dakota and the Canadian Northwest is quite sufficient to fix the value of wheat in the British markets, without counting other great producing countries.

But the same story comes from them. In Russia, the area of the best kind of wheat land may be increased ten times its present bounds, and here the low condition of civilization and the fertility of the land go to reduce the cost of grain to certainly as low a limit as on the American Continent. In India the same circumstances prevail, and in the vast plains of Argentina in South America the same story of great undeveloped resources and highly satisfactory profits, even at the outset of the business, is told by unquestioned evidence. There the English capitalists, who have gone into wheat-growing on a large scale, report the profits at 33 per cent at the present prices, and are certain that even at the low price in England of 16 shillings (equal to \$4) a quarter, or 50 cents a bushel, the business can still be carried on with profit. Both there and in India the pay of the workman is almost ridiculously low. The average is \$1.25 a month—about equivalent to a day's wages of an American farm hand! The American farmer may well

ask in the words of the never-to-be-forgotten Congressman: "Where am I at?" It is time he studied out his present reckoning and finds his bearings on this clouded sea upon which no spark of light seems to give a direction for his course.

POULTRY YARD.

An Eastern Plan of Poultry Housing and Feeding.

An Eastern poultryman who proceeds upon what is described as "a scientific and rational" basis, gives his experience in the *Rural New Yorker* as follows: My present feeding mixture consists of 8 bushels of ground oats, 4 bushels of ground wheat, 150 pounds of meat scrap, 300 pounds of wheat bran, and 300 pounds of malt sprouts. For 600 hens I take about 50 pounds of this mixture in a water-tight box that sits on the rear end of a buck-board wagon, and pour over it a 40-quart canful of sour milk. The can of milk is set in a box of hot water over night, and in the morning it is hot whey and pot cheese instead of skim milk. The hens eat it greedily, and seem to be thriving on it. You ought to see them pick out the chunks of hot cheese. At night I give them whole grain, either corn or wheat. I question the propriety of giving any whole grain at all in winter. My hens are getting very plump and fat, although they lay reasonably well. I think I shall try keeping some of them entirely on the more bulky food. I cannot always get the skim milk in sufficient quantities. In that case I use hot water to mix the feed.

My colony of small houses scattered about over the farm and connected by a telegraph wire causes lots of comment from passers-by. My man overheard the conversation of four men the other day as they were driving by in a carriage. One of them seemed to be spokesman, and was explaining to the rest that the wire was for the purpose of conveying the eggs down to the house. His companion, happening to spy one of the white porcelain insulators which break the circuit over each building in order to send the current down into the buildings, suddenly grasped the other's arm in great excitement: "Great Scott!" said he, "if there don't come one now!"

But the malt sprouts used are also rich in nitrogen, for while casein has 16 per cent of this element in it, the sprouts have about five per cent, and thus this mixture is, or should be, excellent for fowls producing eggs, and Mr. Mapes—which is the poultryman's name—finds it so to be.

Mr. Mapes is a mechanical genius, too; and it requires a genius—that is, a man who has his wits about him—to succeed in this business. He has an automatic nest, which has a self-closing and opening door, and when the hen goes on to the front of the box the door opens, as if to say, "Howdy, Biddy; walk in," and when Biddy walks in the door closes and prevents any other fowl from entering; then, when the hens get off the nest, the door opens and lets her out and closes again after her. This kind of nest has entirely prevented the loss of eggs by idle hens eating them.

Mr. Mapes also tells how last July, when eggs were selling at 13 cents a dozen, he packed away several barrels of them in common salt, and sold them in October for 25 cents a dozen. The precaution was taken to put away the eggs the same day they were laid.

January 25th my first brood of chickens for the season left the nest with the hen. There were 15 eggs under her, and 15 little fuzzy chicks filled the nest. They were put into a glazed coop in a sunny place, and to-day, two weeks after, they are all safe and lively, taking their three meals a day of corn and wheat ground together and wetted into a thick paste with warm water. They have sweet, warm milk to drink. It is very rarely that I have lost a chick after it has become two weeks old. I am feeding pea-vine clover to my cows and horses, and as there is a good deal of seed in the flowers, which were full blossomed when the hay was cut, the dust from the floor of the mow makes an excellent litter for the poultry house. The seed is eagerly picked out by the chicks, and they have a warm, dry bed to nestle in, and lots of exercise to scratch for the seeds.

THE DAIRY.

Kaffir Corn as a Stook Feed.

The varieties of sorghum known as Kaffir corn have been for several years grown in this State and have succeeded. All may not, however, have heard of these grains and will be interested by the following review by Prof. C. C. Georgeson, of the Kansas Agricultural College:

First, a word as to the varieties of Kaffir corn. We have, for several years, grown two varieties here at the Experiment Station, which from the color of the seed, are respectively denominated white and red Kaffir corn. They are alike in their habits of growth. Both attain a height of five or six feet or more on very rich soil. They both have short, stiff stalks thickly covered with foliage which resemble leaves of sorghum, and both produce a long, slender, upright head, densely covered with small, rounded seed. They differ, however, not only in the color of the seed, but also in the yield per acre and in time of ripening. The red variety has, invariably, been the best yielder at this Station, and it also matures a couple of weeks earlier than the white-seeded variety. Both points are of importance.

While the red Kaffir corn has never been injured by frost, the white variety has failed to mature seed more than once. Moreover, an unduly large percentage of the stalks of this kind fail to push the head completely through the sheath of the upper leaf, and from this cause a portion of the heads thus affected are moldy below, or at best bear but poorly developed seed on the portion covered by the

sheath. This is rarely the case with the red variety. For these reasons I consider the latter sort much the better of the two, although the grain has a somewhat more astringent taste than the white seed. Both are non-saccharine, and in common with all other sorghums, they will stand drouth much better than corn. In a comparison of the two, the red-seeded variety must be given the palm.

Kaffir seed corn is equal to corn in feeding value, and the red variety yields rather better than corn in all seasons, and in dry seasons will produce a moderate crop of seed when corn only produces fodder. It is owing to these combined good qualities that red Kaffir corn is growing more and more in favor throughout the West, and especially west of the Missouri river; and, in my opinion, it ought to be planted much more generally than is yet the case.

A plat of nearly two acres, on which the wheat was winter-killed, was planted to red Kaffir corn here at the Experiment station, late in the spring of last year. A large osage orange hedge ran along one side of the strip and sapped the ground considerably, and it also afforded roosting places to myriads of English sparrows, which latter pest began to devour the seed as soon as it was fairly out of the milk; but with these drawbacks we still raised 110.6 bushels of clean seed, at 50 pounds to the bushel, or at the rate of 56.7 bushels per acre, besides nearly three tons of cured fodder, of fine quality, per acre. Corn in the same field yielded just about half as much, both of grain and fodder.

It should be mentioned in this connection that Kaffir corn seed ripens before the leaves ripen, and that, consequently, the crop can be left undisturbed until the seed matures, when the fodder, being still green, can be cut and cured.

Corn, on the other hand, must be cut before the grain is fully ripe, if a good quality of fodder is wanted.

Kaffir corn is best grown in rows 30 inches to three feet apart, and can be sown either with a sorghum drill or with a common wheat drill. We use, successfully, an eight-hoe press drill, on which all except the first and fifth hoes are closed up. We then seed two rows at a time, 32 inches apart. A little practice will soon show how the drill must be set in order to sow the right quantity of seed. If it comes up too thick it must be thinned. Good heads will be formed when the stalks are about four or five inches apart in the row. In all other respects it should be cultivated like corn.

The National Dairy Congress.

Agreeable to the call of the Committee on Permanent Organization that was chosen last October at the World's Fair, there was recently held in Ohio a meeting for the general organization of dairymen, which resulted in the formation of the National Dairy Congress with the following constitution:

ARTICLE I.—This association shall be known as the National Dairy Congress.

ART. 2.—The object of this Dairy Congress shall be to promote the dairy interests of the United States and elevate the standard of all its dairy products.

ART. 3.—This Dairy Congress shall be composed of two delegates from each State dairy association and one delegate from each experiment station carrying on dairy experiment work; provided that in those States where no State dairy association exists, the Governor may appoint two delegates who shall be practical dairymen.

ART. 4.—Each State dairy association may appoint two delegates for the next annual meeting, one for one year and one for two years, and each year thereafter appoint one for two years.

ART. 5.—The annual dues shall be twenty dollars for each State dairy association, and ten dollars from each experiment station, to be used for the expenses of the Dairy Congress.

ART. 6.—Its officers shall consist of a president, vice-president, secretary and treasurer who shall constitute the Executive Committee.

ART. 7.—The president shall preside at all meetings, and in his absence the vice-president shall be the presiding officer.

ART. 8.—The Executive Committee shall have power to transact all business not done at the annual meetings.

ART. 9.—In all meetings each State representation shall be entitled to three votes, to be cast by the delegates present.

The Committee on Organization and Nomination made their complete report through their chairman, Henry Talcott. The committee reported the nomination of Henry M. Arms, Springfield, Vt., for president; John F. Hickman, Wooster, Ohio, vice-president; D. P. Ashburn, Gibson, Neb., secretary; C. L. Gabrilson, New Hampton, Iowa, treasurer. The report was adopted.

SHEEP AND WOOL.

What a California Grower Thinks of the Situation.

There are not less than 30,000 people in California who make their living directly from some branch of the wool industry, and our 4,083,541 sheep help to make cheaper and more convenient meat. In the year 1876 we had 56,550,973 pounds of wool, but the reduction of the tariff in 1883, the hostile attitude of Congress since and consequent low prices, reduced us to about 33,000,000 pounds last year. I am now writing from Red Bluff, the county seat of Tehama county. About the year 1876, and on up to '83 and '84, there were grown in this county and sold in Red Bluff about 6000 bags of wool a year, which means about 2,000,000 pounds, and we had nearly 400,000 sheep. On account of low prices for wool the past few years, which we attribute to the tariff reduction of 1883 and subsequent agitation of

the question, some men have been put to the wall, others have sent their flocks to the slaughter-houses and embarked in other pursuits, many of which are already overcrowded; and, as a result of this decline, we now have in this county less than 200,000 sheep.

Should the Wilson tariff bill pass, become a law, and put wool on the free list, California, as well as the balance of the United States, would in a very few years be out of the sheep business, and give that great and important industry over to South America and Australia. I have not time here to compare the difference in the expense of raising sheep and wool in the United States and those countries, but it is believed by nearly every intelligent flock-master in the United States that we cannot possibly compete with South America and the Australian Colonies in this industry, and that with free wool we must quit the business. With free wool sheep will cease to pay running expenses, flockmasters will become discouraged, their sheep will be neglected and their flocks go to ruin. Nothing will go to destruction surer or faster than a band of sheep, when not studiously guarded and cared for. They are timid, and everything is a prey upon them. The wild animals and our neighbors' dogs are after them day and night, and on account of the numbers together they are more subject to disease than other animals. Should this business be once destroyed (and free wool I think will do it), Australia with her 125,000,000 sheep and South America with her 80,000,000 will raise the wool, England will manufacture the greater part of it, and the rich alone of this country will be able to wear it. If this industry is once destroyed it would take many years, even under the most favorable tariff regulations, to build it up again.

These are my honest convictions upon this subject, after careful thought and years of observation and experience in the business, and I believe I voice the sentiments of all my neighbors. I own thousands of acres of land, and so do my neighbors, upon which we run sheep exclusively, and we are alarmed at the aspect of the tariff question. I own 12,000 sheep; my neighbor north has 10,000; the one west 4000; the one east 3000; the first one just south of me 35,000; the next one south 14,000, and the next one 20,000. This tariff question is of much concern to us. We have invested thousands and thousands of dollars in grazing lands, and have devoted our energies to the business. We are deeply interested in this matter, have laid sentiment and politics aside, and honestly, candidly and frankly believe that free wool will ruin our business, and give it to South America and Australia.—Leo L. McCoy in American Sheep Breeder.

The Rambouillet Merinos.

California has long had a share in the French Merino blood which is now becoming popular. We have alluded several times to this predilection for the French breed because of superior size, in addition to fine wool points. A meeting of Rambouillet breeders was recently held in Michigan, and the address of the president, Hon. Henry Grinnell, gives a very interesting account of the present condition and the cherished prospects of the breed. We quote as follows:

We are here to-day from the various States of our great commonwealth—from New York on the east and California on the west—to examine the present, and as far as possible the outlook of this great branch of American industry which we represent, known as sheep husbandry in the United States.

To see so many of you present is a most favorable indication of manifest interest in the Rambouillet sheep, or as Superintendent Garland called them at the World's Fair, "Elephant Merinos." The exhibit of these sheep at the Chicago Exposition gave the sheepmen of the United States an opportunity to see for themselves these immense Rambouillet mutton and wool-producing sheep. I do not wonder at the surprise manifested by those who had never before seen these sheep. I am not surprised at their expression "Elephant Merinos," but it was no surprise to me, as I had seen much larger sheep in the flocks of Baron von Homeyer and Dr. Nathusius of Germany, and Victor Gilbert, Romain Roger and Cugnot in France. I am more than pleased to have so many favorable comments on the good qualities of these sheep and to know that the best judges in the world have spoken so highly of their great mutton qualities and immense fleeces of the finest wool in the world. You have the satisfaction of knowing that you advocate conscientiously and are producing the best known sheep for both mutton and wool, and some of you have been doing this for the past 25 years with most gratifying success and have made a fortune by persevering in the right direction in a worthy cause. Our sales in 1893 have been fully up to the average of years past and prices have been well sustained.

The rams Baron F. von Homeyer exhibited at Chicago sold at prices varying from \$150 to \$500. His sales in South America this year averaged \$800 (I presume in their currency).

The agitation of the tariff does not seem to have any perceptible effect on the sales of these sheep. Free wool is a certainty, and the sooner it comes the better. We will no doubt have to sell our wool at low prices in 1894, because the doors will be open to the world to come here and sell their wool in our markets, and as the wool-growers of Australia, South Africa and South America can produce wool at half the cost we can produce it for in the United States they can certainly undersell us in our own market. But while this affects men who raise sheep for wool only, it is neither here nor there with us.

In my address to you last year, I said sheep raising east of the Rocky mountains, to be profitable, must be in the line of a mutton sheep. If I could say that in 1892 I can say it now with increased emphasis, and you can see the point now as well as the men who breed sheep for wool only. France, Germany and the United States, in the highest degree, must combine both wool and mutton. Then

If wool is at the front you have the wool and if mutton is at the front you have the mutton.

The French and German barons and marquis, with their immense landed estates, men educated to the highest degree in sheep husbandry as well as literature, take great pride in their immense flocks of Rambouillet sheep, and will keep nothing else. They will have the best mutton in the world and the best wool, and often have 200-pound ewes and 300 pound rams of the Royal Rambouillet breed, noted over all other breeds for their nutritive capability.

The demand to-day is for a mutton sheep, and the Merino is the best feeder of any breed. This is why so many breeders of the small Merino type prefer a Rambouillet ram to use on their flocks to one of the English races—the lambs being superior as to quality and quantity of wool and equal as to early maturity and feeding qualities, and superior as to size and quality and quantity of mutton. The mass of the people do not know much about Rambouillet mutton; they don't know that the sheep have more meat than any other breed where the choicest meat lies. If we will produce more extra good mutton, the people will find it out and will use it instead of so much beef and pork. But I do not say of this breed as the South-down man did of his favorites at Chicago, "the Southdown is gold, all else is dross." There is room for all breeds in this broad land.

I am more than anxious to have you so feed and care for your rams that when sold they will not decline in the hands of the buyers. I hear some complaint of this in other breeds. Sell no cull rams. I speak of this as you will be tempted to do this, for the demand is above the supply and will be for some years to come. Make sales so you can always sell again to the same parties. I like to hear from those I sell to such replies as these: "I am much pleased;" "Your rams are way beyond my expectations;" "I am highly pleased, send me ten more immediately;" "We shall want another carload next season," etc. The call is usually for plain rams—no wrinkles, smooth bodies, sheep well wooded to the nose and to the hoof, a long staple of well-crimped, fine wool, very compact—in fact, a great big mutton sheep with all these qualities.

I suggest that at shearing time in 1894, you all weigh your sheep before shearing, giving weight of sheep, weight of fleece, age of sheep, and age of fleece in days, length of staple, crimp, fineness, compactness, etc., and report the same in some of your leading State journals, and especially in the *American Sheep Breeder* of Chicago, and, in fact, all of our leading farm papers. This will let us all know what you are producing. You will have a record of what your flock is doing, and you will know just how to breed your sheep, and you cannot do that correctly without your record. You can breed to a certainty if you will, and produce just what you want. Your lambs should show flesh direction at birth. Breed to this end. Use standard rams of 300 pounds if possible, but do not sacrifice character and quality for size of animal. The best French and German breeders have a director to select the rams for coupling, and over them is a director in chief, so no mistakes can occur and some breeders will not use a ram that weighs less than 300 pounds. They use great skill in selection and mate as few ewes with ram as practicable. This is scientific breeding. Each breeder keeps a secretary to accurately record all proceedings in the minutest detail, so that each sheep is described separately and each family also of the 5000 or 10,000 sheep kept on the estate. Mistakes cannot occur, as their methods are very severe so that the animals must be absolutely pure.

Always try to combine the strong points or qualities of the rams, so as to remedy the weak ones in the ewes and produce perfect lambs. Breed for great nutritive capability, a broad back, shoulder and hips, evenness the entire length of the body, a well-rounded rib, large bone, broad chest, great lung capacity, a perfect covering of very fine, long, silky staple of wool, a good crimp and very dense. If we keep up our breeding to this standard and at any time have sufficient surplus, we can send to South America at remunerative prices, but it will be some years before we will be able to do this, as free wool will force all Merino breeders to breed for mutton as well as wool, and many Merino men will not resort to the sharp and undesirable cross of English blood. Do not resort to hot-house treatment and thus destroy the great vigor and hardness of the breed.

Free wool may do good. It certainly will increase your sales. Hundreds of American Merino breeders are calling for Rambouillet rams, as we have shipped this year to New York, Pennsylvania, Ohio, Indiana, Illinois, Montana, Missouri, Nebraska, Kansas, Texas, New Mexico, Arizona, Washington, California, North and South Dakota, Minnesota and Wisconsin, besides our Michigan sales, and I presume you men from other States have done the same. Do not be alarmed at free wool. We have a great demand at home for mutton. It is increasing. The cattle supply is decreasing. The pork supply is decreasing. The mutton will all be needed. If it becomes cheaper our suffering poor will be able to know how it tastes. It will do them good.

Hundreds of thousands of bushels of corn and wheat can be fed out profitably this winter, and thousands of tons of hay, in fattening sheep, and keep the fertilizing qualities of the same at home instead of sending it abroad. A few cents less per pound for wool can be more than offset by an increase of a few pounds of mutton.

"The survival of the fittest" will be manifest in all breeds of sheep under the search-light of free wool. I congratulate you on the outlook for Rambouillet sheep, and that you will have abundance of both good mutton and wool.

THE work of the international boundary survey on the Mexican border is progressing well. It is thought that all monuments will be in place by March 20th, from El Paso to the Colorado, and that the entire work will be complete by July 1st. The Mexican engineers are some distance in advance of the American force. The greatest variation between the line as run by the Americans and that of the Mexicans was but 18 inches.

SWINE YARD.

Wet Feed for Hogs

The Oregon Experiment Station at Corvallis recently carried on an experiment with a view of throwing some light upon the comparative value of wet and dry feed in fattening pigs. Questions regarding the merits of these methods have often been asked by the farmers of this State, hence the work was undertaken for the purpose of assisting at least in solving the problem. Indirectly, this experiment will throw some light upon the question of pork production as a source of profit to the farmers of Oregon.

Conditions of the Experiments—Four well-bred Berkshire pigs were purchased when about four weeks old for this feeding test. The feeding was begun July 1, 1893. The pigs were 2½ months old when a record of the food began to be made, and they were weighed from this time at regular intervals of two weeks.

There was only three pounds difference in the weight of the pigs placed in each pen at the beginning of the experiment. The pigs were of the same litter, and a sow and barrow were placed in each pen.

Previous to the experimental feeding, the pigs were fed on slops from the kitchen and shorts added, as they required. No special effort was made to crowd them, but simply to keep them in a vigorous growing condition.

Pen No. 1 was fed on slops from July 1st to September 5th, at which time the food was changed to chopped wheat, oats, bran and shorts, one-fourth each by night. At the time the change was made, the pigs were very weak on their feet. They were loth to stand long enough to eat their feed. Soon after the change was made, the difficulty disappeared and no more trouble was experienced during all of the time the animals were fed.

Our conclusions were that the slops and shorts did not furnish enough bone-forming substances; or if such substances were present, the animals were not able to assimilate a sufficient amount to strengthen the bones of the limbs.

All of the food given to the pigs in pen No. 1 was given to them dry, and the water was placed near by in a separate trough. Fresh water was placed in the trough every time the pigs were fed. The pigs in this pen drank more water than those in pen No. 2, including the water used in wetting the feed.

Pen No. 2 was fed on the same kind of food, and under exactly the same conditions as pen No. 1, except each ration was thoroughly wet with cold water, and allowed to stand from one feeding-time to the next. The amount fed was governed by the appetite of the pigs. Each lot was given all they would eat, without leaving the food to stand in the trough too much. Every ration was weighed as it was fed. The food was placed in the troughs at eight o'clock in the morning and at five in the evening. These hours of feeding were strictly adhered to, for we believe that the best results in feeding any kind of stock can be realized only when regularity in the feeding and care of the animals prevails.

Charcoal and ashes were placed in the pens two or three times a week as required. The pigs were permitted to run in small yards, which were connected with the pens.

Results.—From the outset, the pigs fed on the wet feed seemed to relish their food better than those fed on dry. Seemingly, it did not require so much effort on their part to eat their ration as it did the dry-fed lot. The pigs fed on wet food would eat their feed in much less time than the others.

In tables showing results by periods of two months each, it is shown that, during the first period, pen No. 2 gained 16½ pounds more than pen No. 1 upon 7½ pounds less of food. During the second period, shown in table No. 2, the gain is 21 pounds, but at the expense of 87½ pounds more of food than that consumed by pen No. 1. Yet, during this period, the amount of feed required to make a pound of gain is not as large as that required in some experiments where corn was used as the principal food material. In the third period, or during the last two months, pen No. 2 made 35 pounds more gain than pen No. 1 and consumed 122 pounds more of grain. One of the pigs in pen No. 1 did not make as good gains as the other by 44 pounds. This pig seemed to drop off in the amount of food eaten, and from all indications it had passed the point of profitable feeding.

By averaging the several periods, we find that it required 4.64 pounds of food to make a pound of gain in live weight in pen No. 1, or the dry-fed lot, and 4.46 pounds in pen No. 2, or those fed on wet food.

Both of the results are more encouraging than any we have reached before in our feeding experiments. They are such as to insure a profit in feeding grain to pig at the present prices paid for pork and grain products. We take it for granted that the grain is fed to good animals, and in a judicious manner. By judicious manner, we do not mean that the grain should be fed whole in an open yard on the ground or in the mud. Such conditions never prevail in Oregon, but they do occur in some of the neighboring States, it is safe to venture, and possibly in some of the Eastern States.

The pig appreciates good quarters, and will pay for such accommodations in an increased product just as quickly as any other breed of live-stock.

These figures would indicate that Oregon can successfully compete with the corn-growing States in producing a supply of these products sufficient at least to meet the demands of her own markets. And may she not supply the markets of this coast that are now supplied from States east of the Rocky mountains?

Lard has retailed in the markets of Oregon, during a large portion of the past year, at from 15 to 17½ cents per pound. Wheat has been selling at from 45 to 60 cents per bushel. A bushel of wheat, as shown in the first part of

this report, produced over 12 pounds of gain in live weight. We will leave the reader to draw his own conclusions.

In the table giving the summary, the cost of the food to produce a pound of live weight is given. In these figures, shorts have been reckoned at \$18 per ton, bran \$14, oats 30 cents per bushel and wheat 45 cents. Shorts at the present time are quoted at \$16 per ton.

Pen No. 1 consumed 1142½ pounds of shorts, 197 of bran, 323½ of chopped oats and 459½ of chopped wheat. Pen No. 2 used 1215½ pounds of shorts, 210 of bran, 368 of chopped oats and 526 of chopped wheat.

There is a fraction of a cent in favor of the wet feed in the cost of producing a pound of gain. At the end of the first two months, the difference in favor of the wet feed was much greater. As the feeding progressed, this difference gradually became less, on account of the increased amount of material eaten by the pigs fed on wet food. While there is not much in favor of the wet food, on the ground of economy as a whole, yet there is a marked increase in the growth and weight of the pigs in favor of this method.

Who Has Duroc Swine?

TO THE EDITOR:—We would like to know where we could get a Duroc or Jersey Red pig. I do not see any advertised in your paper. RUFF BROS.
Paskenta, Cal.

[Breeders of swine of all desirable breeds should certainly advertise their stock in the *RURAL* these days. Experienced breeders know that it is impossible to extend their enterprises without due attention to letting people know what they have. Just now, in view of the wide interest in swine, it is especially desirable that swine-breeders should come forward in our columns. Meantime, let any one who has good Duroc stock write to our correspondents.—ED.]

TRACK AND HARM.

The Trotting-Horse Business.

"The trotting-horse business is on its last legs," was a remark frequently heard early this winter, when at the first combination sale of trotting stock standard-bred colts and fillies, aye, and even brood mares, in foal to standard-bred sires, whose service fee ran well up into three figures, were knocked down like so many sides of beef, almost at so much a pound. Fortunately, the men who cannot look behind the fact that standard blood is selling for one-fourth what it would bring three years ago, are only an insignificant minority among the thousands who are engaged in the business. The pessimists are ready to howl unless the average speed of the trotter is continuously on the increase, unless service fees for young and untried stallions keep ever on the rise, and unless standard breeding, no matter how poor or undesirable an animal it is wrapped in, sells for about four times what it is worth.

While these calamity mongers see nothing except ruin impending over the whole range of interests connected with the trotting horse, says the *New York Tribune*, the majority of the men so interested are beginning to appreciate the fact that what is called the "slump" in prices is only the inevitable tendency of all business to gravitate toward a paying basis. The time is gone by, probably never to return when men would give enormous prices for colts for the reasons which induce others to pay large sums for certain paintings—the glamor of a name. To cite an instance:

Arion trotted a mile in 2:10¾ as a two-year-old and was at once purchased by a wealthy breeder at a price which now seems fabulous. A few months later the yearling brother of Arion was brought into the sale ring, and without being unblanketed was readily disposed of at \$25,000, simply because he was a relative to the phenomenon. Other stallions with more or less pretention to fame have been secured for farms in different parts of the country by such a large investment of capital, that only a proportionately large service fee or inflated prices for the produce can bring any profitable return.

At the present time stock bred in winning lines, stallions which have representatives in the fast list, and brood mares which are producers of performers are being auctioned off at prices which are heart-breaking to the "inflationist" and discouraging to the man who got into the business when prices were up, but which are sounder and healthier, and which in a season or two will bring a new set of breeders to the front. These are the men who will be able to sell their farm produce at the level of values of to-day and see a profit.

So it comes to pass that there are two sets of breeders in the trotting-horse business—the men who bought their foundation stock at unbusinesslike values and wince every time a colt or filly is knocked down at its real value, and the men who have the same or just as good blood, bought at a reasonable figure, and to whom the present average price is, if not entirely satisfactory, at least encouraging.

An eight-months-old filly sold for \$750 at auction in this city two weeks ago. If it had been by some good sire whose fee is \$100 or \$150—and there are dozens of them in the country standing at that money—this price would have been hailed as remarkably good. But it so happened that the youngster was by Arion, whose service fee was \$2500, and this takes no account of the value from the dam, a daughter of Director. The calamity mongers cast up their eyes and lifted up their voices and wailed: "What a shame! What is the business coming to, any way? Why, there's a filly that should have brought at least five times as much." Why? Because the owner of the stallion had to charge five times the value of that stallion's service in order to see a return of his capital. Or because the owner of the mare was sanguine enough to pay the sum and take odds of about 1000 to 1 against getting a world-beater? The filly may be

a prize even now, but who has the prior claim to that increase in value? Most certainly he who risked \$750 on a baby, and who will take all the risks, chances and expenses until she is old enough to stand the race track.

Four years ago, in the flush times of the business, when bidders at an auction would fall over one another in their anxiety to bid up some "gilt-edged" pedigree with a good, bad or indifferent animal, they took all chances. John H. Shults bought the five-year-old mare Nehushta by Stamboul, 2:30 at four years old, for \$5500. In the fall of that year Mr. Shults sold some of his stock at auction, among them this mare. J. W. Daly, of Mount Kisco, a breeder like Mr. Shults, who can afford to buy his experience, and like the owner of Parkville, profit by it, secured Nehushta for \$6100, and most people thought the business was in a healthy and flourishing condition.

But was it? Where is Nehushta now? Back in the Shults barns, purchased at the late sale of some of Mr. Daly's horses for \$675. Mr. Daly's catalogue does not disclose the fact that during the four years which Nehushta was at Mount Kisco Farm she produced anything; neither has she won any money or reduced her record. If she should bear a few foals at Parkville the genial owner should see a profit; and it is just here that the encouragement to breeders at present prices comes in.—Kentucky Stock Farm.

AGRICULTURAL SCIENCE.

What the Experiment Stations are Doing.

We have in current agricultural literature so many illusions to the work of the Agricultural Experiment Stations maintained by funds from the U. S. Government that it will be for the public interest and benefit that a comprehensive and carefully prepared statement of what these institutions are doing and may do should be published. Such a statement has been prepared by J. H. Brigham, Leonard Rhone and John Trimble, Legislative Committee of the National Grange, from which we quote as follows:

I.—THE SCOPE AND VALUE OF THE WORK.

An experiment station is an institution for the promotion of knowledge.

Its purpose is, in the terms of the Hatch Act, to "acquire and diffuse useful and practical information * * * on subjects connected with agriculture."

It is essentially an educational institution, and its benefits are as general, as diffused and as incapable of exact numerical definition or measurement as those of the common schools.

Its best service to the farmer is to be looked for, not in single brilliant discoveries, but in such an increase of tested and accurate knowledge as shall enable the farmer to conduct his business more and more intelligently and efficiently, and with a greater margin of profit.

The scope of the work of the American stations was well illustrated by the collective exhibit which they made at the World's Columbian Exposition. This exhibit, besides showing something of the laboratory and office work of the station, consisted of nine main subdivisions, covering the subjects of soils, fertilizers, crops, feeding stuffs, animal nutrition, dairying, horticulture, botany and entomology. In each of these subdivisions, selected graphic illustrations of the practical work of the experiment stations were exhibited, the whole exhibit occupying about 4700 square feet of floor space.

There is being issued by the Office of Experiment Stations of the Department of Agriculture a subject index of the literature of the experiment stations. The following is the classification of that index, which shows, by its extent and the variety of the subjects included, that the work of the experiment stations has taken a wide range and covered a great variety of matters of the highest practical importance. It should be added that there are very few subjects mentioned in this classification upon which some work has not been done, and upon many of them the work is very considerable in volume.

1—General Sciences.—1. Physics. 2. Chemistry. 3. Mineralogy, Geology. 4. Botany. 5. Ferments and Fermentation, Bacteriology. 6. Animal Physiology. 7. Zoology (including Comparative Anatomy and Distribution of Fauna). 8. Meteorology, Climatology.

2—Air and Water.—1. Air. 2. Water. 3. Methods of Investigation.

3—Soil.—1. History and Classification. 2. Physics. 3. Chemistry. 4. Tillage. 5. Reclamation and Renovation. 6. Methods of Investigation.

4—Fertilizers.—1. History, Nature, Uses. 2. Farm Manures. 3. Commercial Fertilizers. 4. Experiments. 5. Inspection (Laws and Methods).

5—Plants.—1. Field Crops. 2. Horticulture. 3. Forestry. 4. Seeds. 5. Weeds. 6. Diseases of Plants.

6—Foods.—1. Composition and Valuation. 2. Nutritive Values. 3. Preparation and Use. 4. Food Accessories, Condiments. 5. Beverages. 6. Adulterations. 7. Preservation.

7—Animals.—1. History and General Principles. 2. Breeds and Breeding. 3. Animal Production. 4. Veterinary Science and Practice.

8—Entomology.—1. Beneficial Insects. 2. Injurious Insects.

9—Dairying.—1. History and General Principles. 2. Composition and Properties of Milk and its Products. 3. Changes in Milk. 4. Handling of Milk. 5. Inspection. 6. Butter Making, Creameries. 7. Cheese Making, Cheese Factories.

10—Technology.—1. Milling. 2. Starch. 3. Sugars. 4. Fermented Liquors. 5. Fats, Oils. 6. Textiles.

11—Agricultural Engineering.—1. Properties of Materials. 2. Drainage. 3. Irrigation. 4. Farm Implements. 5. Roads and Bridges. 6. Fences. 7. Farm Buildings.

12—Statistics.—1. History and Organization. 2. Legislation. 3. Equipment. 4. Finances. 5. Bibliography.

13—Miscellaneous.—1. Rural Economy. 2. Agricultural Education. 3. Agricultural Statistics.

There has recently been issued by the Office of Experiment Stations a "Hand Book of Experiment Station Work," containing brief popular statements of the results obtained by the experiment stations in their various lines of work. These very condensed statements, covering the more important subjects named in the classification above, occupy 376 octavo pages. It is impossible to present any-

thing like a complete statement of all this work in a brief space. The following are a few examples, selected from among many, showing what the stations are doing in various directions:

Soils.—The Maryland station has made very elaborate studies of the physical texture of the soil, and of the movements of water in soils, as affected by their texture and other circumstances. The results indicate, among other things, that a large part of the effect of fertilizers is often due to their modifying the relations of the soil to the water, rather than their direct fertilizing value. This work opens up a large field for study, and indicates that we may in future find new means to improve poor soils in this respect as well as in respect to amount of plant food.

The California station has made extensive soil surveys of that State, and has succeeded in working out a method of judging quite accurately the capacity and need of a soil by a combination of physical and chemical analyses, together with observations of its native growth. Professor Hilgard's studies upon the alkali soils of California and the methods of their amelioration, and of the so-called rise of the alkali in irrigated soils, have been of vast value to that State.

The Wisconsin station has investigated the relations of the soil to water. To mention only one phase of the subject, namely, the effect of cultivation, it was found that cultivation should follow just as soon after a considerable rainfall as the tools will work well, for the purpose of finely pulverizing the surface soil; and thus cutting off evaporation from below. If this is not done, the extremely rapid evaporation of water which takes place from undisturbed wet soil on hot, clear days may soon dissipate not only that which has just fallen, but also a part of that which the rain has caused to be drawn toward the surface from the lower levels, and thus leave the ground actually dryer, as a whole, than before the rain. It was found that a tool like the disc harrow or the curved tooth harrows, which cut narrow and comparatively deep grooves in the soil, leaving ridges between them, tends to dry the ground rapidly and completely, while shallow surface plowing, or cultivation which loosens the whole surface of the ground, tends to dry the loosened soil, but to diminish the loss by evaporation from below.

Fertilizers.—The Cornell station has investigated the loss of barnyard manure by leaching and fermentation. Manure handled as is customary on the majority of farms was found to lose from one-third to one-half of its valuable constituents in the course of the winter through preventable causes.

The Kentucky station has found, as the result of its field trials of fertilizers, that in the so-called Blue Grass region the soil is already richly supplied with phosphates, and gives no return when these are applied as manure, while an application of potash salts produces very remarkable results.

In addition to the above illustrations of station work in fertilizers, the work of the so-called "fertilizer control" should be mentioned. In nearly all of the States using commercial fertilizers, the whole or a part of this police duty is in the hands of the experiment stations, and their work in this particular alone has been of great value, not alone in detecting frauds but in preventing, and keeping up the standard of excellence in fertilizers.

Crops.—Work in this subject has been very extensive. The following synopsis shows some of the subjects touched upon in the study of the two important crops, corn and wheat. Under corn we find the following subjects studied: Varieties, crossing, composition, seed, rate of planting, time of planting, method of planting and manuring and cultivation, stripping, topping and detasseling, planting, plowing. Under wheat we find the following list of subjects: Varieties, composition, culture, manuring.

Horticulture.—As an interesting feature of the horticultural work of the station, there may be mentioned the arrangements which have been made with a large number of originators of varieties by which new varieties are tested at several of the stations for one, two and even three years before they are placed on the market. The tendency of this is, first, to prevent poor varieties being placed on the market, and, second, to give buyers prompt information of such varieties as are placed on the market.

The subject of spraying, in its relation to fruit-growing, has received much attention at the experiment stations. Many improvements in methods, materials and appliances have been devised by them, and they have done much to bring about the adoption of spraying by practical fruit-growers.

Plant Diseases.—To mention only a single example under this head, it has been found by several of the stations that the potato rot may be prevented by spraying the plants with Bordeaux mixture.

Foods and Forage Plants.—The experiment stations have done a useful work in the chemical analysis of feedstuffs, having accumulated a large number of these, so that we now know, with a good degree of accuracy, the average composition of American feeding stuffs, and how it differs from that of European ones. They have also done a considerable amount of work upon the digestibility of feedstuffs, so that for a considerable number of these we have average figures applicable to our own conditions.

Perhaps the most prominent of the topics taken up under this head is that of ensilage and the Indian corn crop. The experiment stations have brought very prominently before the farmer the immense value of Indian corn as a forage crop, and have studied in detail the best methods of growing, handling and preserving the crop. In particular, they have studied the relative value of ensilage and field-curing, and have shown just what are the advantages of the one over the other process.

The subject of soiling stock has been studied at two or three of the stations, determinations having been made of the amount of actual food per acre, produced by soiling crops or by pasturage, as well as of the amount of milk and butter produced by them.

Stock Feeding.—The study of breed and individual pe-

cularities of animals as a factor in stock feeding has been a somewhat prominent part of the work of the experiment stations. Several of the stations have carried on quite extensive comparative tests of different breeds of live-stock, either for meat or milk production. Some of these tests are still in progress, but all of them have yielded or will yield material of the greatest value in forming a judgment of the different breeds, because they furnish data which are unbiased in favor of any particular breed, and which, moreover, represent carefully ascertained and recorded facts, and not any one's beliefs or theories.

The most notable and valuable of breed tests is the one completed last summer in connection with the World's Columbian Exposition. While this great test was rendered possible only by a peculiarly fortunate combination of circumstances, and while great credit is due to the authorities of the Exposition and to the Breeders' Associations, it is not too much to say that the scientific part of this test and, to a very great extent, the details of its execution were the work of the experiment stations; and that, without these, it would have been utterly impossible to have conducted the test with anything like the accuracy of minuteness which was actually reached.

To mention a single detail of a different line of work in stock feeding, the experiments by the Missouri, Wisconsin, Kansas, New York and other stations upon the effect of different rations upon the make-up of the carcass of animals—the so-called feeding for fat and for lean—has been of great practical value to the meat producer.

Dairying.—Probably the most important single contribution to this subject has been the invention of the various rapid methods for the determination of fat in milk, and of which the Babcock test—invented by Dr. Babcock of the Wisconsin station—is the best known. This test, which was freely given to the public as a result of station work, has put it into the power of every dairyman to know exactly what his cows are doing, and whether they are kept at a profit or loss. It enables the breeder to select such animals as are good butter producers, and thus to conduct his operations intelligently. It enables the creameryman to pay for the milk of his patrons on the basis of its actual value, and thus conduces to justice and good neighborhood.

Much work has also been done in the way of testing dairy machinery—in particular, different styles of centrifugal separators and in bringing their advantages before the public.

The important subject of bacteria in their relations to dairying has been studied to some extent, and it appears very probable that, in the not remote future, pure culture of different ferments will be used in the dairy as systematically as pure cultures of yeast now are used in the brewery.

Technology.—As a single striking example of work under this head may be mentioned the work of the Louisiana station upon sugar. This includes tests of varieties of cane and of the methods of manufacture. The station operates a small sugar-house of its own, and has demonstrated that the modern methods of manufacture result in a very large saving of material which was wasted by the older processes.

II.—GOVERNMENTAL SUPPORT.

(a) Agriculture lies at the basis of our national welfare, and it is therefore a matter of great public importance that knowledge upon agricultural subjects should be generally diffused, and that everything possible should be done to bring the researches of modern science to the aid of the cultivator of the soil.

(b) This important work cannot be accomplished by the individual farmer—first, because he generally lacks the scientific knowledge and special training required for such investigation; and second, because the business of the individual farmer is not upon a sufficiently large scale and does not yield sufficient profit to warrant him in making costly investigations for his own use; and third, because the nature of his calling is such as usually to leave him little time for such investigations.

(c) The example of nearly every civilized country may be quoted in favor of State support for experiment station work, thus showing a very general agreement as to the propriety and importance for such support. The following approximately correct list of the number of experiment stations in different countries serves to show the extent to which the experiment station idea has diffused itself.

NUMBER OF EXPERIMENT STATIONS IN VARIOUS COUNTRIES.

Germany.....	66	Norway.....	3
France.....	68	Spain.....	3
Austria.....	34	Portugal.....	3
Sweden.....	25	Roumania.....	2
Italy.....	18	Java.....	4
Russia.....	14	Japan.....	1
Great Britain.....	9	Brazil.....	1
Holland.....	4	Canada.....	5
Denmark.....	3	Province of Ontario.....	1

(d) Making the experiment stations entirely dependent upon their several States for support would involve the necessity of action by a large number of different legislative bodies and create a serious risk that the newer and poorer States, which especially need the work of an experiment station, would fail to receive the benefit of one.

Agriculture is certainly of as much national importance as many other subjects which receive national aid, and a small percentage of the amounts annually appropriated for public improvements would pay the expenses of all the stations in the United States. Exactly the same reasons justify an appropriation for these stations as justify an appropriation for the United States Department of Agriculture. Moreover, it should be borne in mind that the present system compels the several States to bear a share of the burden, since they are required to furnish buildings for the stations. In many cases they have actually done more than this; in nearly every instance they have furnished the farm, and the last report of the Director of the Office of Experiment Stations shows that the stations of the United States for the fiscal year ending June 30, 1892, received from sources other than the National Government

\$307,702, or very nearly half as much as was appropriated by Congress during the same period.

III.—GOVERNMENTAL SUPERVISION.

(a) There should be proper supervision on the part of the General Government over the expenditure of the funds voted by Congress. The experiment stations have fully recognized this, and have, through their association, taken official action expressing their readiness for such a supervision.

(b) Supervision of the expenditures on the part of the Government should be so organized as to preserve the initiative of the stations in respect to their work of "scientific investigation and experiment," in order that they may, as required by the law, have "a due regard to the varying conditions and needs of the respective States or Territories."

At the time the Hatch bill was enacted, this matter received the most careful consideration, and it was decided that the best interests of the country would be subserved by the practical autonomy of the new stations, thus securing a system most elastic to the pressure of local needs. Such autonomy could not be maintained if a central authority, dictating details of management and expenditures, were imposed. It was, therefore, deliberately avoided, in full recognition of the fact that some disadvantages might arise from its absence, but with the belief that the advantages would more than compensate.

Furthermore, this initiative should be preserved, because it is a matter of prime importance in original investigation. Such investigations cannot be made in accordance with a schedule laid down in advance; opportunity must be afforded for the individual experience, knowledge and genius of the investigator to have free play. It is to be feared that extension of Governmental supervision, which resulted in prescribing the work to be undertaken by the stations, would result in making them simply branches of the supervising department, and their officers substantially subordinates of that department. Under such conditions, men of first-rate ability would seldom be attracted to or retained in station work.

Respectfully submitted,
J. H. BRIGHAM,
LEONARD RHONE, } Committee.
JOHN TRIMBLE,

FRUIT MARKETING.

Advancing the Raisin-Growers' Movement.

In our report of the recent convention at Fresno for the commercial organization of the raisin interest we noted the fact that local efforts were to be made to win support to the movement. The following from the *Hanford Journal* of last week shows how the matter was presented in that important producing district:

The main question among raisin-growers is whether or not they shall unite to form a Central California Raisin Association. A meeting was held at Baker's Hall on last Saturday, and the question was ably presented by E. A. Adams, secretary of the State Fruit Exchange, and by Frank Rowell of Fresno. Mr. Adams represents particularly the Santa Clara Fruit producers, and is at work with a view of uniting the various fruit districts of the whole State in a common bond of interest. The main object of the State Exchange is to bear the burden of getting information about the quantity and quality of fruit products throughout the United States, and to issue bulletins to all fruit producing people of the State giving them the information as a basis of action in the handling and sale of fruit. This information is intended as a guide to enable local corporations to conduct the business, fix prices and sell their fruits understandingly. This information must come from Michigan, Delaware, Florida and all other fruit-growing States when fruit is raised for the market. It costs money to get reliable information, pay for telegrams, printing circulars, hire clerks and pay postage. By uniting, the fruit-producers can get this information sent to a common center, and have it distributed to them systematically, very cheaply; in fact, it is the only way to do it well and reliably. Mr. Adams' plan is for the State Fruit Exchange to deal with local corporations instead of with individuals scattered all over the State. The State Exchange also seeks to give information and assistance in the matter of buying boxes and fruit-packing supplies. Mr. Adams' estimate of the expense of getting this information is one-half of one per cent of the fruit output, which is to be reached by local associations taking stock in the State Exchange. Mr. Adams says that it takes preparation to sell goods, and, to sell 1000 carloads, much more preparation than to sell 10 carloads. To sell requires time and money to know how; it is a business that men working singly and alone cannot do so cheaply and well as by organization. Do not hire a man to sell for you and then hire money of him. Pay him for his work and make him pay you for your goods. The argument is largely in favor of organization; every phase of it is reasonable; then why should producers hesitate to unite as one man and compel a fair price, and even if the price be low to get that price in money when the goods are parted with.

Mr. Rowell of Fresno spoke briefly and pointedly on the question of packing and selling raisins, which is the all-important one to the people of Fresno, Madera, Kings, Tulare and Kern counties. If these five counties can unite solidly in what is to be called the "Central California Raisin Association," they can govern the substantial output of raisins in the State. Mr. Rowell said if 80 per cent of the growers could be secured the association would be formed; if not, it would be thrown overboard, as there was no use of an association with any considerable number of growers outside to sell at ruinous prices and on consignment to enable brokers and commissionmen to dictate the prices. There were about 30 growers present, and the

meeting seemed to be a quiet one but very thoughtful. Growers seemed to be studying carefully the question as to whether they would go into an association or not. Without an organization things look blue indeed; to join an organization requires an obligation of every member to stand by the terms of agreement, and on this point some feel delicate about tying up what seems to be their liberty in their private business. There seems to be a distrust to a certain extent about an association being able to hold together against the assaults of manipulators outside. This feeling is strongly confronted by the well-known rule of the past that the manipulators will slaughter the business if an organization is not made. Without organization it is a fight in which the producers have no weapons; with organization it will be a fight in which the producers' victory will depend on their ability to stand firmly united to succeed in a common cause.

Florida's Experience in Orange Selling.

The Florida *Times-Union* of the 15th ult., reviewing the causes that are ruining the orange-growers of that State, finds the same condition of things there that makes the raisin-growers of California combine and seek a new method of marketing their crop. The *Times-Union* says:

The orange-growers of Florida are confronted with a very serious condition. The present crop has been sold for just about enough to pay expenses. The commission men and the transportation companies alone have made money. In the division the growers got practically nothing.

And the orange crop is getting larger and larger every year. It is growing much more rapidly than the demand for oranges. This state of affairs threatens lower prices for the future. Under present circumstances, the industry will soon wreck itself by its growth.

The situation is worthy of the most serious consideration. We think the chief trouble is in the way the crop is marketed. Every other crop in the world except Florida fruit and vegetables is sold within a few miles of the place of its production. Purchasers pay the freight and must make a profit above it. The system of promiscuous consignments is ruining the State.

How can orange-growers expect to make anything on their fruit when they ship it to be sold by rival consignees who have not invested one cent in it except for the freight. If the freight is 55 cents per box, they can sell it for 60 and make their commission; and, competing with each other, they have to cut prices. Whose prices are they cutting? Not their own. They are not losing their own money, but the money of the consigners. They must sell to make a commission. If they do not cut prices the fruit may spoil on their hands. They sell for any amount that will pay freight and a decent commission. It is not surprising that they get such low prices.

The orange-growers must sell at home or at least abandon promiscuous consignments. They ought not to compete with each other and throw their business into the hands of unknown men who have no pecuniary interest in it beyond their commissions. They must unite to stop this reckless competition. They can stop it in no other way.

The present year's average crop is not worth more than \$3,500,000 to the growers. Take the expenses of picking, packing, sizing, hauling, freight and commission from this and it leaves practically nothing. At retail prices the crop will sell for at least \$8,750,000. It must be remembered that all expenses are paid out of the \$3,500,000. There is a profit of over \$5,000,000 to those who handle oranges besides the expenses named, while the profit to the grower is not one-fifth of that amount.

Where can a crop be found that yields as little in proportion to the ultimate value to the producer? This can all be rectified by co-operation for better methods, and in no other way.

The Eastern Peach Crop.

Reports, says the *Farmers' Review* of Chicago, from the peach-growing section of Kentucky and southern Indiana, indicate loss of hundreds of thousands of dollars on that crop by the fickleness of the winter weather. The early part of January was warm and spring-like, causing the buds to swell so that last week's severe cold snap resulted in almost total destruction of the prospective crop. One grower in Pulaski county, Ky., who sold \$20,000 worth last season, expects scarcely enough to pay for gathering the fruit this season. State Senator Joseph McCann of Trimble county reports that, notwithstanding the annual crop of that county is valued at \$300,000, there will be practically no peaches grown there this year. The apple and other fruit crops are also damaged to a considerable extent, but not to such an extent as that of peaches.

A DISPATCH from Washington gives some statistics of the government seed business. Every member and Senator is allowed 20,000 packages, which aggregates 8,000,000 of packages that are sent out yearly. These seeds fill 70,000 large mail sacks. The seeds are intended for experimental purposes only. Those who receive them are expected to make reports to the department, and on these results the department relies to a considerable extent in its recommendations when asked what varieties of vegetables and fruits should be grown by farmers. The dispatch also remarks that unfortunately many people think they know a better use to which to put them, and resort to many tricks to secure large quantities, which they seek to use to plant their gardens for market purposes. We did not suppose market gardeners had confidence enough in government seeds to base a crop venture upon them. This is the business which Secretary Morton thinks should be radically changed, and we think he is right. It is announced that seeds will no longer be sent to personal applicants from the department. The whole distribution this year will be through Congressmen.

THE HOME CIRCLE.

My Sweetheart.

Her height? Perhaps you'd deem her tall—
To be exact, just five feet seven;
Her arching feet are not too small,
Her gleaming eyes are bits of heaven.
Slim are her hands, yet not too wee—
I could not fancy useless fingers;
Her hands are all that hands should be,
And own a touch whose memory lingers.

The hue that lights her oval cheeks
Recalls the pink that tints a cherry;
Upon her chin a dimple speaks
A disposition blithe and merry.
Her laughter ripples like a brook—
Its sound a heart of stone would soften,
Though sweetness shines in every look,
Her laugh is never loud nor often.

Though golden locks have won renown!
With bards, I never heed their raving;
The girl I love hath locks of brown,
Not tightly curled, but gently waving.
Her mouth? Perhaps you'd term it large—
Is firmly moulded, full and curving;
Her quiet lips are Cupid's charge,
But in the cause of truth unswerving.

Though little of her neck is seen,
That little is both smooth and slightly
And fair as marble is its sheen,
Above her bodice gleaming whitely.
Her nose is just the proper size,
Without a trace of upward turning;
Her shell-like ears are wee and wise,
The tongue of scandal ever spurning.

In mirth and woe her voice is low,
Her calm demeanor never fluttered;
Her every accent seems to go
Straight to one's heart as soon as uttered.
She ne'er coquets as others do;
Her tender heart would never let her.
Where does she dwell? I would I knew!
As yet, alas, I've never met her!

—Samuel Minturn Peck.

Tears.

There be three hundred different ways and more
Of speaking, but of weeping only one;
And that one way the wide world o'er and o'er,
Is known by all, tho' it is taught by none.
No man is master of this ancient lore,
And no man pupil. Every simpleton
Can weep as well as any sage. The man
Does it no better than the infant can.

The first thing all men learn is how to speak,
Yet understand they not each other's speech;
But tears are neither Latin nor yet Greek,
Nor prose, nor verse. The language that they
teach

Is universal. Cleopatra's cheek
They decked with pearls no richer than from each
Of earth's innumerable mourners fall
Unstudied, yet correctly classical.

Tears are the oldest and the commonest
Of all things upon earth, and yet how new
The tale each time told by them! How unblest
Were life's hard way without their heavenly dew;
Joy borrows them from Grief; Faith trembles lest
She lose them; even Hope herself smiles thro'
The rainbow they make round her as they fall.
And Death, that cannot weep, sets weeping all.

—Robert, Earl of Lytton.

How Jube Saved the Turkey.

IT was on the 4th of January, in the year 1781, that the traitor Benedict Arnold invaded Virginia and landed his British troops at Westover, on the James river. Sending the greater part of these to surprise and burn Richmond, he remained with a small force at Westover, where the red-coated troopers dispersed themselves in squads about the neighborhood, foraging and destroying property.

Among the places which they visited was Clinchwood, the home of Col. Lightfoot, ten miles from Westover. The colonel was absent at the time, having, immediately upon learning of the landing of the British, hastened to muster his militia men at the county court house, at the same time taking with him his wife and children to a place of greater safety.

The only one of his family who remained was his sister, Miss Judith, who had long been confined to her room, but refused to be removed, saying that the soldiers would not be cowardly enough to molest an infirm old woman.

So she was left to the care of the servants and the housekeeper, Miss Becky Turner, who boldly declared that "she had never been afraid of mortal man," and that, if the soldiers attempted to enter the house, she would fire upon them with an old horse-pistol, of which she had possessed herself.

It happened that upon this day the family had intended having a fine, fat turkey for dinner, and when the alarm of "redcoats coming!" had been given, the black cook had just placed the fowl on the spit before the kitchen fire and ordered Jube, her 16-year-old grandson, to attend to it.

But when the scarlet-clad troopers were

seen galloping up the avenue, with carbines and sword-scabbards glistening in the sun, a panic seized the servants, and they all fled into the near woods, followed by Miss Becky, who forgot all about her valorous intentions. Only Miss Judith and Jube remained on the place.

Jube had no idea of deserting his post. He was the regular turn-spit, and he knew that when such an important task as this was intrusted to him, his duty was to remain seated on his three-legged stool and turn and baste the roast until it was properly done; and he also knew, for he had heard Miss Judith and the housekeeper discussing the subject, that this particular turkey was to be sent that night to the "cross-roads," where it might possibly reach Col. Lightfoot in time for supper, for dinner he would have none; and, as Jube was very much attached to his master, he was anxious that he should not miss his supper.

Through the open door of the kitchen, which stood in the rear of the house, he could see the approach of the troopers and hear their loud voices and footsteps as they entered the house and went clattering about the rooms in search of booty.

He even distinguished Miss Judith's quavering tones as she prayed that the roof might not be burned over her head; and then suddenly the kitchen door was darkened and three red-coated soldiers stood there staring about them.

"Hello!" said one of these, a tall, slim man, who wore the uniform of a sergeant. "Say, boy! got anything here to eat? I'm as hungry as a wolf!"

"Nuffin but dis 'ere tuckey, sar," replied Jube, a little frightened; "an' 'twon't be done in nigh on two hours."

"It won't, eh?" replied the disappointed trooper.

And just then a voice called from without: "Ho, there, sergeant! The captain orders that we hurry on to the Womack plantation at once. They say the rebel militia are mustering above. We can stop here on our way back, but there's better foraging at Womack's."

The sergeant turned quickly to Jube. "See here, boy! You have that turkey done in good time, and keep it for me, and you'll get a silver shilling for your pains. You hear?"

"Yes, sar," assured Jube. But no sooner were the unwelcome visitors gone than he set his brain to work to devise some plan by which the turkey might be saved for his master's supper.

Finally, he decided to hide it, and the place which appeared to him to be the best for the purpose was the meat-house, a square structure near the kitchen, built of solid logs and with no opening save the door.

Accordingly, when the turkey was nicely browned, Jube wrapped it carefully in a white napkin, and, with the aid of a kitchen chair, placed it on a shelf in the meat-house, just under the roof, where it was quite out of sight.

Then he retired, taking the chair with him, and had hardly time to turn the great iron key in the lock when his ears were greeted with the noise of the returning troopers.

They were coming down the public road, accompanied by a drove of cattle and several wagons of forage and provisions stolen from the rich Womack plantation.

Apparently they considered that they had done business enough for one day, or else were anxious to get their booty safe to camp, for they marched quietly past the great gate at the end of the avenue, going toward Westover.

But as the last stragglers were passing, three men detached themselves from the rest, and came riding rapidly toward the house.

Jube recognized the foremost. It was the sergeant, and he was coming after the turkey. Indeed, he called out before he reached the house:

"Hello, boy! Got that turkey ready?" Jube thought it no harm to tell a lie in so good a cause, so he answered promptly:

"Yes, sar. It done cooked an' eat up."

"You black rascal, you don't mean to say that you and the old woman have eaten up that turkey?"

"He's lying!" said one of the men.

"Look here, you scamp! If you don't get that turkey in half a minute, I will run my sword through you!"

This threat, with the sight of the drawn sword, was more than Jube could stand. With chattering teeth and bulging eyes, he led the way to the meat-house, and, unlocking the door, pointed to the shelf.

"Tuckey's up dar," he said.

And the sergeant stepped within and reached up for the prize, but it proved to be beyond his reach.

"Here, Grasty, lend us a back!" he called hastily.

And Jube, despite his fear, almost grinned as he saw one of the men—a stout fellow—stoop over with his hands on his knees while the tall and slim sergeant cautiously mounted upon his back.

"Well," he exclaimed, as he drew forward the turkey, "it smells good enough to set before a king! And here are some fine hams, though not cooked. I say, Canley," he called to the third man, who had remained outside, mounted, "step here and take away as many of these hams as you can carry!"

At this moment a sudden idea flashed upon Jube's mind. All three of the men were in the meat-house, and he stood outside with his hand upon the key.

Quick as a flash he slammed the door, turned the key in the lock, and then, half exultant and half terror-stricken at his own bold deed, rushed into the house and told Miss Judith what he had done.

Indeed she might have guessed it from the sound of the heavy blows showered upon the door by the entrapped raiders.

"Ride, Jube!" she cried, eagerly. "Take one of the horses, and ride for your life to Cross Keys! Tell the first man that you see to hurry up here and take those British prisoners. But, say!" she added, as the boy was hastening to obey. "Push my big easy chair up to the window there, and give me the horse pistol. Now"—and she raised her voice loud enough for the men to hear—"if they get out I will shoot the first who makes his appearance."

But the door of the meat-house was strong and resisted the efforts of the prisoners to break it down. Then they began to hack around the lock with their swords; but long before they had made any impression, Jube had reached Cross Keys and told his story to the vidette whom he found posted there, and who immediately rode off to Col. Lightfoot, who was not far away.

And so it happened that in less than an hour after they had found themselves, as one of the militiamen expressed it, "trapped like rats" in a meat-house, Arnold's three red-coated troopers were confronted by Col. Lightfoot himself, with a dozen followers, and ordered to surrender.

They obeyed with a very ill grace; and as the sergeant gave up his arms, his eyes fell upon Jube, who, being still mounted upon that officer's own horse, was looking on with an expression of the most intense satisfaction. Meeting the trooper's ferocious glance, Jube bent forward and inquired eagerly:

"Is you all done eat up dat tuckey?"

Fortunately for the colonel's supper, the prisoners had been too intent upon endeavoring to escape to think of gratifying their appetite; and Jube brought forth the turkey in triumph, delighted with his master's praises of his performances.

The sergeant was heard to remark to his two fellow-prisoners that he would rather have died than been taken prisoner by a negro boy, and stood guard over by an old woman.

Next day Arnold and his men returned from their successful raid against Richmond, and for some reason he cut short his campaign in Virginia and started away forever from southern shores.

Nine months after, the British army under Cornwallis surrendered to Gen. Washington at Yorktown, in Virginia.

Jube lived to a great age in the family of his kind owners, and his chief delight was to relate to the children, with whom he was always a favorite, how he once made prisoners of three British soldiers and saved a roast turkey for his master's supper.—Golden Days.

Majority Rule Unfair.

For myself I do not see how the doctrine of majority rule can be defended from a philosophic standpoint. There is no real reason why one-half plus one of the members of a community should have the right to pass laws over the heads of one-half minus one. In reality majority rule is a mere makeshift. As soon as the divine right of kings was abolished, the human right of majorities was invented. At the same time, majority rule has so far been considered indispensable in democracies. It has been used as an expedient for arriving at an approximate idea of the public weal. Above all, it has been thought necessary in the orderly conduct of public business.

Our laws are actually made by a small minority of people. No one who has not analyzed the statistics of our election returns, whether State or federal, can form any idea of what a sham our whole electoral system really is.

In the election of congressmen in 1892, there were polled in round numbers 12,000,000 votes. Of these 6,500,000 elected the 356 members to the House of Representatives, the remaining 5,500,000 being unrepresented.

A bare majority of the 356 members represents only 21.4 per cent of the citizens who voted at the election.

These figures show that a vast minority of the voters of the United States were practically disfranchised in 1892. Furthermore, that these voters are now not only unrepresented, but actually misrepresented by their opponents elected from their districts. It also follows from these figures that there are millions of American citizens who suffer from "taxation without representation," who have nothing to say in regard to the laws which govern them. Women have always been debarred from exercising their political rights, but it appears that men, too, are exposed to the same injustice.

A great deal remains to be done before democracy can become anything but a mere name in this country. Accepting the principle of majority rule as necessary, if sometimes faulty, the first thing to do is to give minorities a chance to have their say in our Legislatures by adopting some form of proportional representation. Four cantons of Switzerland now have the free-list system in active operation. It would be a pity if we in this country could not keep up with our little sister republic in the race for pure politics.—W. D. McCrackan in the Boston Globe.

Andrew Blison on Fools.

When I say fools I want to be taken as I mean; the kind of fools I have in my mind ain't the poor unfortunates born without any brains, neither is it the dumb fools that rock the boat, or didn't know it was loaded, or drink a quart of whisky or ice water on a bet, or jump off a high bridge, or go over Niagara Falls in a bar'l. I'm sorry for the first kind; the last ain't worth much thought.

Thomas Carlyle said once, "England has twenty-two million people; pretty nearly all fools," and I guess what he said about his own country would fit in middlin' well in all ages and in all countries. I hold that there ain't many people so well balanced that they don't make fools of themselves sometimes. King Solomon has come down to us as the wisest man. Tradition has it that he couldn't carry all his wisdom around with him, so he kept a good deal of it in big cedar of Lebanon chests in the wisdom cellar. I don't think he always carried the key to that cellar, or he never would have been fool enough to marry seven hundred different women.

Alexander the Great belongs to the kind of fools that drink on a wager, so he ain't worthy of consideration. Everybody is willin' to own that Julius Cæsar was quite a man; as a writer, an orator, a statesman, an emperor and a general he took in pretty much everything he came to, including a good share of Gaul; yet with all his talents and his liberal amount of Gaul, he was fool enough to think he could tyrannize over the Romans, but got stuck, and Brutally stuck, too, for his foolishness.

Marc Antony was next to get stuck; first on Cleopatra, then on the point of his own sword. N. B.: This sort of fool has always been common.

Queen Elizabeth was considered a very capable sovereign, but she was foolish enough to think she was handsome, just because her courtiers told her she was; which makes me think of a later English queen who deluded herself into the idea that she could write books, one of which, at least, is a regular "Brown" study. George Washington has never been accused of being foolish, but it certainly looked a little that way when he once kept his servant, Bishop, holding his horse all day in front of a house while he danced attendance upon a pretty girl whom he had never seen before. This case was rendered all the worse for George from the fact that the girl didn't care a rap for him nor his Bishop. The truth being that she never thought of the future great man in connection with a Bishop or indeed any sort of a clergyman. He had other lamentable weaknesses, too, this semi-sainted hero of ours, being possessed of an ungovernable temper, and when in a rage acting more like a fool than anything else.

"Fools are my theme!" shrieked Lord Byron; "the Scotch are all fools, especially Walter Scott;" then he proceeded to show the whole world what an unmitigated fool he could make of himself in his private life, crowning it all by swimming the Hellespont, just to convince people that Leander was only an ordinary one-horse swimmer and very much a fool for making such a noise about the simple feat of swimming a mile or two that he might have the pleasure of making love to Hero for a few minutes. There ain't been a man or woman among all the celebrated characters of history so well balanced that they didn't make fools of themselves some-

times. If one attempted to tell all he knew about great fools, he wouldn't have much time left to devote to the foolishness of common every-day mortals. I have merely mentioned a few of the greatest ones, to sort of lead down to the types which we see and mingle with every day. If I am permitted, I will discuss the subject further in another paper.—Andrew Bilson.

Hints to Housekeepers.

In packing bottles or canned fruit for moving, slip a rubber band over the body of them.

Never slice apples for making pies; quarter and core, and if an apple is large cut each quarter in two pieces.

Sift a tablespoonful of pulverized sugar over the top of two-crust pies before baking, and see how delicious it makes them.

Nothing will give such a polish to glass, even the finest, as slightly moist newspaper to wash it, and dry newspaper to give the finishing touches.

Piano keys yellow with age can be cleaned by a dilution of one ounce of nitric acid in ten ounces of soft water. Apply with a brush and wash off with flannel.

After thoroughly sweeping a dingy carpet, wipe it with a damp cloth partially wrung out of a mixture of water and ox gall in the proportion of two tablespoonfuls of the latter to a gallon of lukewarm water.

To cleanse glass bottles that have held oil, place ashes in each bottle and immerse in cold water, then heat the water gradually until it boils; after boiling an hour let them remain till cold. Then wash the bottles in soapsuds and rinse in clear water.

A water cooler to set over a pitcher or a goblet may be made by inserting an interlining of cork into a high Turkish fez. Of course, it must be taken to pieces and remade, but the result, when accomplished, will be found to be very like those coolers imported from India.

Steel knives or other articles which have become rusty should be rubbed with a little sweet oil, then left for a day or two in a dry place, and then rubbed with finely powdered, unslacked lime until every vestige of the rust has disappeared, and kept in a dry place wrapped up in a bit of flannel.

A bit of peppermint lozenge just before going on is Lillian Blauvelt's preventive against dry palate, or any other salivatory trouble. Every one knows that her mellow notes always seem to ripple from a well-oiled throat. She gave the remedy to Campanari, who extols it highly. It may come in excellently for many a nervous, dry-throated young singer.

When putting gloves on, always begin by buttoning the second button; then, when buttoned to the top, you can easily fasten the first button without tearing the kid. Never remove the gloves by pulling the fingers, but by drawing the part covering the wrist over the hand, and leave them thus wrong side out for some time before turning them to their proper shape. Always lay gloves lengthwise; never roll them.

Simple as the operation may seem, there is a way to clean windows and a way not to clean them. The following suggestions may be of use to some, as they save both time and labor: Choose a time when the sun does not shine on the window, else it will dry streaked, and no amount of rubbing can prevent it. Brush off all the dust inside and out; clean the woodwork around the glass first. Use for this warm water and ammonia; do not use soap. Wipe dry with cotton cloth. Do not use linen, as it leaves lint on the glass when dry. Polish with tissue or old newspaper.

All garments should be thoroughly aired after wearing. Under no circumstances should they be hung up in closets or folded away in drawers until they have had every opportunity of drying and purifying by exposure to the open window, if nothing more. Even a bonnet or a pair of gloves should not be set away at once, after the fashion of the over fastidious who cannot bear to see an article out of place for a moment. If the bedroom is not also a sitting-room this may be arranged by leaving a window open there all through the day, and shutting the door upon the disorder, which is the highest type of neatness, because it is essential to wholesomeness and health.

Man (in theater to woman in front): "Madam, I paid \$1.50 for this seat, and your hat—" Woman (calmly): "That hat cost \$25."

The Unmarried One: "Jack is not rich; but then one in moderate circumstances can be happy. Don't you think so?" The Married One: "Yes, but not two, dear."

A Riddle—Who Will Send Us the Answer?

Many years ago a prominent merchant in Taunton promised an eccentric old woman named Lucy King, living in the neighborhood, a prize if, taking her subject from the Bible, she would compose a riddle which he could not guess. She won the prize with the following:

Adam, God made out of dust,
But thought best to make me first:
So I was made before the man
To answer God's most holy plan.

My body God did make complete,
But without arms or legs or feet;
My ways and acts He did control,
But to my body gave no soul.

A living being I became,
And Adam gave to me a name;
I from his presence then withdrew,
And more of Adam never knew.

I did my Maker's law obey
Nor from it ever went astray;
Thousands of miles I go in fear,
But seldom on the earth appear.

For purpose wise which God did see,
He put a living soul in me;
A soul from me my God did claim,
And took from me that soul again.

For when from me the soul had fled,
I was the same as when first made;
And without hands or feet or soul,
I travel on from pole to pole.

I labor hard by day and night,
To fallen man I give great light;
Thousands of people young and old
Will by my death great light behold.

No right or wrong can I conceive,
The Scriptures I cannot believe;
Although my name therein is found,
They are to me an empty sound.

No fear of death doth trouble me,
And happiness I ne'er shall see;
To heaven I cannot ever go,
Or to the grave or hell below.

Now when these lines you slowly read,
Go search your Bible with full speed,
For that my name's recorded there,
I honestly to you declare.

Thoughtful Paragraphs.

The devil knew not what he did when he made man politic; he crossed himself by it.—Shakespeare.

Do not accustom yourself to consider debt only as an inconvenience; you will find it a calamity.—Johnson.

No true and permanent fame can be founded except in labors for the happiness and good of mankind.—Charles Sumner.

If your eye is on the Eternal your intellect will grow and your opinions and actions have a beauty which no learning or combined advantages of other men can rival.—Emerson.

In troubled water you can scarce see your face, or see it very little till the water be quiet and stand still; so in troubled times you can see little truth; when times are quiet and settled then truth appears.—Selden.

I have sometimes thought if the sun were an intelligence he would be horribly incensed at the world he is appointed to enlighten; such a tale of ages, exhibiting a tiresome repetition of stupidity, follies and crimes.—John Foster.

How little our knowledge of mankind is derived from intentional, accurate observation. Most of it has, unsought, found its way into the mind from the continual presentation of the objects to our unthinking view. It is a knowledge of sensation more than reflection.—John Foster.

This man, we say, became morally great by being in his own age what in some other ages many might have been, a genuine man. His grand excellency was this, that he was genuine. As his primary faculty, the foundations of all others, was intellect, depth and force of vision, so his primary virtue was justice, was the courage to be just.—Carlyle on Goethe.

Do good and leave behind you a monument of virtue that the storms of time can never destroy. Write your name in kindness, love and mercy on the hearts of thousands you come in contact with, year by year; you will never be forgotten—your name, your deeds, will be as legible on the hearts you leave behind as the stars on the brow of evening. Good deeds will shine as the stars of heaven.—Chalmers.

Our life is shaped, our character and destiny determined, partly by things which we can control and partly by things which we cannot. It is of the former class that we hear most from our moral and religious teachers. Teachers of morals and religion must appeal to men as free, must plead with them to do certain things and to abstain from certain other things, both confessedly within their power.—President Warren's Baccalaureate before Boston University.

YOUNG FOLKS' COLUMN.

Twenty-one.

I miss the patter of little feet
Upon the kitchen floor,
And the roguish little rat-a-tap
Falling upon the door,
And the eager shout of wild delight
As, opening it, I espied
A bright, mischievous, childish face,
Brown-cheeked and sunny-eyed.

I miss the hungry call for bread;
The "Mother, I want a string!"
The ball to cover, the kite to paste,
The bells on the sled to ring;
The garments tore in the daring climb,
The shouts of exultant glee
And the headstrong, boyish wilfulness
That sometimes fretted me.

I miss the noisy, boisterous laugh,
The merry whistled tune;
The song that seemed to my mother-ear
As sweet as a bird in June,
I miss the form that bent by my knee
As the bed-time hour drew near,
And a murmuring voice that softly said
Our Father's blessed prayer.

Later, I miss at evening-time
A boy with his slate and book;
The pencil click and the thoughtful face,
With its sober, earnest look;
The flash of triumph, as fair and white,
The conquered problem stood,
And the boyish words of victory,
"I've got it mother! Good!"

All that I miss I cannot tell,
For many, many a thing
Flashes between me and my work
On memory's flitting wing;
The roguish hands, the tattered clothes,
The thoughtful face are gone.
"Dead?" did you ask, sir; no, thank God!
But you see he's twenty-one!

Twenty-one, sir, out in the world;
Out in the din and strife,
Doing his part with a sturdy will,
Of the earnest work of life;
He comes, a man, with a firm, quick step,
And I kiss him at the door.
But my little make-believe-company boy
Will come to me no more.

Teddy's Easter.

SAY, mamma, you don't 'spose I shall have to stay at home Easter Day, do you?"

"No, dear, I hope you will be well enough to go out again by that time."

"You see, mamma, I must go, 'cause there's my lily going to blossom, and 'course I must go and see how it looks in the church. And then, 'sides, you know grandma could never find her hymns if I wasn't there to help her, and she says she must go to church Easter."

"Yes, my dear little boy, we will hope that both grandma and Teddy will be well by Easter, and that it will be so warm and pleasant that no one need stay at home. Still, Teddy must try to be patient if he should not get well quite so fast as we hope, and if it should storm—"

"Oh, mamma, it dust musn't rain on Easter Day! It's wained enough now, anyway, to last all summer, and if dose cattle you told me 'bout need more drink, they can just drink milk like I does."

"Let it rain!" papa said. But then papa was a big man, and could go out when he pleased, rain or no rain. How Teddy did long for the time when he could do as papa did.

Still it might be pleasant Easter. Teddy tended his lily carefully, carrying it around from place to place where it would have the most sun, and putting it in a warm corner at night, so that it would be sure to open in time.

Indeed, the little fellow came near being too good to his pet one day. Some one had told him that warm water would hasten the blossoming, and mamma found him tugging away at a pail of boiling water that Bridget had carelessly left in the hall for a moment. Mamma explained that a little hot water in the saucer of the pot was what the lady

meant, and she showed him how to pour it in.

This did beautifully, and now, the day before Easter, the lovely lily was wide open, and looked, as Teddy said, "Dust weady to fly up to God." It was a lovely warm day, and Teddy's hopes for to-morrow were very high. His little blue velvet suit was all done, and mamma said he might go with her in the morning early.

"So as to see the very first 'see' of my lily, you know, mamma," said Teddie.

"Yes, darling, if it is pleasant."

"And you'll be sure papa carries the lily over to-night, mamma," were the little boy's last words, as mamma tucked him up snugly in bed.

When Teddy woke up the next morning what was that dreadful sound he heard? Rain? Worse than that! Sleet, dashing against the window. It would be hard to tell which howled the louder for a while, Teddy or the wind.

Mamma came running in and took her little boy back to her own bed, and she and papa both tried to comfort him, but it was of no use. He would not be dressed, even, and "hated beasfus." No, he "didn't want to hunt for Easter eggs in a nest," and he "didn't care for old, ugly Easter cards." Nurse brought up a nice breakfast for the little boy; then mamma had to leave him and grandma at home alone, for she was to sing in the chorus that day.

When she returned she found a good little boy, quietly listening to one of grandma's nice stories. The tears would come a little when mamma told him how lovely the church looked and how Mr. Morton, the minister, sent his love to Teddy, and said his lily was the largest of any. But he went down to dinner with a smiling face.

Then he found, oh, so many little surprises on the table for him: "Boofer" Easter cards, and a lovely little nest made of sweet grass, with four little eggs in it. And then the dinner itself had so many of the things he liked best in it, and to crown all, "a truly-looking hen," with eggs under her, all made of ice cream.

Papa said he thought a disappointed little boy was a good thing to have in the family, if such a dinner was the result. He thought he'd try being disappointed some day. Mamma, you see, had quietly prepared all the nice things she could think of in case it stormed.

After dinner Teddie and grandma sang carols together while mamma was gone again to take care of her class, and when she came home she took Teddy in her arms and told him all she could think of about the day. Then the door bell rang suddenly, and in came Mr. Morton bringing flowers for grandma, and for Teddy a large pot of violets, which were sure to bloom again in the fall. Then he held up his hand and said "Hark!" and just outside, close under the windows, were some of the choir boys come to sing carols to grandma and Teddy.

The storm was over now, and the stars coming out, so mamma wrapped Teddy up in a big shawl and opened the window just a little way. Teddy thought, as the boys went slowly home, singing all the time, that no music ever was so sweet.

To crown all, a week later a pretty photograph came to Teddy, marked "Interior of Luke's on Easter Day," with a little red cross to mark Teddy's lily. Mamma and Teddy said they surely thought their minister was the very "nicest" that ever was. And don't you?—Dorothy Belle.

Little Boy: "What's all these women here for?" Little Girl: "They've been upstairs to see the baby." Little Boy: "Babies is plenty 'nough." Little Girl: "Yes, but this is a new one, an' I expects they wants to see the latest fashions."

They were speaking of superstitions, and Mrs. Dix said: "What is it a sign of to have the family cat howl outside at night?" "Of a death in the family if the man is a good shot," replied Mr. Dix, emphatically.

Highest of all in Leavening Power.—Latest U. S. Gov't Report.

Royal Baking Powder
ABSOLUTELY PURE

PATRONS OF HUSBANDRY.

Random Thoughts.

By A. P. ROACHE, W. M. S. G. of California.

The laws of nature, well and fairly kept,
Will prove the richest harvest ever reapt.

The worthy State Grange organist (Sister Frankie Greer) has selected a number of beautiful songs to be sung at the Grange Congress, and when rendered by the trained and willing voices of numerous grange choirs in unison, will make Social Hall ring as it has never rung before and cause the hearts of all patrons to swell with admiration and a determination to more devoutly worship at the grange shrine.

The Midwinter Fair will not again be repeated during the life of any one now living. Hence it behooves every one not to miss this opportunity of a lifetime, brought to their very doors, and at a cost so modest as to be within the reach of all. Californians should see to it that it does not suffer through lack of patronage. Here is the opportunity for the farmer and his family to view the wonders of the orient and the occident, the combined excellencies of every land under the sun, and what would require a lifetime of travel to see. Although times are hard, the expenditure of a few dollars can be made up some way, while the fair will soon pass away forever.

There will be a large registration book in the reception room of the Midwinter Grange Congress, in which all patrons will be requested to write their names, the name of their grange, county and State, as well as postoffice address. From its pages a valuable record will be obtained.

Untrammelled by wealth life's advent we make,
But try our full best to surround it;
Yet, when we depart we take nothing at all,
And leave the world just as we found it.

Past Master Webster is so busy preparing mental bombshells to fire into the camp of the "Monops." from his long range and terribly effective artillery, that he must be excused from writing on grange topics for the present. However, as the season is far advanced and noxious weeds are high and troublesome, we have a *Sterling Coulter*, keen-edged, bright and powerful, who can as quickly detect evil, strike as hard a blow against it, and turn the furrows of justice as straight and smooth and true as any coulter, either rolling or stationary, that ever cut the soil of ignorance. Brother Coulter, give us the ring of your steel.

Bennett Valley, Santa Rosa and the rest of the granges in the county will hold a co-operative jubilee in May, which bespeaks an early awakening in grange interests all along the line, and the national lecturer, our able State lecturer and many wide-awake State and county deputies will take a hand in carrying the war into Holland. If promising blossoms portend a bounteous crop, surely the grange tree will be well laden before the roses die.

The assessor is on his yearly round-up again, prying into people's business at will. Happy is the fellow who can telegraph a million or so to Virginia City or some other city till the danger is past, and then telegraph it back again. Notwithstanding the depreciated prices of all farm products, taxes, wages and official salaries are as high as when two cents per pound was paid for wheat. It would be well for farmers, as it is a grange principle, to look into these matters and see if a little judicious equalization might not be something of an improvement on the present order of things.

The executive committee will be hard at work and have perfected the programme for the Grange Congress in April before this week's RURAL reaches its readers. Next week it is hoped the programme in full can be published. And then, "All hands on deck."

A Spirited Meeting at Stockton.

TO THE EDITOR:—A spirited meeting was held at Stockton Grange Saturday, the 18th, when the masters of Lodi and Lockeford Granges and Bro. Williams of Woodbridge met with us to confer as to having the national lecturer speak at two points easiest of access. Those points were decided to be Lodi and Stockton and the vote was unanimous to invite him.

Then Bro. Woodward, an old time teacher, pitched into the cramming process of our present schools, declaring that children could study only, with vigor, six months of the year. The other six months parents should teach them to work, working with them and teaching them to love the

farm. In towns there could be shop schools, with lessons on the use of tools. The children could do garden work, clean up the yards or anything else useful. Now they have not time to use their brains.

The master of Lodi Grange lived near the Hatch-Armstrong orchard, run by Eastern capital with the iniquity of Japanese and Chinese labor. Children from the town went there to get work and were told that all of their work was done by that class in fruit-picking time. Yet this company wanted the duty on prunes and raisins left alone but removed on other things. He believed in no tariff at all. Let all things be equal. The income tax would furnish the revenue.

This brought others to their feet who thought protection to our industries a vital necessity and the uncertainty of it the cause of the present hard times. The W. M. of Lockeford Grange had often been asked if there was anything in the grange. Then Bro. Overhiser brought forward that clincher, the trade card, and showed the excellent working of it in Stockton, except where people went to firms not in the arrangement.

W. M. of Lodi Grange paid a tribute to woman in the grange. Is she not always foremost in good works?

General Ketchum said that the South, receiving \$9,000,000 sugar bounty and \$5,000,000 pension money, with a postal deficit of \$3,000,000, need not writhe under pension payments to soldiers who saved the nation's life.

W. M. Noyes said that if members would get the March number of the *North American Review* they would find the revenues from each State to the Government and much other information on leading questions of the day. Then, with perfect good humor, each wended his homeward way. A. A. Stockton, March 11, 1894.

A Hopeful, Manly View of the Grange Situation.

TO THE EDITOR:—Since I joined the Grange I have often wondered at the constant mail going up from grange writers for the agricultural press. Now we grangers are all supposed to be interested in the good of the order and all anxious to add to the membership. There is an old saying that "rats will leave a sinking ship" and if some of the oracles of our organization can be believed, the grange is in that condition.

How many of our writers and speakers constantly harp on the down-trodden and oppressed condition of the American farmer, how they are discriminated against by the powers that be, how all the manhood and womanhood is being crushed out of the tillers of the soil, how every other calling is exalted above ours, until when one asks a person that is eligible to join our organization, they will reply by telling you, that taking our own authority on the matter, we are too low down in the scale of humanity and that they want nothing to do with us. Now I am going to make a few assertions that may startle some of the good brothers and sisters. I think the grange is one of the grandest organizations ever devised for the American farmer. It has done a noble work and I believe it is destined to do a still greater work in the future, but I do not believe that we will ever gain anything by a continual howl against other interests. I have been a small farmer nearly all of my life, my parents were farmers, and all my sympathies are with the agricultural classes, but sir, I shall claim, and think that I can substantiate the statement, that the farmers have had an even show at least, in the race for wealth. I believe "the pre-emption law," "the homestead law," "the timber culture act," "the desert land act," and perhaps other special legislation have been in the interest of the farmer. No one will deny that the times are very hard, produce is very low and that farmers, like all other classes, find it difficult to make ends meet. But are the people not responsible in a great measure themselves? The statistics will show that the American people spend \$1,200,000,000 per annum directly for strong drink, and about \$600,000,000 for tobacco. Will any one claim that there is any necessity for doing so? When you consider that all those hundreds of millions are only a small part of the expense attached to those twin curses of humanity, the result is appalling.

I believe that the people of San Joaquin county are as moral as any in the State, yet they support 235 rum mills, 125 in the city of Stockton and 115 outside. I have seen it stated that the city and county of San Francisco is supplied with over 5000 saloons. Who supports them? It is six miles from the little town of Waterloo to Stockton, in that distance we have six saloons; there are

three free watering troughs kept up by the county on the road. Now, what looks very strange to me is to see modern reformers and calamity howlers (for we have some of that class here) drive right by a free trough to patronize a gin mill, then go to town, curse the Government and shout reform.

The free coinage and purchase of silver by this Government has been discussed until it is worn threadbare, it has been stopped, now let us wait patiently and see the result and if the whole civilized world has made a great mistake it will probably find it out in due time.

In conclusion I would ask why so many of our talented members, high up in the order, expatiate so eloquently about the oppression of the people by the "gold bugs," "silver kings," "Shylocks" and "plutocrats" and never a word about the sum of all villainies, the curse of all curses, the liquor traffic.

M. L. NOYES.

Master Stockton Grange.

Stockton, Mar. 12, 1894.

The Secretary's Column.

Don't forget that the dates of the Grange Congress are the 13th and 14th of April, 1894, although it has been published otherwise.

Don't forget to attend on that occasion, as there will be plenty of amusement for both young and old.

Don't forget to hear the worthy lecturer of the National Grange, who is an able and fluent speaker. His visit promises to be of much benefit to the order in the State. I am not able to say at the present time how long he will remain here, but no doubt arrangements will be made for him to lecture in different parts of the State.

Don't forget that more than ordinary interest is being taken in the organization and reorganization of granges throughout the land.

Don't forget to read the circular letters which this office is sending out from time to time from officers of the National Grange.

Don't forget that the national lecturer suggests to use the newspaper press of the country, so far as may be deemed practicable, in keeping the objects and aims of the order, together with such facts as may be of general interest, constantly before the people; and in this connection he suggests that the local press in all parts of the country can be utilized for the good of the order by lecturers and correspondents of subordinate granges to a much greater degree than in the past by furnishing more short, sharp, spicy items relating to grange meetings, progress, prospects, etc. The papers of the country, especially the agricultural papers, would no doubt gladly print all such matter that could be furnished them.

Don't forget that an official badge has been adopted by the executive committee of the National Grange for National, State, Pomona and Subordinate Granges.

Don't forget to send the name and address of the master and secretary of your Subordinate Grange for reference in this office. There are eight granges which have not reported the name and address of master and secretary for 1894.

Don't forget that the *American Grange Bulletin* and *Scientific Farmer*, says Bro. Roache, Worthy Master of California State Grange, deals pleasantly but to the point with the question of "Federation."

Don't forget that March 31st is the ending of the first quarter of 1894, and that all secretaries should have their reports made out and forwarded to this office as soon as possible thereafter. Blank reports will be sent to all secretaries in a few days. I quote the following from the *American Grange Bulletin*:

"The entire order of Patrons of Husbandry mourns the death of Bro. John R. Thompson, which occurred at the residence of his son-in-law at Washington, D. C., on the night of Feb. 11th, at the age of 66.

"Bro. Thompson was the first lecturer of the National Grange, and the only office ever held by him. The ritual of our order contains much of the fruit of his able mind.

"The entire ritual of the assembly of Demeter (the seventh degree of the order) was composed and arranged by him."

Up to date the following names have been received at this office appointed by subordinate granges to act on the Reception

Committee at the Grange Congress: Bennett Valley Grange, Bro. John Burnham and wife; Pescadero Grange, Bro. Geo. Steele and Miss L. Chrisman; Elk Grove Grange, Bro. and Sister Williamson; Tulare Grange, Bro. John Premo and Sister J. Fowler; Waterloo Grange, Bro. G. R. Drullard and Sister H. M. Jones; Watsonville Grange, Bro. and Sister H. F. Blohm; Alhambra Grange, Bro. and Sister H. C. Raap; Roseville Grange, Bro. and Sister Cross; Sacramento Grange, Bro. and Sister George C. McMullen; Petaluma Grange, Bro. Theo. Skillman and Sister C. D. Grover; Yuba City Grange, Bro. B. F. Walton and Sister Jennie Starr; Lockeford Grange, Bro. and Sister Geo. A. Foster; Santa Rosa Grange, Bro. and Sister S. T. Coulter.

Hon. N. P. Chipman of Red Bluff will prepare a paper on "Horticulture" (treating the subject as a California industry), to be read at the Grange Congress.

Past Master I. C. Steele is reported ill with a severe cold. It is to be hoped he may soon recover. He expected to meet with the Executive Committee on the 14th, but may not now be able to attend.

Danville Grange held an interesting meeting on March 2d, the subject for discussion at that time being "Does Industry Need Protection?"

(Continued on page 218)

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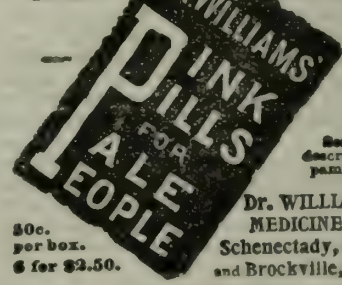
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AGRICULTURAL NOTES.

CALIFORNIA.

Butte.

Oroville Mercury: The "Lava Beds" adjoining Oroville on the south are rapidly being converted from tailing piles and heaps of sand into beautiful orchards and vineyards, wherever a little time and money is given to their reclamation. Why this section was ever called the "Lava Beds" it is difficult to understand. It was given that name about 20 years ago, when it was the scene of great mining excitement. It was originally a beautiful little valley, level and fertile. When it was found that it was very rich in gold, thousands of Chinese swarmed down upon it and dug up and mutilated nearly every acre, and when the excitement was over it was left in that condition. Had it never been mined it would be to-day the garden spot of Butte county. Of late many acres have been reclaimed. When the holes are filled in and the ground made level again, it is just as fertile as it ever was. Leggett & Son's famous vineyard and orchard, the Gardella and Seconi places and half a dozen extremely productive ranches are on the Lava Beds. Their productivity is almost phenomenal, and 20 acres in bearing is sufficient for any family. The Kusel brothers' olive orchard is an example of later improvement. It is now one of the finest in the State, and the output of oil and olives this year was large. A dozen other places could be named.

Oroville Register: Alexander & Hammon, of Rio Bonito, have fully \$100,000 invested in their nursery. They are shipping trees to all parts of the State, and their stock is in the very best of condition. Lately they made a shipment to a county in the San Joaquin valley, and one of the Horticultural Commissioners of that county quarantined the trees. He did not send word to Mr. Hammon, and the trees remained some days ere the owners learned what action had been taken. He then wrote to the commissioner asking him to send him a sample of the infested trees. This he would not do, and Mr. Hammon made up his mind it was a case of revenge, as he had used the said commissioner last year for a bill of fruit trees. Every effort was made to get the commissioner to come where the trees were, but he kept out of the way. The other two members of the county board released the quarantine, as the trees were entirely free from scale. It looks as though the officer had taken advantage of his position to injure an innocent dealer.

Kern.

Echo: A large percentage of sheep and lambs has been lost this season owing to the shortness of feed on the ranges. The heavy rain on Friday will produce an abundance of feed from this time on, and the owners of flocks believe that they will sustain no further loss.

Los Angeles.

The Los Angeles Express prints an interview with one of the largest fruit shippers in southern California, which furnishes a timely suggestion to those thinking of planting orchards this season. It is that the notion held by many to the effect that southern California deciduous fruits shipped is a mistake. They ripen later than those grown in the Sacramento valley, it is true, and this may be some disadvantage in securing the early markets, but it has a great advantage of securing almost a monopoly of the late eastern markets. For instance, Bartlett pears grown in northern California are all shipped and marketed before Bartlett pears are ready for shipment from southern California. The best varieties of fruit to grow for eastern shipment are peaches, pears, plums, prunes and grapes. The best varieties of peaches in the order of their ripening are the Early Crawford, Late Crawford, Susquehanna, Salway, and Orange Cling. Freestone peaches are more desirable for eastern shipment than clingstones. The spots where citrus fruits can not be grown will grow deciduous fruits to perfection. Low, damp land is especially suitable for pears. It was generally thought that irrigated fruit was not suitable for eastern shipment, but experience has demonstrated that irrigated fruits are really more satisfactory for eastern shipment than unirrigated fruits. In growing fruits for eastern shipments, orchards should be well pruned, cultivated and irrigated. Peaches should be thinned. With the superior railroad facilities of southern California our fruits are as near the eastern markets as those grown farther north, and there is no reason why this industry should not be a very profitable one for the southern section of the State.

Merced.

Merced Sun: It seems probable that, before long, windmills, which are now in general use for pumping water, may be used for electric lighting and motive power. A windmill, 18 feet in diameter, has been tested which, with the wind at 20 miles an hour, maintains a three-horse power current. By attaching a dynamo and storage batteries, a great deal of power may be accumulated on any moderately breezy day. We may be soon turning the coldest northwest wind into light and warmth for our houses, so that the harder it blows the brighter and warmer we can make our homes.

Merced Sun: A new industry in California, as well as in Merced county, is date culture. This fruit grows on large palms, with out-reaching foliage. The bloom forms on large stems, shooting out from the base of the arms of foliage and being overlapped by them. There are a large number of date palms in the county, although only a few are producing fruit, owing to the fact that the subject of their culture has not, until recent years, been understood in this locality. There is a male and a female tree. The latter bears the fruit when the bloom has been fertilized by the pollen of the former. The fruit grows in large clusters similar to the banana, only it is smaller and with more of a luster.

Modoc.

Alturas Herald: Some 25,000 head of sheep will be sheared at Amedee this spring, commencing March 20th, for which the owners will pay only four cents per head for each sheep sheared.

Orange.

Santa Ana Herald: Mr. T. J. Jones, whose place is northwest of Garden Grove, grew beets on a small alkali patch that tested 17 per cent of sugar.

When it is considered that 12 per cent is standard, and that the price paid is \$3.50 per ton for beets of that grade, with 40 cents for each additional one per cent, the value of this discovery will readily be appreciated. Mr. McLellan also states that he raised some of the best beets on his place in one corner that was white with alkali.

Anaheim Gazette: So the Semi-Tropic orchard is the first to "slump" from the association? Earl gets the crop for \$10,000, and 40 carloads of the finest fruit in southern California falls into his hands. That he will use it in carrying out his attempt to disorganize the association goes without saying. That he has secured this crop, taking in as it does one-third of the entire Placencia crop, when it had all along been confidently expected that the association would handle it, is regarded by local growers as being in the nature of but little short of a pestilence. The contract was secured from the directors, who live in the northern part of the State, and who, it may be presumed, take very little interest in the contest now going on between Earl and the orange-growers. The price is a big one, and the payment of it shows to what extent the commission firm consents to go to procure the best grades of fruit. A year ago, when no association had sprung up to protect the growers, it is doubtful if Earl would have given much more than a third of the present price for the crop.

Riverside.

Riverside Press: The County Supervisors living in the outside districts ought to be pretty good authorities on crop prospects in their localities. Mr. Loveland, who resides at Winchester, is of the opinion that the grain crops in his district promise well. He says there is not as much water in the ground as is needed for the season, but a few rains later on will mature the crops. Mr. Stewart of Elsinore says, so far as he has been able to see, the prospects for fair crops are encouraging. He says the best grain by half is upon summer-fallow ground. M. McVicar of South Riverside is about as encouraging in his reports. He says that in traveling over his supervisory district he sees much fine grain. He says that A. J. Stalder, just this side of Union, has several hundred acres of as beautiful a stand of grain as he ever saw in any season. These reports are reliable and they take in about all the country outside of the immediate vicinity of Riverside, as the duties of the three supervisors named, take them over their districts more or less every month. Equally encouraging reports also come from other sources.

San Diego.

Nuevo Sentinel: James Duffy received a letter a few days ago from Charles H. Shinn, inspector of experiment stations of the State University, asking him to send scions of his, Ober's and Bush's seedling apples which are on exhibition at the Midwinter Fair, that they may be grafted in the University orchard. Scions of the Eureka and Baldwin (which, it is stated, is not the true Baldwin) are also asked for, as well as other seedlings that can be secured. They, as well as specimens of mildew, will be forwarded. Fruit growing is still largely experimental in this district and information on all parts of the subject may be of great benefit to the grower.

Santa Barbara.

As to the kind of soil in which the olive succeeds, Elwood Cooper of Santa Barbara says that he has trees growing without irrigation in black adobe, on stony hillsides, on table land with clay subsoil, in sandy lands made from the wash of the mountains, with no difference in the bearing of the trees or the oil made. They are known to succeed where peach, apricot and nectarine trees have been destroyed by the black alkali, and also in land so rocky and steep that it cannot be plowed. Our virgin soils of California are rich in lime and potash, two of the chief constituents required by the olive tree. Professor Hilgard has stated that the substance of olive oil is taken entirely from the air, and that if the crop is made into oil and pomace and all other offal returned to the land from the outset, it needs no other manure if the soil is a fairly good one; it does not wear out the soil, but if the fruit is pickled, returns should be made to the soil, and then potash and nitrogen are especially called for. The olive tree flourishes under varied climatic conditions; it will withstand a temperature of 14 degrees above zero; it succeeds in the dry interior valleys of the State, where the mercury during the summer often ranges from 100 to 120 degrees in the shade, along the coast and on the high foothills of our mountain ranges. In Algeria, latitude 35, it thrives at an elevation of 4800 feet above the level of the sea; in Italy at a height of 3200 feet, and there is a bearing orchard in about the latitude of Pomona, situated upward of 3000 feet above the sea.

Santa Clara.

Los Gatos Chronicle: An article from an Oregon paper in which it is stated that hogs rapidly fatten on prunes, the resulting pork being of the very best quality, has recently been going the rounds of the press. It was at San Jose two years ago that James E. Gordon of Saratoga, in an address before the State Horticultural Society, suggested that if the time should come when prune growing suffered from overproduction they could still get good returns by turning their prunes into pork. The idea was new; but others have since taken it up, and have been feeding their small, unsalable prunes to hogs, and they have found it pays. Mr. Gordon states that one pound of prunes will produce more meat, and of a better flavor, than two pounds of grain. Prunes and pigs does not strike one as a happy alliteration, but it seems that they go very well together, and that the combination is not so incongruous as at first glance appears.

Santa Cruz.

Pajaronian: James Waters is having lots of calls for the celebrated Logan berry plants, and the sale is quite brisk. Owing to limited supply he is limiting the sale to five plants to each purchaser. It has created a bit of a sensation among Eastern nurserymen, and two large dealers are anxious to control its sale east of the Mississippi river. The Logan berry is destined to become one of the most marketable small fruits.

Sonoma.

A Bennett Valley letter in the Santa Rosa Democrat says: "Gardening is away behind time in this valley. Usually our asparagus, onions, radishes

and turnips are about ready for the kitchen cure by this season of the year, whereas now but few seeds have been planted, and most of those have rotted in the cold ground."

Sonoma Tribune: There is a probability that all the canneries in this city will run heavily this year. At any rate, the Magnolia and Russian River will operate on their usual big scale. If the affairs of W. F. Beck & Co. are adjusted before the fruit season opens, it is doubtful that their cannery will be allowed to remain idle.

Sonoma Tribune: Claus Meyer is grubbing up several acres of his vineyard near Geyserville—not that he has no faith in the prediction that the wine industry has a bright future, but because the soil in which the vines are planted is too rich for grape-growing, and the grapes every year rotted before they reached the stage of maturity. However, the vines bore very heavily. The vineyard will be supplanted by an orchard of French prunes from a graft of myrobalan roots.

Tulare.

Visalia Times: On Wednesday, John A. Patterson and Capt. C. J. Berry planted a small orchard at the site of the old Stone Corral cabin. The orchard includes 75 olive trees and 25 lemon trees of different varieties. Nothing is left of the cabin now but a fireplace chimney built of rocks and adobe mortar.

Tulare Register: In our enthusiasm over fruit we are apt to forget that we also raise a great deal of stock in Tulare county, and that there is perhaps more money in it for the capital invested than in most any other business—that is, one can keep a great deal of stock on a very little land, and, by natural increase, come to have a considerable capital invested almost without knowing it. According to the county assessor's report for 1893, there were in Tulare county 33,897 head of cattle, 21,700 horses and mules, 142,504 sheep, 14,657 hogs, and, as the assessor gets only a meager report in regard to other things, it is not at all likely that he gets all the stock there is in the county on his roll. Kings county assessment roll showed 3764 head of cattle, 6532 horses and mules, 71,154 sheep and 3328 hogs. Of shipments of stock, the Register is able to give the following figures for 1893, for these two counties together:

Cattle, 360 carloads, worth on the car.....	\$270,000
Hogs, 484 " " " " " " " " " " " "	\$17,800
Sheep, 716 " " " " " " " " " " " "	190,000
Horses, 215 head, " " " " " " " " " " " "	20,000
Total.....	\$808,800

If prices have not ruled high, they have not been below the point of cost of production, and those who have given attention to stock raising have made money out of it, but, like any other business, it requires close study. The dairy interest of these two counties is growing in importance, and when the time comes that we cease to import butter and eggs from our more thrifty neighboring counties of the coast and begin to export to our less thrifty counties up and down the valley, money will be more abundant with us than it has been of late. The writer noticed in a Kansas paper of recent date, that a thrifty farmer who did not relish the idea of selling wheat for 50 cents a bushel, took a band of hogs in hand and fed them wheat, and when he weighed the band out at three cents a pound he discovered that the wheat he had fed netted him \$1 per bushel. What, then, would it have netted him if he had gotten four or five cents a pound for his hogs?

Yolo.

Esparto letter: The farmers and orchardists are getting somewhat impatient with the damp weather. It is to be hoped that the balmy weather of yesterday will continue for several weeks, so that plowing may be finished and the growth of grain promoted.

Winters letter in Woodland Democrat: The Eastern commission merchants are beginning very early to spur for the business of the Winters fruit-growers.

The Acme Harrow.

Regarding the Acme Harrow Mr. Henry E. Dorsch of the Oregon State Board of Horticulture writes: "I beg to say that the No. 15 arrived and has been used in my orchards, and I desire to express to you my entire satisfaction. We never owned a tool that did such excellent work in every particular, and if we could not buy another, its weight in gold would not induce me to part with this one. There is no jerking motion, or stopping to pull up the sage and weeds, but it moves right along smoothly. Owing to the low branching of our trees, we use a pair of 600 pound ponies, that walk right along with it all day. It is not only a pleasure to see it work, but a pleasure to work with it. I hope the 'ACME' may become as plentiful in Oregon as red apples."



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Orange Grove & Peach Orchard

In one of the best EARLY Fruit Sections of the State, together with a nursery of Orange, Lemon and Deciduous Trees, for sale at less than its real value.

Particulars of the estate by addressing

H. F. DEXTER, Care "Pacific Rural Press."

LOANS AND MINES.

Loans negotiated on first-class securities. Mines and mining prospects of guaranteed value sold on working bonds. O. H. DWINELLE, Grand Hotel, San Francisco, Cal.

The Solar Corona.

Professor Schaeberle, of Lick Observatory fame, lectured at the University of California last week. "On account of the scope of the subject," said the astronomer, "I will have to limit myself to the corona of the sun. Before entering upon that, however, it will be necessary, to make my succeeding remarks intelligible, to review in a brief outline the principal points concerning the present knowledge of matter in space."

The lecturer then referred to the state of matter existing in the solar system, and gave in brief the present theory of the evolution of the system. The law of mechanics, that any contracting body of space will attain a rotary motion, was especially emphasized; also another definite law, that the angular velocity of rotation increases as a body contracts.

Then there appeared upon the screen a number of photographs and drawings of the sun, showing the spots, the protuberances and the coronal light. Many of these were from the Lick, others from the Harvard Observatory, and one from the University of Chicago.

"Formerly the corona could be seen and photographed only during a complete eclipse, but now, by an ingenious device, photographs showing the coronal streamers can be taken any time," said the lecturer. "These flames dart out sometimes 200 miles in one second. This motion can be seen frequently by the observer."

The speaker pointed out on all of the views of the sun's disc the excess of matter near the equatorial region, forming two indistinct bands surrounding the spheroid mass and at about 15 degrees latitude on each side of the equator. The excess of matter in the vicinity of the equatorial region is always to be observed of the corona.

About four years ago the mechanical theory of the corona and the spots was promulgated. This is, in substance, that all matter that goes to make up the luminous corona comes from the interior of the body toward the surface, according to well-known mechanical laws. This theory was hit upon by constructing a model of the sun and reproducing the conditions conceived as existing therein.

Professor Schaeberle then narrated in some detail the difficulties in the way of a successful trip to Chile one year ago.

"My trip to South America," said the lecturer, "was for the purpose of photographing the sun's disc to show the corona. I resolved to perfect some arrangement by which I could procure larger images. This was done by the aid of an improvised telescope, and the resulting views show coronal streamers, a phenomenon never before photographed.

"At this point I must speak of a theory of the coronal light, which has occupied considerable attention from astronomers—the magnetic theory. This explains the curves of the corona by supposing them to be due to magnetic forces organized about magnetic poles of the sun. The falsity of this theory is demonstrated by several of the photographs obtained in the Andes.

"Whatever theory is put forth to explain the sun spots and coronal border must rest upon laws of mechanics, and upon the further fact that the body in question is a rotating, incandescent liquid or gaseous sphere. Such a body is cooler on the surface than at the interior; hence it would have circulating currents from the interior to the surface. Now, if the body rotates also, then the currents moving outward would be deflected toward the equator with a gradual but continuous speed. Thus an equatorial band of gaseous or liquid matter will accumulate with two weak spots on each side of the equator. The continual rotation of the body will cause these weak and strong spots to change relative positions constantly, and this explains entirely the periodicity of the sun eruptions causing the coronal streamers. This condition of things must obtain in every rotating, incandescent, gaseous or liquid spheroid, whether sun or some other body."

Beware of Ointments for Catarrh That Contain Mercury.

As mercury will surely destroy the sense of smell and completely derange the whole system when entering it through the mucous surfaces. Such articles should never be used except on prescriptions from reputable physicians, as the damage they will do is tenfold to the good you can possibly derive from them. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., contains no mercury, and is taken internally, acting directly upon the blood and mucous surfaces of the system. In buying Hall's Catarrh Cure be sure you get the genuine. It is taken internally, and made in Toledo, Ohio, by F. J. Cheney & Co. Testimonials free.

Sold by Druggists, price 75c. per bottle.

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Bartlett Pears, Plums and Prunes
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Special Rates on Large Orders.
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GRAPE VINES and PLANTS.

Tokay, Emperor, Cornichon, Black
Ferrara, Black Morocco, Muscatel,
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\$5 and \$6 per 1000.

BLACKBERRY—Crandall's Early and Law-
ton, \$5 per 1000.

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L. D. BUTT,

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12 Roses,

15 Carnations,

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15 Geraniums,

15 Heliotropes,



20 Assorted Summer Flow-
ering Plants,

12 Dahlias,

12 Coleus,

12 Climbing Plants,

10 Oleanders,

24 Pansies,

DISTINCT VARIETIES. ALL PLANTS LABELED. TRUE TO NAME.

Grallert & Co., Florists,
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FRUIT TREES. FRUIT TREES.

—GRAPE VINES.—

Also Fine Stock of Shade and Ornamental Trees, Shrubs, Palms, Roses and Carnations.

PLANTS IN GREAT VARIETY.

Correspondence Solicited.

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NEW CATALOGUES NOW READY.

Fruit, Nut and Shade Trees, Grape Vines, Etc., Citrus Fruits, Ornamental Shrubs,
Flowering Plants, Roses, Palms, Bulbs, Seeds, Etc.

Fruit and Nut Trees propagated from bearing orchards at Sausal Fruit Farm; Unirrigated, Clean and Healthy.
Do not fail to correspond before making purchases. Satisfaction guaranteed.

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ALL KINDS OF

Nursery Stock.

Send and get book on Olive Culture.

HOWLAND BROS.,

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**Santa Rosa
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ROBE DE SERGENT on Myrobalan or Marlauna,
REMARKABLY CHEAP.

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ALL WARRANTED CLEAN, TRUE TO NAME AND
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Grass, Clover, Vegetable and Flower Seeds,
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LARGEST STOCK AND
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Illustrated, Descriptive and Priced Seed Catalogue for
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E. J. BOWEN,

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**TREES and PLANTS.**

A fine assortment, best varieties, free from pests of
any kind. Frons Simoni, Bing, Kostraver and
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Rice Soft Shell and other Almonds, American
Sweet Chestnuts, Prunella, American
Hardy mountain grown Orange Trees. Our Oranges
have stood 25 degrees this winter without injury.
Dollar Strawberry, the best berry for home use or
market. Address C. M. SILVA & SON, Lincoln,
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LEMON TREES FOR SALE.

I have some 15,000 Lisbon and Eureka Lemon trees,
budded from my own bearing orchard, for sale cheap.

NATHAN W. BLANCHARD, Santa Paula, Cal.

News in Brief.

—Judge Fullerton has ordered the sale of the Oregon Pacific Railroad at a date no later than June 1st, the date to be fixed by the sheriff. Bidders will be required to make a deposit of \$200,000.

—To facilitate work on the ditch of the Consolidated Canal Company at Mesa, A. T., a steam shovel has been secured. An electric-light plant has been obtained, and work will be carried on night and day.

—It is definitely stated that work will be resumed on Humboldt bar April 1st. This means the resumption of work at the quarries, in the woods and at the mills. The resumption of work will give employment to a large force of men.

—The Peoria canal at Gila Bend, A. T., is 40 miles long and covers 50,000 acres. The dam is being completed as rapidly as possible, 160 men being employed in its construction. When finished it will be 1920 feet long, 17 feet high and 32 feet wide.

—A Chicago company is figuring on buying Santa Rosa's water works, but insists that a quarter of the stock should be taken in Santa Rosa. This is to quiet the feeling of opposition that has developed among the people. It is proposed, if a proper understanding can be reached, to put \$500,000 into the enterprise.

—During the year an average of 1,000,000 feet of lumber a month has been put out by Pasadena lumber yards for use there. This gives 12,000,000 feet for the whole year (to December 31, 1893), which at an average price of \$20 per 1000 gives \$240,000 as the total expenditure for building material of this kind during 1893.

—Otto von Geldern, the well-known civil engineer, has been retained by the directors of Modesto Irrigation District to make surveys and estimates for the completion of the flumes and canal of the Modesto district. There remain about 4000 feet of flume to be constructed and a small portion of the work in the canal to survey.

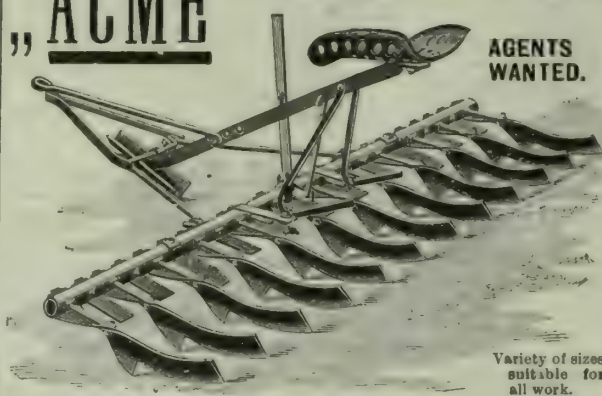
—An Ottawa dispatch to the Victoria Colonist says that the Government has entered into a ten-years contract with James Huddart, subject to the sanction of Parliament, for a line of Canadian Atlantic steamers, capable of steaming 20 knots an hour, to connect with Australian steamers by the Canadian Pacific railway. Quebec and Halifax are to be the Atlantic terminals. It is expected that the Imperial Government will handsomely subsidize the service.

—M. Cohn, Charles Kelley and other leading Carson merchants have combined and propose to put on freight teams between Carson and Sacramento. They say the steamers will land freight in Sacramento from San Francisco for \$2 a ton, and, with the assistance of steam wagons, they can haul seven or eight freighters to the foot of the Kingsbury grade, via Placerville, then teaming to Carson can land freight there for one cent a pound. It is proposed to erect a big commission and storehouse, which will be stocked to draw on during the winter, when the roads are impassable.

Horse-Power.

Horse-power measures the rate at which work is done. One horse-power is reckoned as equivalent to raising 33,000 pounds one foot high per minute, or 550 pounds a second. In measuring the work of a horse the estimates of the most celebrated engineers differ widely from each other: Boulton and Watt, basing their calculations upon the work of London dray horses working eight hours a day, estimated it at 33,000 foot pounds per minute. D'Aubisson, taking the work done by horses in whims at Freiburg, estimated the work at 16,440 foot pounds working eight hours a day. Under similar circumstances Desaguliers' estimate was 44,000, Smeaton's 22,000, and Treadgold's 27,500 foot pounds. Horse-power is called nominal, indicated or actual. Nominal is used by manufacturers of steam engines to express the capacity of an engine, the element being confined to the dimensions of the steam cylinder, and a conventional pressure of steam and speed of piston. Indicated shows the full capacity of the cylinder in operation without deductions for friction, and actual marks its power as developed in operation involving elements of mean pressure upon the piston, its velocity, and a just deduction for the friction of the engine's operation. The original estimate of Watt is still counted a horse-power. The general rule for calculating the horse-power of a steam engine is to multiply together the pressure in pounds on a square inch of the piston, the area of the piston in inches, the length of the stroke in feet and the number of strokes per minute. The result divided by 33,000 will give the horse-power.

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Is adapted to all soils and all work for which a Harrow is needed.

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Made entirely of cast steel and wrought iron and therefore practically indestructible.

CHEAPEST RIDING HARROW ON EARTH—sells for about the same as an ordinary drag.

I deliver free on board at SAN FRANCISCO and PORTLAND.

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CHAMPION SPRAY PUMP.

As will be seen from the illustration, the pump is very compact and strong. It is perfectly double-acting and has a brass-lined cylinder. The motion of the piston is horizontal. The handle is so arranged that the leverage is very powerful, and the movement is easy and natural. The air chamber is unusually large, admitting of the continuous and even discharge necessary for good and thorough spraying.

The valves are metal and have metal seats. They all lie directly beneath the air chamber and are readily exposed on loosening four bolts, and without touching the cylinder. The pump has a double suction and a double discharge, one each on either side. The cut above shows the pump in operation with four lines of discharge hose. It can be readily arranged for a less number if desired. With this pump one can easily keep four men busy spraying, as well as attend to the team and the stirring of the liquid. These pumps are superior to any others made.

Send for catalogue, mailed free.

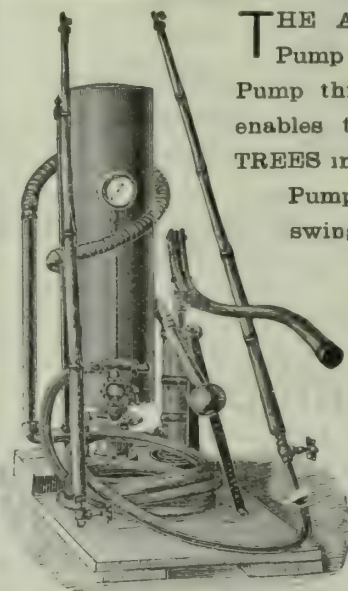


EUREKA SPRAY PUMP.

We have had this pump constructed especially for the purpose intended. It has great strength, and is simple in its construction. There is nothing to get out of order. It is so arranged that it can be set on the top of an ordinary barrel. With the large air chamber, you are capable of throwing a very fine and regular spray. The top or handle of the pump can be revolved to any position, to meet the requirements of the operator. It is operated very easily, and is not laborious to the party using the pump. The valves are very accessible. In fact there is no cheaper or better pump made than the Eureka. The annexed cut is a true illustration of the pump. Send for special catalogue and prices, mailed free. We carry a full line of all kinds of SPRAY NOZZLES, HOSE, etc.

WOODIN & LITTLE,

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THE ATTENTION of those desiring a Spray Pump is called to this cut. The Bean Spray Pump throws a CONTINUOUS spray, which enables the operators to spray MANY MORE TREES in a day than could be done with other Pumps. The men who operate the sprays can swing them onto the next tree and keep spraying while the pumper is driving. Time is money. These pumps are in use in every fruit-growing county and town on the coast and are the favorite. THE BEAN and NEW BEAN NOZZLES HAVE NO EQUAL. See them at Midwinter Fair.

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PROTECT YOUR TREES

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Gilman's Patent Tule Tree Protector.

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Cheapest Best and Only One to Protect Trees and Vines from Frost, Sunburn, Rabbits, Squirrels, Borers and other Tree Pests. For Testimonials from Parties who are using them send for Descriptive Circulars.

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SPRAY & FORCE PUMP
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ALL BRASS FOR \$250.
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Reserve Fund and Undivided Profits, 130,000
Dividends paid to Stockholders.... 533,000

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January 1, 1894. A. MONTPELLIER, Manager.

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Manufactured by G. LISSENDEN.

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This implement will take up and carry its load to any desired distance. It will distribute the dirt evenly or deposit its load in bulk as desired. It will do the work of Scraper, Grader, and Carrier. Thousands of these Scrapers are in use in all parts of the country.

Price, all Steel, four-horse, \$40; Steel two-horse, \$31. Address all orders to G. LISSENDEN, Stockton, California.

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FRUIT TREES
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Stahl's Double Action
Excellent Spraying
Outlets present
Leaf Blight & Wormy
Fruit. Insures a heavy
yield of all Fruit and
Vegetable crops. These
are in use. Send 6c for
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WM. STAHL, Quincy, Ill.

ORANGE CULTURE IN CALIFORNIA.

Now that the interest in the culture of the orange is extending so as to embrace nearly all parts of the State, a book giving the results of experience in parts of the State where the growth of the fruit has been longest pursued will be found of wide usefulness.

"Orange Culture in California" was written by Thos. A. Garey of Los Angeles, after many years of practical experience and observation in the growth of the fruit. It is a well-printed hand-book of 227 pages, and treats of nursery practice, planting of orange orchards, cultivation and irrigation, pruning, estimates of cost of plantations, best varieties, etc.

The book is sent post-paid at the reduced price of 75 cents per copy, in cloth binding. Address DEWEY PUBLISHING CO., Publishers "Pacific Rural Press," 297 Market St., San Francisco.

S. H. MARKET REPORT

Market Review.

SAN FRANCISCO, March 14, 1894.

Wheat.

The sample market is very slow of movement, while the promise is not encouraging for strength in values. The feeling in speculative circles is a little more subdued than it was a week ago, but the situation is such that it can be readily handled in the interest of manipulation either up or down. For shipping purposes, 95c per cbl. is a full figure for standard Wheat, though a really choice parcel might bring 96 1/2 @ 97 1/2 c. Milling grades are steady at \$1.05 per cbl.

Barley.

The situation is a disappointment to holders. The inquiry is very slow, and no transactions of magnitude are under consideration. This lack of activity tends also to give depressed feeling to values, though holders are stubborn and resist all efforts to force lower figures. We quote as follows: Feed, 70 @ 72 1/2 c per cbl for fair to good quality and 73 1/2 @ 75 c for choice bright; brewing, 80 @ 87 1/2 c per cbl.

Dried Fruits.

Sellers have the advantage, stocks generally being light. Prunes are receiving mere attention, and offerings are less liberal. We quote: Apples, 5 1/2 @ 6 c per lb for quartered, 5 1/2 @ 6 c for sliced, and 8 @ 9 c for evaporated; Pears, 4 @ 5 c per lb for bleached halves, and 3 @ 4 c for quarters; bleached Peaches, 7 @ 9 c; sun-dried peaches, 5 @ 6 c; Apricots, Moorpark, 11 1/2 @ 12 1/2 c; do Royals, 10 @ 12 c for bleached and 6 @ 7 c for sun-dried; Prunes, 4 1/2 c per lb for the four sizes, 4 1/4 @ 4 1/2 c for the five sizes, and 2 1/2 @ 4 c for ungraded; Plums, 4 @ 4 1/2 c for pitted and 1 1/2 to 2 c for unpitted; Figs, 3 to 4 c for pressed and 1 1/2 to 2 c for unpressed; White Nectarines, 7 to 8 c; Red Nectarines, 6 to 7 c per lb. RAISINS—Some demand prevails, and values seem to be steadying. Supplies continue fairly free. London Layers, 75c to \$1.15; loose Muscatels, in boxes, 50 @ 75 c; clusters, \$1.50 to \$1.75; loose Muscatels, in sacks, 2 1/2 to 2 3/4 c per pound for 3 crown, and 2 c for 2 crown; Dried Grapes, 1 1/2 to 1 3/4 c per pound.

General Produce Market.

OATS—Supplies continue of liberal proportions, while prices remain of easy character all round. Even with brisker trade it is hardly probable that there would be any special improvement in values, as there are ample stocks for custom to draw from. Milling, \$1.05 @ \$1.15; Surprise, \$1.17 1/2 @ \$1.25; fancy feed, \$1.12 1/2 @ \$1.15; good to choice, \$1.05 @ \$1.10; poor to fair, 80c @ \$1; Black, nominal; Red, nominal; Gray, \$1 @ \$1.10 per cbl. CORN—Prices show steady tone. Quotable at 90 @ 92 1/2 c per cbl for large Yellow, 90 @ 92 1/2 c for small Yellow, and \$1 @ \$1.10 for White. CRACKED CORN—Quotable at \$20.50 @ \$21.50 per ton. CORNMEAL—Millers quote feed at \$20 to \$21 per ton; fine kinds for the table, in large and small packages, 2 1/2 @ 3 1/4 c per pound. OILCAKE MEAL—Quotable at \$37.50 per ton from the mill.

SEEDS—We quote: Mustard, brown, \$2 to \$2.25; Yellow, \$2.75 @ \$3; Trieste, \$2.25 @ \$2.50; Canary, imported, \$4 @ \$4.25; do, California, —; Hemp, 3 1/2 c per lb; Rape, 1 1/2 @ 2 1/4 c; Timothy, 6 1/2 c per lb; Alfalfa, 7c per lb for California and 8 @ 8 1/2 c for Utah; Flax, \$2.25 @ \$2.50 per cbl. CHOPPED FEED—Quotable at \$17.50 @ \$18.50 per ton. MIDDINGS—Quotable at \$17 @ \$20 per ton. MILLSTUFFS—We quote: Rye Flour, 3 1/2 c; Rye Meal, 3c; Graham Flour, 3c; Oatmeal, 4 1/2 c; Oat Groats, 5c; Cracked Wheat, 3 1/2 c; Buckwheat Flour, 5 @ 5 1/2 c; Pearl Barley, 4 @ 4 1/2 c per lb; Normal Nutrient, \$3 per case of 1 dozen cans; Breakfast Delight, \$3.25 per case of 2 dozen packages. BRAN—Quotable at \$16 @ \$17 per ton. HAY—The inquiry is not very lively. Wire-bound hay sells at \$1 per ton less than rope-bound hay. Following are wholesale city prices for rope-bound hay: Wheat, \$9 @ \$13 1/2; Wheat and Oat, \$9 @ \$12 1/2; Wild Oat, \$9 @ \$11 1/2; Alfalfa, \$8 @ \$10; Barley, \$9 @ \$10 1/2; Compressed, \$8 @ \$11 1/2; Stock, \$7 @ \$8 per ton. STRAW—Quotable at 55 @ 65c per bale. HOPS—The market is very dull. Quotable at 15 1/2 @ 17 1/2 c per lb. RYE—Quotable at 92 1/2 @ 96 1/2 c per cbl. BUCKWHEAT—Quotable at \$1.15 @ \$1.20 per cbl. GROUND BARLEY—Quotable at \$16.50 @ \$17.50 per ton. POTATOES—Offerings continue large. Receipts to-day include 6600 sks from Oregon. We quote: Sweet, 40 @ 75c per cbl; Early Rose, 45 @ 55c; River Burbanks, 30 @ 50c; River Red, 30 @ 35c; Salinas Burbanks, 75 @ 90c; Oregon Burbanks, 75 @ 85c; Oregon Garnet Chiles, 55 @ 65c per cbl. ONIONS—Quotable at \$1.50 @ \$2.40 per cbl. DRIED PEAS—We quote: Green, \$1.40 @ \$1.50; Blackeye, \$1.60 @ \$1.70; Niles, \$1.50 @ \$1.75 per cbl. BEANS—There is a wider range in prices of Pinks, owing to difference in quality. We quote as follows: Bayos, \$1.90 @ \$2.10; Butter, \$1.75 @ \$1.90 for small and \$1.95 @ \$2 for large; Pink, \$1.30 @ \$1.62 1/2; Red, \$2 @ \$2.25; Lima, \$2 @ \$2.10; Pea, \$2.25 @ \$2.35; Small White, \$2 @ \$2.15; Large White, \$2 @ \$2.12 1/2 per cbl. VEGETABLES—We quote as follows: Asparagus, 10 @ 17c per lb for the ordinary run and 17 1/2 to 20 cents for fancy; Mushrooms, 10 @ 15c per lb for common and 20 @ 25c per lb for good to choice; Rhubarb, 8 @ 10c per lb; Green Peas, 4 @ 6c; String Beans, — @ — c per lb; Marrowfat Squash, \$15 @ \$17.50 per ton; Green Peppers, 30c per lb; Tomatoes, \$1.50 @ \$2.00 per box; Turnips, 75c per cbl; Beets, 75c per sack; Parsnips, \$1.25 per cbl; Carrots, 35 @ 40c; Cabbage, 50 @ 55c; Garlic, 1 1/4 @ 2 1/4 c per lb; Cauliflower, 60 @ 70c per dozen; Dry Peppers, 10c per lb; Dry Okra, 15c per lb. FRESH FRUIT—Choice Apples still sell to advantage, but common Apples meet with poor demand. We quote as follows: Apples, \$1.25 @

\$1.75 per box for good to choice, and 50 @ \$1 for common to fair; Choice Mountain Apples, \$1.50 @ 2 per box.

CITRUS FRUIT—Prices keep steady, as receipts are not large enough to overstock the market. Some very good fruit is now seen among offerings. Fair to choice Navel Oranges, \$1 @ 2 per box; Seedlings, 75c @ \$1.25; Mandarin Oranges, 40 @ 50c per box; Mexican Limes, \$4 @ 4.50 per box; California Limes, \$1 @ 1.50 per small box; \$2.50 @ 3.25 per large box; Lemons, Sicily, \$4 @ 5; California Lemons, \$1 @ 1.25 for common; \$1.50 @ 2.50 for good to choice; Bananas, \$1.50 @ 2.50 per bunch; Hawaiian Pineapples, \$2.50 @ 3; Mexican Pineapples, \$3 @ 4 per dozen.

NUTS—Quiet market, with no change in values. We quote: Chestnuts, 6 @ 8c per lb; Walnuts, 6 @ 7 1/2 c for hard shell, 8 @ 9c for soft shell and 8 @ 9c for paper shell; Chile Walnuts, — @ — c; California Almonds, 10 @ 11c for soft shell, 6 @ 7c for hard shell and 11 1/2 @ 12 1/2 c for paper shell; Peanuts, 3 @ 4c; Hickory Nuts, 5 @ 6c; Filberts, 10 @ 10 1/2 c; Pecans, 5 @ 8c for rough and 8 @ 10c for polished; Brazil Nuts, 10 @ 11c; Coconuts, \$5 @ \$5.50 per 100.

HONEY—A shipment of 700 cases goes to Germany to-day on a sailing vessel. Trade generally quiet. We quote: Comb, 10 @ 11c per lb for bright and 8 @ 9c for dark to light amber; water white extracted, 5 @ 5 1/2 c; amber extracted, 4 1/2 c to 5c; dark, 4 1/2 c to 4 3/4 c per lb.

BEEFWAX—Quotable at 23 @ 25c per lb.

BUTTER—Quotations for fresh Butter have now touched so low a point that it hardly seems as if there could be any further decline. But supplies show no diminution, and there is possibility of a yet lower range of values being established before bottom figures be reached. We quote: Fancy Creamery, 20 @ 21c; fancy dairy, 18 @ 19c; good to choice, 16 1/2 @ 17 1/2 c; common grades, 15 @ 16 1/2 c per lb; store lots, 11 @ 15c; pickled roll, 14 @ 18c; firkin, nominal.

CHEESE—Is cheaper, under increasing arrivals. We quote as follows: Choice to fancy, 11 @ 12c; fair to good, 9 @ 10 1/2 c; Eastern, ordinary to fine, 11 @ 14c per lb.

EGGS—There is good demand, but stocks are ample for all existing needs. We quote: California ranch, 15 @ 16c; store lots, 13 @ 14c per dozen.

POULTRY—No scarcity of anything. Both Eastern and domestic fowls are well represented. We quote as follows: Live Turkeys—Gobblers, 10 @ 11c; Hens, 13 @ 14c; dressed Turkeys, 13 @ 15c per lb; Roosters, \$3.50 @ 4 for old and \$5.50 @ 6.50 for young; Broilers, \$4 @ 6; Hens, \$3.50 @ 5; Ducks, \$4.50 @ 6; Geese, \$1.50 @ 2 per pair; Pigeons, \$2.25 @ 2.50 per doz for old and \$2.50 @ 3 for young.

GAME—Quiet trade. We quote: Gray Geese, \$2; White Geese, 65 @ 75c; Brant, \$1 @ 1.25; Honkers, \$3 @ 4; Hare, \$1 @ 1.25; Rabbits, \$1.25 @ \$1.50 per doz.

PROVISIONS—We quote as follows: Eastern Sugar-cured Hams, 12c; California do, 10 @ 11c; Bacon, Eastern, extra light, 12c; medium, 9 1/2 c; do, light, 10c; do, light, boneless, 11 1/2 c; light, medium, boneless, 10 1/2 c; extra light, sugar-cured, 13 1/2 c; Pork, prime mess, \$14 @ 15; do, mess, \$17 @ 18; do, clear, \$19.50; do, family, \$22 @ bbl; Pigs' Feet, \$11.50 per bbl; Beef, mess, bbls, \$7.50 @ 8; do extra mess, bbls, \$8.50 @ 9; do, family, \$9.50 @ 10; extra do, \$11 @ 11.50 per bbl; do, smoked, 10c; Eastern lard, tierces, 7 1/2 @ 7 3/4 c; do prime steam, 9 1/2 c; Eastern pure, 10-lb pails, 10c; 5-lb pails, 10 1/2 c; 3-lb pails, 10 1/2 c; California, 10-lb tins, 9c; do, 5-lb, 9 1/2 c; do, kegs, 10c; do, 20-lb buckets, 9 1/2 c; compound, 7c for tierces.

WOOL—Values nominal, there being so little trade. Within a couple of weeks shearing is expected to be general in the southern counties. It is expected that the bulk of the clip from that direction will be dusty and heavy owing to the light rain down there this season. We quote fall: Free Mountain, 6 @ 8c; Northern defective, 5 @ 7c; Southern and San Joaquin, 3 @ 5c.

HIDES AND SKINS—Sumner & Co.'s circular says: "We cannot offer much encouragement for better values for hides. The market remains about the same as last quoted, with little activity in trade. Heavy and medium steers are in fair demand, and light hides very dull and very quiet. We would advise butchers not to hold their hides for better prices as the chance for an advance is very small, and the money which a lot of hides will net can be used to better advantage than by speculating for higher figures. We would caution butchers that hides cannot be kept on hand with safety over five or six months, as the salt used in curing hides in California will not preserve hides beyond such time. Hides in a salt pile for any length of time are almost sure to damage, and the loss by tainting is often quite serious. A butcher should, as a rule, sell his hides every month or six weeks." Quotable as follows:

	Sound.	Culls.
Heavy Steers, 54 lbs up, 1/2 lb.	4 1/2 @ 5c	3 1/2 @ 4c
Medium Steers, 48 to 56 lbs.	4 @ — c	3 @ — c
Light, 42 to 47 lbs.	3 1/2 @ 3 3/4 c	2 1/2 @ 2 3/4 c
Cows, over 50 lbs.	3 1/2 @ 3 3/4 c	3 @ — c
Light Cows, 30 to 50 lbs.	3 1/2 @ 3 3/4 c	2 1/2 @ — c
Stags,	3 @ — c	2 @ — c
Kips, 17 to 30 lbs.	4 @ — c	3 @ — c
Veal Skins, 10 to 17 lbs.	5 @ — c	4 @ — c
Calf Skins, 5 to 10 lbs.	7 @ — c	6 @ — c

Dry Hides, usual selection, 7c; Dry Kips, 7c; Calf Skins, do, 7c; Cull Hides, Kip and Calf, 4c; Pelts, Shearling, 10 @ 20c each; do, short, 25 @ 35c each; do, medium, 40 @ 50c each; do, long wool, 50 @ 75c each; Deer Skins, summer, 25c; do, good medium, 15 @ 20c; do, winter, 5c per lb; Goat Skins, 25 @ 40c apiece for prime to perfect, 10 @ 20c for damaged, and 5 @ 10c each for Kids.

TALLOW—We quote: Refined, 5 1/2 @ 5 3/4 c; rendered, 4 1/2 @ 4 3/4 c; country Tallow, 4 @ 4 1/2 c; Grease, 3 @ 4c per lb.

San Francisco Meat Market.

Beef is easy at current rates. Mutton is cheaper, on account of larger receipts. Following are the rates for whole carcasses from slaughterers to dealers:

BEEF—First quality, 5 1/2 @ 6c; second quality, 4 1/2 @ 5c; third quality, 3 1/2 @ 4 1/2 c per lb.

CALVES—Quotable at 4 @ 5c for large, and 5 @ 8c per lb for small.

MUTTON—Quotable at 6 @ 7c per lb.

LAMB—Yearlings, 6 1/2 @ 7 1/2 c per lb; Spring, 12 1/2 c per lb.

PORK—Live Hogs, on foot, grain fed, heavy and medium, 4 1/2 c; small Hogs, 5 1/2 c; stock Hogs, 4 1/2 c; dressed Hogs, 7 @ 7 1/2 c per lb.

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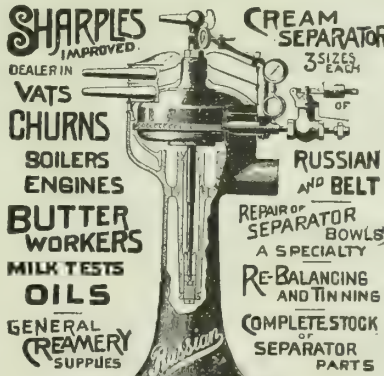
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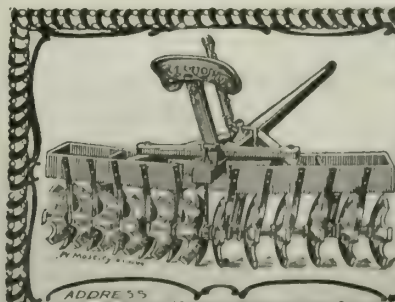
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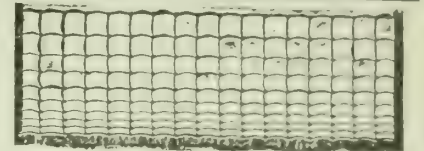
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The Secretary's Column.

(Continued from page 212.)

This office has received the list of county and State deputies, and in a few days a circular will be sent to each grange in the State containing the topics suggested by the worthy lecturer of State Grange for discussion and the name and address of each of the county and State deputies.

The commissions of the county deputies are being issued as fast as possible. Attention is called to the instructions forwarded to each deputy with his commission, which, if followed, will be of great assistance to those parties in their work during the year.

Address all communications for California State Grange to Don Mills, Santa Rosa, Cal.

The Grange Congress.

The Executive Committee of the State Grange announces the following programme for the Grange Congress to be held at the Midwinter Fair in this city April 13th and 14th:

FRIDAY, 2 P. M., APRIL 13, 1894.

- 1—Opening Chorus.....Choir
- 2—Prayer.....A. T. Perkins, Temescal
- 3—Instrumental Music.....
- 4—Address of Welcome.....Hon. M. H. De Young
- 5—Response.....Master California State Grange
A. P. Roache.
- 6—Song.....Grange Choir
- 7—Address.....Lecturer of National Grange
Hon. Alpha Messer.
- 8—Recitation.....Watsonville Grange
- 9—Grange Chorus.....
- 10—Extra.....

7:30 P. M., FRIDAY, APRIL 13, 1894.

- 1—Grange Chorus.....
- 2—Address....."Women as Horticulturists."
Mrs. E. L. Watson.
- 3—Solo.....Sacramento Grange
- 4—"Progress and Future of the Dairy Interest."
E. W. Steele, San Luis Obispo.
- 5—Paper.....B. F. Walton, Yuba City
President State Fruit Exchange.
- 6—Instrumental Music.....Stockton Grange
- 7—"Education in Its Relation to Agriculture."
Frank S. Chapin, Tulare Grange.
- 8—Music.....
- 9—Extra.....

2 P. M., SATURDAY, APRIL 14, 1894.

- 1—Grange Chorus.....
 - 2—"Agriculture in Relation to National Progress."
Hon. E. W. Davis.
 - 3—Quartette.....Stockton Grange
 - 4—"Horticulture in Its Relation to California
Agriculture".....Hon. N. P. Chipman
 - 5—Vocal Solo with piano and flute.....San Jose Grange
 - 6—Extra.....
- 7:30 P. M., SATURDAY, APRIL 14, 1894.
- 1—Grange Chorus.....
 - 2—Address.....State Lecturer
S. S. Goodenough, Temescal.
 - 3—Song.....Eden Grange
 - 4—Essay.....Mrs. R. Taylor, Pescadero
 - 5—Extra.....American River Grange
 - 6—Instrumental Solo.....San Jose Grange
 - 7—Address.....Sacramento Grange
 - 8—Grand Closing Ode.....By the Choir
 - 9—Extra.....

This programme is subject to change by the Executive Committee.

From Pescadero.

"E. A. L." writes from Pescadero that Mr. Geo. H. Steele and Miss Lizzie Chrisman have been appointed to represent Pescadero Grange at the coming Grange Congress. Sister Taylor has volunteered to read an essay on that occasion, subject not yet announced. Several members of Pescadero have announced their intention of attending the congress.

The subject of Transportation, appointed for discussion by the State lecturer, came up at the last meeting, but nobody had anything to say about it, and so it was laid over.

The social and educational features of the grange are being brought to the front as never before. Education in the grange means not only a better knowledge of farming and all that relates to farm life, but it means a better knowledge of economic questions and such matters of legislation as relate to public interests.

Estelle: "And are you going to leave me so soon, Augustus?" Augustus: "Yes, love, I would willingly give ten years of my life if I could stay longer. But if I don't go I shall be fined a quarter for being late at our debating society."

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Quick is the succession of human events. The cares of to-day are seldom the cares of to-morrow, and when we lie down at night we may safely say to most of our troubles, "Ye have done your worst and we shall meet no more."—Cowper.

The Discovery of the Glacial Epoch.

It is a little more than 50 years ago that one of the most potent agents in modifying the surface features of our country was first recognized. Before 1840, when Agassiz accompanied Buckland to Scotland, the Lake district and Wales, discovering everywhere the same indications of the former presence of glaciers as they are to be found so abundantly in Switzerland, no geologist had conceived the possibility of a recent glacial epoch in the temperate portion of the northern hemisphere. From that year, however, a new science came into existence, and it was recognized that only by a careful study of existing glaciers, of the nature of the work they now do, and of the indications of the work they have done in past ages, could well explain many curious phenomena that had hitherto been vaguely regarded as indications of diluvial agency.

One of the first fruits of the new science was the conversion of the author of Reliquiae Diluvianae—Dr. Buckland—who, having studied the work of glaciers in Switzerland in company with Agassiz, became convinced that numerous phenomena he had observed in this country could only be due to the very same causes. In November, 1840, he read a paper before the Geological Society on the Evidences of Glaciers in Scotland and the North of England, and from that time to the present the study of glaciers and of their work has been systematically pursued with a large amount of success.—From the Ice Age and its Work, by Alfred R. Wallace, in Popular Science Monthly for March.

List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR WEEK ENDING FEB. 27, 1894.

- 515,323.—MUSICAL INSTRUMENT—H. G. Carswell, Santa Clara, Cal.
- 515,544.—CHECK BOOK—T. A. Fairbairn, San Diego, Cal.
- 515,545.—VISE—J. W. Flowers, Newport, Or.
- 515,522.—RULER—F. Frank, Calistoga, Cal.
- 515,546.—SAGEBRUSH CUTTER—Froman & Murray, Vale, Or.
- 515,569.—GAS BURNER—H. A. Fry, S. F.
- 515,571.—MUSICAL INSTRUMENT—I. S. Goldman, Los Angeles, Cal.
- 515,524.—ENVELOPER—Max Grube, S. F.
- 515,470.—DRAWING BEER—C. Harth, S. F.
- 515,475.—PUMP—C. A. Kelley, Oakdale, Cal.
- 515,343.—FRUIT DRIER—C. J. Kurtz, Salem, Or.
- 515,601.—CAR VESTIBULE—L. S. Manning, Alessandro, Cal.
- 515,602.—CAR DOOR—L. S. Manning, Alessandro, Cal.
- 515,543.—BOAT—A. Martz, S. F.
- 515,550.—GAUGE FOR RULES—J. J. McManus, S. F.
- 515,530.—GAS ENGINE—E. Narjot, S. F.
- 515,358.—SEPARATOR—J. Overholser, Cottage Grove, Or.
- 515,561.—INSECT TRAP—R. J. & R. S. A. Tarbell, Los Angeles, Cal.
- 515,380.—STEAM STAMP—C. W. Tremain, Portland, Or.
- 515,541.—DRAWING FORM—J. M. Walters, Los Angeles, Cal.
- 515,566.—STAMPING MACHINE—S. B. Whitehead, S. F.
- 515,455.—SALVE—Wilson & Wores, Tucson, A. T.

NOTE.—Copies of U. S. and Foreign patents furnished by Dewey & Co. in the shortest time possible (by mail for telegraphic order). American and Foreign patents obtained, and general patent business for Pacific Coast Inventors transacted with perfect security, at reasonable rates, and in the shortest possible time.

Cables of the World.

According to latest reports, there are in the world 104,344 miles of sub-marine telegraph cable. Of this total the various governments own 14,480 miles of cable and 21,560 of wire; the balance is owned by private companies. Where the telephone wires are overlaid, the speed of transmission is at the rate of 16,000 miles a second; where the wires are through cables under the sea, the speed is not more than 6020 miles a second.

The Best Thing Yet.

"The best thing yet." That is the way a young man put it who made arrangements to work for B. F. Johnson & Co. of Richmond, Va. You can get further information by dropping them a card.

Petty vexations may at times be petty, but still they are vexations. The smallest and the most inconsiderable annoyances are the most piercing. As small letters weary the eye most, so also the smallest affairs disturb us most.—Montaigne.

The most plain, short and lawful way to any good end is more eligible than one directly contrary in some or all these qualities.—Swift.

NOTICE.

The Annual Meeting of the Stockholders of the GRANGERS' BUSINESS ASSOCIATION, a corporation, for the election of a Board of Directors, and for the transaction of such other business as may properly come before it, will be held at No. 108 Davis Street, San Francisco, at 10 o'clock, A. M., Wednesday, April 11, 1894.

CHARLES WOOD, Secretary.

I. C. STEELE, President.

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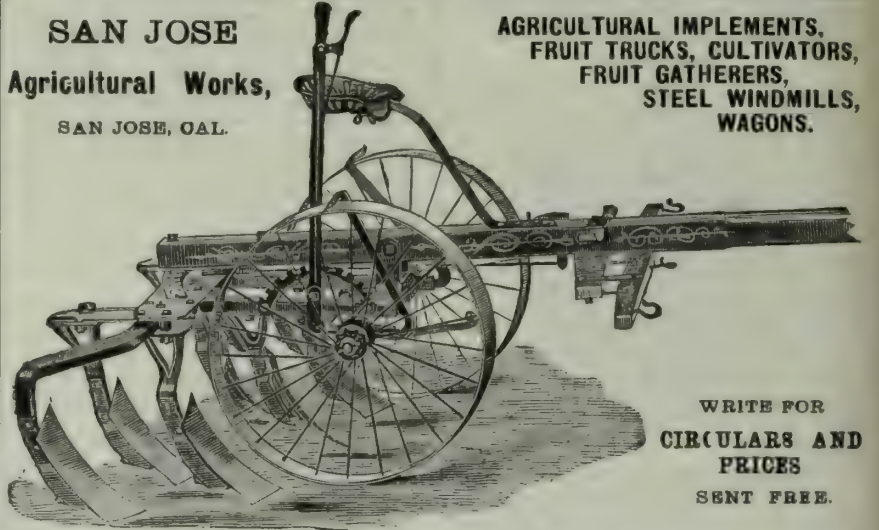
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How to Sleep Well.

In sleeping much depends on securing a comfortable position. Lying on the back would seem to give the most ease, but general experience and practice prove that it does not, and it is liable to some definite objections, says a writer in the *Jenness Miller Monthly*. In a weakly state of the heart and blood vessels, and in certain morbid conditions of the brain, the blood seems to gravitate to the back of the head, and to produce troublesome dreams. Persons who have contracted chests, and who have had pleurisy and retain adhesions of the lungs, do not sleep well on the back. Nearly all who are inclined to snore do so in that position.

For these and other reasons it is, therefore, better to lie on the side, and in lung disease to lie on the weak side, so as to leave the healthy lung free to expand. It is well to choose the right side, because, when the body is thus placed, the food gravitates more easily out of the stomach into the intestines.

Sleeping with the arm thrown over the head is to be deprecated; but this position is often assumed during sleep, because circulation is then free in the extremities and the head and neck, and the muscles in the chest are drawn up and fixed by the shoulders, and thus expansion of the thorax is easy. The chief objections to this position are that it creates a tendency to cramp and cold in the arms, and sometimes seems to cause headaches and dreams.

The best sleep is obtained when the shutters are closed so as to make the room dark, and the windows are adjusted so as to admit plenty of fresh air. Early rising is not a virtue unless the riser has secured sleep enough, and the best rising is obtained when the sleeper wakes naturally.

Lighting the Nation's Capitol.

It is probable that the electric-lighting plant to be put in the nation's Capitol will not only be required to light that building, but also to illuminate the Congressional library, which is to be the largest building of its kind in the world, and which, by reason of its uses, will require the best class of illumination.

To accommodate such a plant it will be necessary to locate the engine and dynamos in a structure erected for this special purpose. The location of the power-house is now being carefully considered, and the decision will probably be reached very soon. The house will be ornamental in appearance and will be of sufficient size to contain not only the eight dynamos necessary for the present, but also for other buildings that may be added to the group clustering around the Capitol, notably the home for the Supreme Court.

A careful estimate has placed the original cost of the building, the machinery, the wiring and general installation of the plant at \$200,000. This will insure the work to be of the best character and the plant to be of sufficient size to furnish all the light that can be used in the buildings and the grounds. The latter is a most important item in the calculations, for at present there is an utterly

inadequate illumination of the great park. It is not certain whether the grounds will be lighted by arc lamps or groups of incandescent globes. But this is a matter of detail to be settled afterward.

A rough estimate that has already been made of the cost of maintaining the new plant, which will do not only the work now done by the gas and electric plants in the Capitol building, but also the entire work of lighting the new library building and the Maltby House, shows that it will cost in the neighborhood of \$19,000.

Carbonic Acid in Air.

A paper on the value of determinations of the proportion of carbonic acid in air as a measure of the efficiency of ventilation has been contributed to the *Journal of the American Chemical Society* by Mr. E. H. Richards, who states that for the past nine years the Laboratory of Sanitary Chemistry at the Massachusetts Institute of Technology has had exceptional opportunities for investigating this subject, because the Walker building is mechanically ventilated under the direction of an expert, and is fully controlled by the engineer, who has records for all these years of the quantity and temperature of the air supplied to each room, and of the temperature of these rooms taken four times every day. During these nine years some 5000 determinations of the carbonic acid have been made in these rooms by 200 students. Many problems arising out of these circumstances have been studied and reported upon, but the net gain of knowledge appears to be meager. The outer air surrounding the institute shows an ordinary proportion of from 3.7 to 4.2 parts of carbonic acid in 10,000 parts of air. The air in the empty rooms shows a rise of carbonic acid of about 0.5 part, due to decomposition of the organic matter present in the flues, the floors and the walls. The air of the building in general, of the halls, reading rooms, etc., which are open, and in which people are constantly moving about, is maintained at about five parts as an average of all tests for eight years. The air of most of the lecture rooms has contained from 6 to 8 parts, rising to 10 or 12 parts for the large and more crowded rooms, according to the state of the weather outside. From this experience it would appear that students can work well in a clean room with about seven parts in 10,000 of carbonic acid. Much more than this causes dullness, and anything over 13 parts is an almost insuperable obstacle to the full acquisition of knowledge by the classes.

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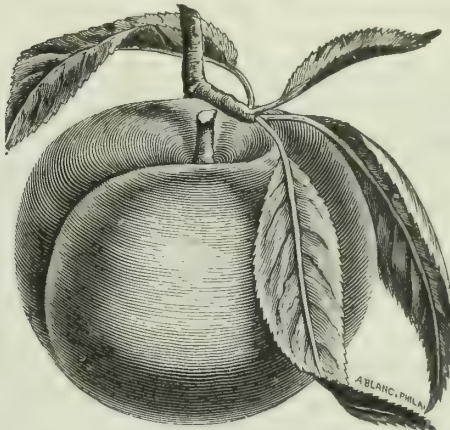
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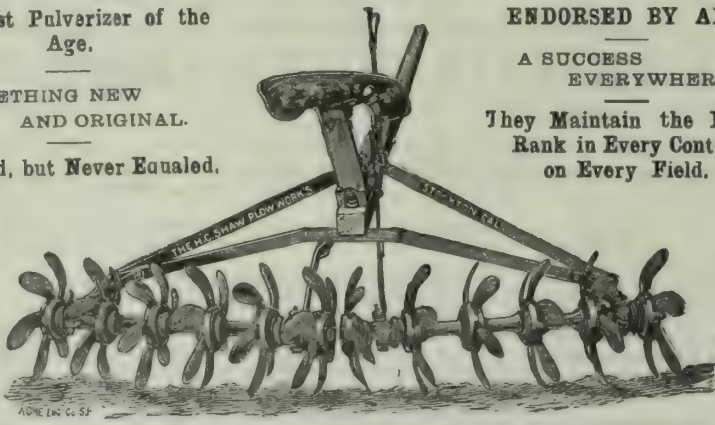
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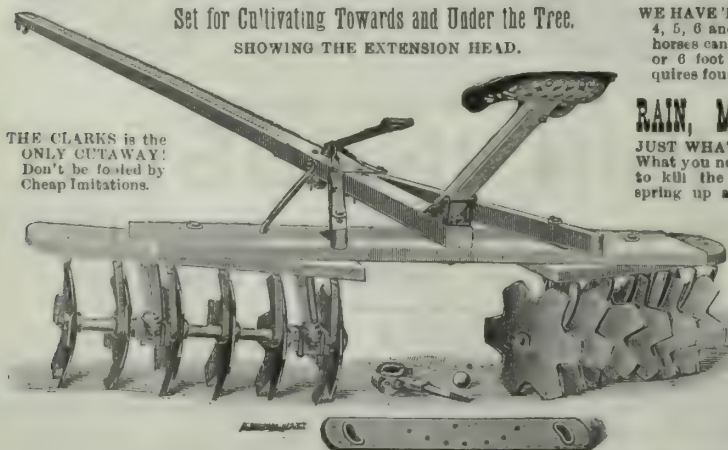


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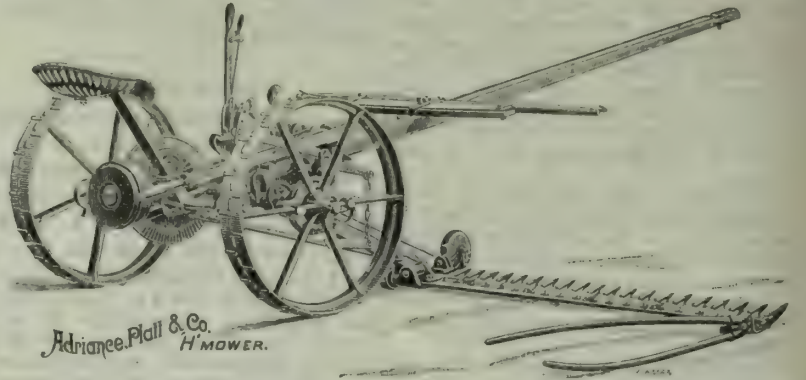
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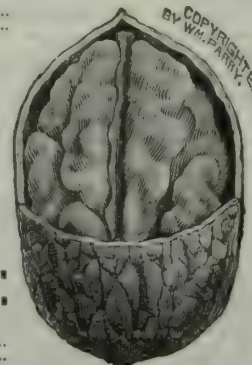
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PACIFIC RURAL PRESS

Vol. XLVII. No. 12.

SAN FRANCISCO, SATURDAY, MARCH 24, 1894.

TWENTY-FOURTH YEAR.
Office, 220 Market Street.

The State Board of Trade.

Our readers have heard much of the State Board of Trade through reference in our columns to its headquarters in this city, and the valuable essays and reports on the resources and industries of California which are presented at its meetings. It is a voluntary organization, receiving no aid from the State, but has been supported by county subscriptions and by contributions from city merchants and transportation companies. Its chief object has been to make the State better known, to circulate descriptive literature and to maintain in a central location in this city a permanent exhibit of productions and natural wealth, so that the inquiring stranger might secure information which would assist him in choosing a home or making an investment.

During its early years the board undertook several very extensive advertising enterprises, one of which, known as "California on Wheels," was very effective in calling the attention of Eastern people to our affairs. More recently there was shipment of trial lots of fruit to Europe for sale in advance of commercial shipments. These undertakings were laudable and valuable. The same character pertains to the statistical reports of the Board, prepared in the main by Gen. N. P. Chipman, who has in this work rendered valuable public service. Personal mention should also be made of the work of E. W. Maslin, for several years secretary of the board. The members of the board have, of course, done much for its progress and maintenance. They are too well known to need mention in this connection.

During the last year, amid the stringency of financial and commercial affairs, the board has been crippled in resources, and has had to restrict its efforts, and yet it has maintained thus far a high standard in its exhibits. Our engraving on this page gives a partial view of its exhibition rooms on the ground floor of the Crocker Building at the corner of Market and Montgomery streets. In the foreground stands the display of Los Angeles county, as the lettering on it shows. Other groups of exhibits adjacent belong to other counties, as, for example, that on the right belongs to Kern county. Other exhibits do not show their names in the picture, but they are visible to the visitor, for, naturally, contributing counties are given the advantage of their enterprise. In its publications, however, and in its general policy, the aim of the board is to advance the whole State.

It is certainly a valuable thing for a new State, which invites investment and settlement, to have a central bureau of information and exhibition. It is often claimed that the State ought to do on a broader plan what has thus far been attempted by counties, companies and individuals. It would seem wise to do this, and probably the next legislature will have a chance to act upon it. Of course, the board should be broader and freer from local or corporate interests than it has been, if it becomes a State affair. The conditions of its existence hitherto have

been such that it would have died long ago except for the support which it has received from such sources.

THE proposed anti-option legislation again occupied the attention of the House Committee on Agriculture last week. Mr. Hatch laid before the committee a draft of the new bill on the subject, which contains a number of amendments suggested by the Boards of Trade throughout the country. The new draft will be printed and laid before the committee as soon as possible. The tax on dealers in options and futures, proposed by the bill as originally introduced, will be materially reduced. We notice in a recent interview Mr. Hatch declared that he did not intend to interfere with legitimate dealing in

Another Advance in Abattoirs.

And now the Baden or South San Francisco slaughtering and packing enterprise is to be given a new start. The public is assured that there will be less real estate speculation and more meat in it. In fact, as the alliance hitherto has been somewhat unholy from an industrial point of view, it has been decided by the large stockholders that, owing to the increase of business, it was necessary to have separate corporations to attend to the meat and the land business. We are glad it is called increase of business. We had an idea that it was something like an absence of business which required a reorganization and greater attention to the real producing features of the enterprise. However that

may be, we hope the concern is now on the right track, and a great lift will be given to the stock-growing interest by energetic and enterprising local slaughtering and packing. It is one of the great needs of this coast.

Mr. Armour, the great Chicago packer who is in the new enterprise, and who was in the city last week, spent two days investigating the refrigerating and packing houses. He stated that he had never been in a country where there was better live-stock, nor did he ever visit a locality where refrigeration was more necessary to prevent meat from becoming tainted. The reason he gave for this was the high average of temperature in our glorious climate. With a beef starting at 100 to



EXHIBIT ROOM OF THE STATE BOARD OF TRADE, ON MARKET STREET, SAN FRANCISCO.

futures, but was after "bucket shops" and the like. We take it legitimate dealing in futures contemplates the actual delivery and reception of the grain on the date signified. We presume the Boards of Trade which have been besieging Mr. Hatch hardly mean as much as that.

THE telegraphed account is that California fruit interests gained nothing by the fight made in the Senate, but that the schedule was cut down to the figures of the Wilson bill as it left the House. This restores to the free list apples, olives, dates, pineapples and bananas; it drops grapes, plums and prunes to 20 per cent ad valorem; figs will be 20 per cent also, the reduction in both these cases being 10 per cent from the amended Senate bill; raisins and other dried grapes will be brought back to 1½ cents per pound.

CONTINUED reports indicate injury to peaches at the East by the severe winter. A writer for the *Country Gentleman* says: "The peach buds in the valley of the Hudson seem to have been quite generally killed by the late severe cold—12° to 14° below zero. I have 100 trees of the so-called 'ironclad' Crosbey, but after a diligent search I fail to find one live bud upon them." Of course, the valley of the Hudson doesn't do much with peaches anyhow, but the same low temperature may have had a wider range.

A NOVEL CONTRACT was made at Tulare a few days ago by which Frank Baker agrees to produce four inches of rain on the ranch of R. Linder. If he succeeds he is to receive \$1000, but the water must come in three months.

105 degrees at killing and only falling to 60 degrees or so, decomposition would be rapid unless arrested by gradual cooling and refrigeration. Mr. Armour was highly pleased with the plant at Baden.

Mr. Armour is a little off about the need of refrigeration in this climate—in fact, he is a long way off. The fact is that nowhere at the East will meat stand so long without spoiling as in California. Meat will go to destruction in the eastern summer time in one-quarter of the time it will in San Francisco in the same month. But we do not care to make an issue on that point. If Mr. Armour and his friends will go to work with a will, buy and kill and pack here and supply the great Pacific coast markets from this point, and not from Kansas City and Chicago, we will let him think as he likes about ice-boxes and other non-essentials.

But we fear Mr. Armour has too many loves on this coast. The *Rural Northwest* has it that there are rumors that Phil Armour is thinking of establishing a branch at some city in that section, and claims that his recent visit has given some degree of plausibility to the rumor. Both Portland and Tacoma have been mentioned as the probable site. The *Pacific Builder*, of Portland, after referring to this rumor, says: "Although it is a fact that certain parties in this city have been negotiating for a lease of quite a large tract of land for some time, no facts have yet come to the surface to directly connect Armour with the transaction. It is asserted that the object of the lease is to provide for the erection of a large warehouse." Mr. Armour seems to be swinging around the circle pretty well,

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	1 Week.	1 Month.	3 Months.	1 Year.
Per Line (agate)	\$.25	\$.50	\$ 1.20	\$ 4.00
Half inch (1 square)	1.00	2.50	6.50	22.00
One inch	1.50	5.00	13.00	42.00

Large advertisements at favorable rates. Special or reading notices, legal advertisements, notices appearing in extraordinary type, or in particular parts of the paper, at special rates. Four insertions are rated in a month.

Registered at S. F. Post Office as second-class mail matter.

Our latest forms go to press Wednesday evening.

ANY subscriber sending an inquiry on any subject to the RURAL PRESS, with a postage stamp, will receive a reply, either through the columns of the paper or by personal letter. The answer will be given as promptly as practicable.

ALFRED HOLMAN.....Editor
J. F. HALLORAN.....General Manager
E. J. WICKSON.....Special Contributor

San Francisco, March 24, 1894.

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The Week.

The week up to Wednesday has been of a most undesirable style, so far as the weather goes. There has been somewhere a high barometer on one side of us, and a low on the other, and the way dry north and northwest winds have incessantly poured over the State has been an aggravation to the soul and body of man. If these little meteorological differences would kindly settle up before they leave their ocean voyage it would save us a lot of valuable water and good temper.

We do not hear that anything is actually suffering in the interior. It is too early, perhaps, for that; but such weather as we have had for the last few days will bring suffering later on. The temperature has been too low for growth. Feed is short, grain is short, money is short, and the Midwinter Fair doesn't help the weather a particle, nor vice versa. It would be a good time for considerable of a growl if we were not constitutionally opposed to growling, and if letters from Californians who have gone East did not continually assure us that California doesn't know anything about hard times yet. But we wish it would get warmer and rain and grow. A few days of that will take the growl out of anything.

The State Fruit Exchange.

The work of organizing the State Fruit Exchange is progressing steadily. Manager Adams is still at work in the counties of Fresno, Kings, Kern and Tulare, and will hardly get through until the end of the month. Last Saturday an enthusiastic meeting was held at Biggs, and another meeting will be held Saturday of this week at Vacaville. The project meets with universal approval, and there seems no doubt that the Exchange will soon be a practical working reality.

President Walton, who was in the city during the week, stated to the RURAL that a meeting of the directors would be held shortly, and that within forty days business headquarters would be opened. In the meantime, no time will be wasted, as the work of organization will be pushed vigorously.

A Great Orange Contest.

We give much space upon another page to the results in detail of the widest and most unique orange contest ever held in this State. It was arranged as an attraction for the horricultural department of the Midwinter Fair, and was no doubt suggested by the fact that separate competitive displays of citrus fruits, from the northern and southern regions of the State, had just been held in the separate buildings belonging to those regions. It was a very natural and still a very interesting proceeding to invite each of these rival regions to submit their fruit to a general and impartial test and learn something from the outcome. The proposition was accepted by those in charge of the different regional displays, and somewhere between 400 and 500 plates of oranges and lemons were duly entered for competition. The name of the grower and the locality was faithfully concealed from the judges. They had nothing but the fruit and the number, and in this respect the contest was perfectly fair and equal.

When the fruit was given to the judges they decided to examine all the fruit closely and to score it all (except a few plates which were very inferior or not true to name) in accordance with the California scale of points. The counts on this scale are as follows:

Size	0 to 10
Form	0 to 5
Color	0 to 15
Weight	0 to 10
Peel	0 to 10
Fiber	0 to 8
Grain	0 to 4
Seed	0 to 8
Taste	0 to 30
Total	100

Obviously, then, in judging an orange, the judge has to note all those different features of each specimen which comes before him and mark each feature according as, to his view, it approaches perfection or departs from it. The judge has to form at least nine distinct ideas or judgments of each fruit specimen which is laid before him. Probably in the handling of the fruit in this instance not less than 4000 separate conceptions were thus arrived at by each of the four judges, or 16,000 conceptions by the four. Each of these had to be individually recorded, these records footed up and the average of the four individual total scorings was set down as the score of the fruit in question in each case. This is the way in which the records published upon another page were arrived at. We doubt whether such an extensive scoring of fruit at a single exhibition was ever attempted before. If not, then particular interest pertains to the result.

The scoring of the fruit was rather high. It was unavoidably higher than it could justly be at any ordinary fair where all sorts of fruit is brought in by growers. In this case the selections were made by those in charge of the collective exhibits, consequently it was not an ordinary lot of fruit, but a lot of closely selected fruit which came before the judges. Still, while we do not believe the highest scored oranges are too high, what we saw of the judging convinced us that much of the medium quality specimens were scaled rather high. This, perhaps, does not at all matter, because it has no effect on the comparative results. The same method prevailed with all exhibits.

We publish the results on another page in such a way that the individual records can be clearly made out. The arrangement is not strictly in order of rank, for the extra points are not considered in the sequence. Of course the highest fruit is the one which has the smallest number in the first column combined with the largest in the second column.

The contest will strongly enforce the conclusion which all fair-minded people reached from their own observation long ago, and that is that many parts of the State are producing oranges of the highest grade and that it is no longer of any use to claim that any locality has a monopoly of the best citrus conditions. The record shows that fruit from widely distant regions scored actually the same figure in many cases, and where there is possibly a difference of a point or two, it was perhaps owing to the chance that threw a better specimen under the knife at one time than another. There may be significant local deductions to be drawn from the record but we have not opportunity to seek them now. Such matters generally appear most clearly to those who have warm local interests. We expect our readers in the different regions can make such reflections for themselves. If there should be points of wide comparative interest we should like to have them discussed in our columns.

FIFTY THOUSAND HEAD of cattle have been forwarded to the seaboard from Chicago by exporters since January 1st, or 12,000 head more than during the corresponding period last year.

INDIA has a fine prospect for wheat this year, according to latest advices. In every division, except in the two western frontier ones of Peshawar and the Derajat, the prospects of the wheat crop are unusually good. The monsoon rains were generally favorable, and there was especially good rain in the third week of September, which led to large wheat sowings. The crop of last year was an unusually good one, but in 21 districts the area now under crop is estimated even to exceed that of last year, and in one or two districts further sowings were expected. Hissar is the only district which estimates the area under wheat to be very materially less than it was last year. The area at present estimated to be under wheat amounts to 7,570,300 acres—i. e., an excess of 17 per cent over the first forecast of last year, and of 6 per cent over the area given in the final report. Everything now depends on the character of the winter rains, which are now being looked for. Indian wheat was not sent to Europe in any quantity worth mentioning until 1873, when the exports were 394,000 cwt. This had increased to 5,587,000 cwt. in 1877, to 15,885,000 in 1885, and to 27,949,380 in 1891.

SOUTH DAKOTA is going into irrigation on the artesian well basis. There was held at Huron last week a two days' convention of artesian irrigators and the sentiment of the convention was pronounced in favor of sinking artesian wells. Although irrigation is not absolutely essential to secure crops, it has been demonstrated that irrigation insures a more abundant yield and secures protection against loss by hot winds. Several wells will be put down the present season. A permanent organization was perfected and a committee was appointed to prepare an address to the people of South Dakota on the subject of artesian wells and irrigation. Plans were outlined to secure State and National aid in perfecting a practical system of irrigation for South Dakota and for filling low places, lake beds and streams with water from artesian wells. And if they wish to stock their new lakes and ponds, California will donate a thousand carloads of carp and catfish for the catching.

CRANBERRY STATISTICS are rather trying to a California fruit-grower. He knows that experiments of twenty years show him that the fruit cannot be profitably grown in this State, and yet he is forced to read that the American Cranberry Association estimates last year's crop at 425,000 bushels for New England, 375,000 bushels for New Jersey and 100,000 bushels for the West, a total of 900,000 bushels, an increase over last year of about 85,000 bushels. Also that few cranberries were imported this season from Denmark. They were inferior to American berries and were sent West for consumption. A large portion of the New Jersey crop was shipped this season directly to the West. Not only cannot we grow cranberries, but we are forced to eat those poor Danish berries which they do not want at the East. It is very humiliating.

THERE is now on in this city the wildest kind of a grain gamble and the brokers are in a state of perpetual ferment with a promise that some may collapse any moment. It may be interesting for them to read that among the decisions handed down in the Court of Appeals in Missouri recently was one declaring that a debt contracted in an option deal cannot be collected by law, as such speculative dealing is gambling and illegal. The points sustained were that the debtor was not a bona fide purchaser, was not prepared to receive and did not expect to receive the actual grain, and that, if in a contract for future delivery the only purpose is to speculate on the difference between buying and selling prices, such a contract is a wager and therefore null and void.

DISCUSSION of farm wages does not seem to be a very inviting pastime, as we have several times mooted the subject and hear nothing further. There was a meeting of the Arizona Wool-Growers' and Sheep-Herders' Association held at Flagstaff last week and it was decided to reduce the wages of herders to \$20 per month, to take effect July 1st, and to reduce the price of shearing to four cents per head. The reduction is made on account of the demoralized condition of the sheep business, owing to the threatened removal of the duty on wool. The price stated for shearing must be considerably lower than the Californian offered who told his shearers they could have the wool if they would take it off.

AND NOW we are to try rice on the tule lands. This is a subject which has long been thought of and urged for experiment, but the facilities for trial in the region indicated were not available. It is telegraphed from Washington that Representative Caminetti has received a communication from the Secretary of Agriculture saying that the Department had decided to conduct rice-growing experiments in the low lands along the Sacramento and San Joaquin rivers, where the sugar cane experiments will also be made.

From an Independent Standpoint.

The chief event of the week at Washington is the passage by the Senate of a bill, previously passed by the House, providing for coinage of the seigniorage silver now in the Treasury vaults. Under the Sherman law, and the other silver purchase law which preceded it, the Treasury was for the twelve years prior to 1893 a large buyer of silver bullion at the market price. The difference between this price and the coinage value of silver metal was in a sense clear profit. To illustrate, last March the Treasury bought for two million dollars enough silver bullion to make upwards of three million standard silver dollars. The million-and-odd in excess of the two million paid is in one view of it a profit on the purchase; or, in the language of the mint, "seigniorage." The aggregate of this seigniorage accumulated during twelve years is a quantity of bullion sufficient to make approximately fifty-five millions of silver dollars; and the purpose of the bill just passed is to work up this metal into the form of money.

On its face the question has seemed a very simple one of policy; but in fact it has involved all the interests and all the passions which fought so bitterly to a finish last fall in the matter of the Repeal measure. The silver men, supported by that vast body of public sentiment which calls for expansion of the currency, have fought earnestly for the bill, while the gold men, assisted in all possible ways by the Administration, have fought against it. The result fairly illustrates the relative force of the two theories of financial policy. It marks the break-down of the policy which proposed to let matters rest where they stood when the Repeal bill was passed. Many who joined in support of the Repeal bill last year did it upon what was deemed good assurance that Mr. Cleveland would propose a rational plan for increase of the currency. He has not done it; he has, on the contrary, set himself against it. The passage of the seigniorage bill over his protest is his rebuke from Congress.

As a matter of fact, the coinage of the seigniorage will have no effect upon the public finances. The silver dollars coined from it will lie in the Treasury with the other millions of silver dollars which now lie there. The real importance of the matter lies in its demonstration of the weakness of the Administration in failing to defeat the bill, and in the strength of the sentiment which proceeds forcibly, even though blindly, in the effort to expand the currency.

If all who hold that the currency should be expanded would work together, the thing would speedily come about; but differences as to method between friends of expansion seem as radical and as inveterate as the division for and against the policy of expansion itself. One crowd believes in free silver coinage, in full faith that this would restore the old relative equality between gold and silver. Another believes in new issues of paper currency, with full faith in the theory that it is the fiat of Government rather than intrinsic value that makes the commodity which we call money. Another crowd holds that money to have any stable value must have intrinsic value or rest upon the credit of an absolute value; that free silver coinage would be a fatal policy; that the larger use of silver is essential to general prosperity, but that such larger use is practicable only through international agreement. These three divisions, we believe, fairly include the friends of an expanded national currency. While they bicker with each other—only uniting occasionally on some insignificant measure like the seigniorage bill just passed—the promoters of contraction work steadily together and always contrive somehow to come out on top. The past nine months of universal hardship have done much to educate the people of the United States on economic questions, but it would seem that we need more discipline still to teach the important and essential principles that money must rest upon value and that those who seek to accomplish any great end must work together. When these two facts have been learned the financial clouds will have gone.

The character of John Y. McKane, who was sentenced to the New York penitentiary the other day for election frauds, illustrates some inconsistencies not uncommon in the American politician. McKane was the "boss" of Gravesend, New York, which includes the popular resort of Coney island, and he had all the vices of a boss. He was a briber, a taker of bribes, a promoter or a protector of gamblers as his political necessities required, a ballot-box stuffer, a criminal in a hundred different ways. But all this in the way of politics only. He was in the business of politics and therefore played the game to win. In his private character, McKane was a faithful husband, a good father, a true friend, a kind neighbor and a man of miscellaneous benevolence. He was the very earnest superintendent of a Sunday school, and it is generally admitted that in his religious professions he believed himself en-

tirely sincere. His criminality was based upon the theory, evidently seriously believed, that all methods are fair in politics; that it is legitimate for a man to have two moral codes, one for public and another for private use. This sort of moral anomaly is a product of the spoils system of politics. Every State and almost every county has in its political life men of the McKane type—a fact of itself sufficient to brand the system as infamous.

The conviction and punishment of McKane is gratifying because it gives the lie emphatically to the claim, persistently repeated, that the people are indifferent to moral considerations in political affairs; that the boss system is not only entrenched in power but in public approval. It is another instance directly in line with the Tweed case, showing that the public conscience is sound and that it always rings true when it gets a chance to ring at all. As party authority declines—as men learn that the duty of citizenship is higher than partisan obligation—we shall have more such expressions of public judgment and conscience as that involved in the McKane conviction. It is, we repeat, through independence of party, through manliness and integrity and individual responsibility in political action that a better system in politics will come.

The Assistant Secretary of Agriculture.

Readers of the RURAL will be glad to know more about Dr. Dabney, who recently assumed charge of the important work of Assistant Secretary in the Department of Agriculture at Washington. The following sketch is from the Chicago Graphic:

Charles William Dabney, Jr., Ph. D., LL. D., scientist and educator, was born at Hampden-Sidney, Va., in 1855. He is the son of Robert Lewis Dabney, D. D., LL. D., theologian, many years a professor at the Union Theological Seminary of the Presbyterian Church, now professor of philosophy in the University of Texas, and was "Stonewall" Jackson's chief-of-staff and biographer. President Dabney graduated at Hampden-Sidney College with the degree of A. B. in 1873, taught a classical school one year and graduated at the University of Virginia in 1877. He was professor of chemistry and mineralogy at Emory and Henry College, Virginia, 1877 to 1878, studied chemistry, physics and mineralogy at Berlin and Goettingen, Germany, from 1878 to 1880 inclusive, receiving the degree of Ph. D. at the latter university.

He was elected professor of chemistry in the University of North Carolina just before returning to America, and soon thereafter was elected State Chemist of North Carolina. In 1881 he became Director of the North Carolina Agricultural Experiment Station at Raleigh, and also State Chemist of the Geological Survey and Board of Health. While there he published a number of papers in the scientific journals on points in organic and agricultural chemistry, a large number of bulletins and five annual reports of the Experiment Station. He conducted explorations for phosphate in eastern North Carolina, and was the first to discover and bring these deposits to the attention of the scientific and commercial world. He made similar explorations of the pyrites deposits, and made collections of the useful minerals of the same State for various expositions and the State museum. He discovered cassiterite (black tin) and a number of other new and valuable minerals in this section. Publications on these subjects were made in State reports and the journals of various scientific societies. Dr. Dabney was the representative of the State of North Carolina at various expositions and elected chief of the department of Government and State exhibits of the New Orleans World's Exposition of 1884-85. As chemist to the State Board of Health of North Carolina he published various papers on drinking waters, foods, drugs, etc. While in North Carolina, Dr. Dabney was instrumental in providing buildings, with laboratories, glass houses, etc., for the Experiment Station, in organizing and equipping an experimental farm, a State weather service, and a permanent exhibit of the State's resources. He became at this time greatly interested in technical education, and wrote and lectured a good deal on the necessity for this kind of education in the South. He was interested in the establishment of an industrial school at Raleigh, N. C., which has since become a college of agriculture and mechanic arts.

In 1887 the Board of Trustees of the University of Tennessee, desiring especially to strengthen their institution in the sciences related to the industries and engineering, elected Dr. Dabney to the presidency, he being then only 33 years of age. During the time he has occupied the presidential chair the courses of study have been enlarged to include many of the sciences, and new laboratories have been erected for mechanic arts, chemistry, physics, botany and zoology, each. In three years three new departments have been opened, the number of professors, the number of students and the income of the institution have all been nearly doubled. Dr. Dabney received the degree of LL. D. from Davidson College in 1889. He is a member of American and German chemical societies, of the American Institute of Mining Engineers, of the Virginia Historical Society and other similar organizations.

Dose for Bud-Eating Birds.

TO THE EDITOR:—If your subscriber who wishes to kill the birds will take apples and slice them thin and put powdered strychnine on the apple, and rub and pick it with the point of a pen-knife, and put out on the roof of some building near the orchard, he will kill the birds. This has been tried and it is a success.

Los Angeles, Cal.

The Best Oranges.

Scores of Fruit from All Parts of the State at the Midwinter Fair.

In the competitive display of citrus fruits in the Horticultural building at the Midwinter Fair there was comparative judging of fruit from all parts of the State. The judging was done by scoring each entry according to the California scale recently adopted by our horticultural associations. The judges had the fruit presented to them by number only; they had no knowledge of the grower, or of the locality from whence the fruit came.

In the following list the figure 1 signifies that the fruit scored 90, and the second figure means the points above 90; the figure 2 signifies 80, and the figure 3 signifies 70. All fruit scoring less than 70 was rejected.

WASHINGTON NAVELS.

County.	
Butte.....	1-1
Riverside.....	1
Los Angeles.....	1-1
Los Angeles.....	1-1
Los Angeles.....	1-2
Los Angeles.....	1
Los Angeles.....	1
Los Angeles.....	1-1
Los Angeles.....	1
Phoenix, Ariz.....	1-1
Ventura.....	1-1
Ventura.....	1-4
Ventura.....	1
Ventura.....	1-1
Butte.....	2-1
Butte.....	2-8
Butte.....	2
Butte.....	2-5
Sacramento.....	2
Riverside.....	2
Riverside.....	2-1
Riverside.....	2-5
Riverside.....	2
Riverside.....	2
Riverside.....	2-3
Riverside.....	2-8
Riverside.....	2
Riverside.....	2-3
Riverside.....	2-8
Colusa.....	2-7
Colusa.....	2-3
Colusa.....	2-2
Placer.....	2-4
San Bernardino.....	2-6
San Bernardino.....	2-1
San Bernardino.....	2-8
San Bernardino.....	2
San Diego.....	2-1
San Diego.....	2-6
Los Angeles.....	2-2
Los Angeles.....	2-4
Los Angeles.....	2-9
Los Angeles.....	2-2
Los Angeles.....	2-2
Los Angeles.....	2-7
Los Angeles.....	2-8
Los Angeles.....	2-9
Los Angeles.....	2-6
Los Angeles.....	2-3
Los Angeles.....	2-3
Los Angeles.....	2-9
Los Angeles.....	2-2
Los Angeles.....	2-7
Los Angeles.....	2-7
Los Angeles.....	2-2
Los Angeles.....	2-4
Los Angeles.....	2-8
Los Angeles.....	2-4
Los Angeles.....	2-2
Los Angeles.....	2-7
Los Angeles.....	2-7
Los Angeles.....	2-2
Los Angeles.....	2
Los Angeles.....	2-4
Los Angeles.....	2
Los Angeles.....	2-2
Los Angeles.....	2-9
Los Angeles.....	2-1
Tulare.....	2-4
Tulare.....	2-5
Tulare.....	2
Tulare.....	2-7
Tulare.....	2
Tulare.....	2-8
Tulare.....	2-7
Tulare.....	2
Tulare.....	2-9
Tulare.....	2-9
Tulare.....	2-9
Tulare.....	2-9
Ventura.....	2-5
Ventura.....	2-8
Ventura.....	2-9
Ventura.....	2-9
Ventura.....	2-4
Ventura.....	2-6
Ventura.....	2-6
Butte.....	2-4
Butte.....	3-9
Butte.....	3-9
Butte.....	3-9
Butte.....	3-5
Butte.....	3-3
Butte.....	3-4
Butte.....	3-4
Sacramento.....	3-7
Riverside.....	3-4
Riverside.....	3-9
Riverside.....	3-2
Riverside.....	3-9
Placer.....	3-5
San Diego.....	3-7
San Diego.....	3-5
Los Angeles.....	3-9
Los Angeles.....	3-6
Los Angeles.....	3-4
Los Angeles.....	3-7
Los Angeles.....	3-5
Los Angeles.....	3-3
Los Angeles.....	3-3
Los Angeles.....	3-3
Los Angeles.....	3-6
Los Angeles.....	3-9
Los Angeles.....	3-9

Wallace J. Thompson	Los Angeles	3-5
Mrs. J. C. Wilkins	Tehama	3-9
G. K. Willard	Tehama	3-8
J. R. D. Fay	Ventura	3-7
Paul Stoll	Tehama	3-3

AUSTRALIAN NAVELS.

H. W. Hutson	Riverside	3-8
L. F. Darling	Riverside	3-7
F. M. Buck	Solano	3-2

IMPROVED NAVELS.

A. C. Thompson	Los Angeles	1-1
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SEEDLINGS.

A. M. Quinn	Tulare	1
E. Newman	Tulare	1-4
Orrin Backus	Riverside	2-2
H. W. Hutson	Riverside	2-7
E. W. Holmes	Riverside	2-9
L. F. Darling	Riverside	2-3
Stockton & Buffum	Mariposa	3
Owen R. Owens	Placer	2-7
J. T. Harvey	San Diego	2-3
Thos. Glenn	Los Angeles	2-2
William Chipperdale	Los Angeles	2-4
Dr. S. Coffin	Los Angeles	2-5
G. Fitzgerald	Los Angeles	2-4
A. S. Church	Los Angeles	2-2
W. W. Bacon	Los Angeles	2-3
John Scott	Los Angeles	2-6
G. T. Frost	Tulare	2-5
A. M. Quinn	Tulare	3-4
G. T. Frost	Tulare	2-2
G. T. Frost	Tulare	2-8
G. T. Frost, Sr.	Tulare	2-8
O. E. Groves	Tehama	2-7
P. D. Logan	Tehama	2-3
E. W. Miller	Tehama	2-3
C. H. Sheldon	Ventura	2
William Robinson	Sacramento	3-2
R. Cursier	Sacramento	3-4
George T. Rich	Sacramento	3-6
Miss Jennie Govan	Sacramento	3-8
W. H. Backus	Riverside	3-5
Mrs. M. Ward	Tehama	3-5
Hall, Anderson and Burns	Ventura	3-5
Major Jones	Butte	3-7
George Reid	Tehama	3-5
G. K. Willard	Tehama	3-8

MEDITERRANEAN SWEETS.

J. A. Maddock	Los Angeles	1-2
L. Rorer	Los Angeles	1-1
William Martin	Tehama	1-1
R. C. Chambers	Butte	2-3
Mrs. W. J. Green	Butte	2-5
J. C. Stump	Butte	2-2
C. Reinisch	Butte	2-2
P. R. Persens	Butte	2-4
Ed Harkness	Butte	2-3
William Behr	Butte	2-3
M. Reymann	Butte	2-4
S. T. Hall	Riverside	2-2
M. B. Van Fleet	Riverside	2-3
L. F. Darling	Riverside	2-5
H. W. Hutson	Riverside	2-3
Orrin Backus	Riverside	2-3
E. C. Dyer	Riverside	2-3
James Hewitson	Riverside	2-3
O. F. Dyer	Riverside	2-2
H. S. Kirke	Placer	2-8
J. A. Filcher	Placer	2-8
S. M. Marshall	San Diego	2
H. L. Storey	San Diego	2-7
J. C. Frisbee	San Diego	2
Viola Church	Los Angeles	2-4
J. H. Baker	Los Angeles	2-3
C. E. Bemis	Los Angeles	2-4
Jennie Church	Los Angeles	2-8
Lillian Maddock	Los Angeles	2-8
Mrs. Maddock	Los Angeles	2-3
A. E. Thompson	Los Angeles	2-3
John Scott	Los Angeles	2
Helon Maddock	Los Angeles	2-8
W. H. Wood	Los Angeles	2-4
William Chipperdale	Los Angeles	2-5
J. H. F. Jorehor	Los Angeles	2-7
J. A. Maddock	Los Angeles	2-6
L. G. Hunt	Los Angeles	2-3
A. L. Reed	Los Angeles	2-5
Genefer Maddock	Los Angeles	2-6
Gordon Maddock	Los Angeles	2-9
George Frost, Jr.	Tulare	2-6
G. T. Frost	Tulare	2-3
A. M. Quinn	Tulare	2-8
John Simpson	Tehama	2-6
Hall, Anderson & Burns	Ventura	2-9
J. B. Wickoff	Ventura	2-7
J. L. Kennedy	Ventura	2-5
W. E. Wilsie	Ventura	3-3
Charles B. Maybaw	Tehama	2-1
J. R. D. Say	Ventura	2
C. C. Elkins	Ventura	2-4
Major Jones	Butte	2-4
O. D. Greene	Butte	3-7
Mrs. P. A. Hearst	Butte	3-9
J. Parker Whitney	Placer	3-9
A. S. Church	Los Angeles	3-9
W. Buckus	Los Angeles	3-6
Whittier Reform School	Los Angeles	3-5
William Duncan	Tehama	3-7
W. J. Rice	Ventura	3-3

ST. MICHAELS.

M. Reymann	Butte	1
C. F. Lott	Butte	1
D. N. Frisleben	Butte	1-1
A. Bartley	Butte	1
Ed Harkness	Butte	1
J. Morgan	Butte	1-1
William Behr	Butte	1-3
D. H. Murray	Butte	1
H. L. Storey	San Diego	1-1
Jenny Church	Los Angeles	1
E. Newman	Tulare	1
John Scott	Los Angeles	1-2
L. Glass	Butte	2-4
P. R. Person	Butte	2-8
E. W. Fogg	Butte	2-9
S. M. Marshall	San Diego	2-4
L. Rohrer	Los Angeles	2-4
W. H. Wood	Los Angeles	2-3
Wm. Chipperdale	Los Angeles	2-7
A. J. Pettit	Los Angeles	2-8
Geo. Frost, Jr.	Tulare	2-4
A. M. Quinn	Tulare	2-9
C. H. Sheldon	Ventura	2-6
W. E. Wilsie	Ventura	2-8
C. C. Elkin	Ventura	2-7

P. R. ST. MICHAELS.

Orrin Backus	Riverside	1
H. W. Hutson	Riverside	1
L. F. Darling	Riverside	2-7
James Hewitson	Riverside	2-5
M. B. Van Fleet	Riverside	2-4
J. A. Filcher	Placer	2-6
A. C. Ferlow	San Bernardino	2-8
Miss E. Freeman	San Bernardino	2-8

MALTA BLOODS.

D. H. Murray	Butte	2-4
E. W. Fogg	Butte	2
C. F. Lott	Butte	2-8
E. C. Dyer	Riverside	2-4
O. F. Dyer	Riverside	2-5
James Hewitson	Riverside	2
L. F. Darling	Riverside	2-7
S. T. Hall	Riverside	2-2
Orrin Backus	Riverside	2-6
J. B. Wood	Riverside	2-5
W. H. Backus	Riverside	2-8
M. B. Van Fleet	Riverside	2-7
Mrs. M. Emery	Riverside	2-1
Sanford B. Dole	Riverside	2-4
H. W. Hutson	Riverside	2
Dr. C. W. Cramer	Riverside	2-4
L. L. Dyer	Riverside	2-3
J. S. Harvey	San Diego	2-4
Viola Church	Los Angeles	2-3
Jenny Church	Los Angeles	2-4
M. D. Johnson	Los Angeles	2-5
A. C. Thompson	Los Angeles	2-5
A. S. Church	Los Angeles	2-6
Wm. Chipperdale	Los Angeles	2-2
Elsie R. Thompson	Los Angeles	2
Kittie A. Thompson	Los Angeles	2-2
Jennie M. Thompson	Los Angeles	2-3
A. M. Quinn	Tulare	2
George Frost, Jr.	Tulare	2-2
E. Newman	Tulare	2-6
George Frost, Jr.	Tulare	2-6
G. F. Frost	Tulare	2-1
J. L. Kennedy	Ventura	2-5
E. S. Thatcher	Ventura	2-6
W. E. Wilsie	Ventura	2
Major Jones	Butte	2-1
Ed Harkness	Butte	3-5
Fred Davis	Butte	3-4
Mrs. P. A. Hearst	Butte	3-6
I. C. Stump	Butte	3-9
C. J. Gill	Riverside	3-8
Ralph Granger	San Diego	3-4
S. M. Marshall	San Diego	3-6
John Scott	Los Angeles	3-9

RUBY BLOODS.

E. W. Holmes	Riverside	2
H. W. Hutson	Riverside	2-4
George Frost, Jr.	Tulare	2-6
E. Newman	Tulare	2-2
George Frost, Jr.	Tulare	2-5
A. M. Quinn	Tulare	2-5
George T. Frost	Tulare	2-1
George Frost, Jr.	Tulare	2-7
Hall, Anderson & Burns	Ventura	2-2
Esington Gibson	Ventura	2
E. S. Thatcher	Ventura	2-2
H. S. Kirke	Placer	3
S. M. Marshall	San Diego	3-8

HANDY BLOOD.

H. W. Hutson	Riverside	3-9
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VALENCIA LATE.

George Frost, Jr.	Tulare	1-1
John Scott	Los Angeles	2-2
J. B. Wickoff	Ventura	2-2

PARSON BROWN.

I. C. Stump	Butte	2-2
Mrs. P. A. Hearst	Butte	2
J. A. Filcher	Placer	2-3
A. P. Harwood	San Bernardino	2-2
W. I. Rice	Ventura	2-2
J. B. Wickoff	Ventura	2-3

MAGNUM BONUM.

Marcus Daly	Butte	2-5
F. A. Sargent	Butte	3-5

JAFFA.

George Frost, Jr.	Tulare	2-4
E. Newman	Tulare	2-4
George T. Frost	Tulare	2-9
A. M. Quinn	Tulare	2-3
J. L. Kennedy	Ventura	2-8

JOPPA.

G. T. Frost	Tulare	1-3
George Frost, Jr.	Tulare	2-9
E. Newman	Tulare	2-9

HOMOSASSA.

F. A. Sargent	Butte	2-3
R. C. Chambers	Butte	2-3
Marcus Daly	Butte	2-3
N. W. Winton	Butte	2-6
T. J. Shellhammer	Colusa	2-2
J. A. Filcher	Placer	2-4
R. Jones	Colusa	3-6

TARDIFF.

A. P. Harwood	San Bernardino	1-6
E. S. Thatcher	Ventura	1-1

IMPERIAL.

Mrs. P. A. Hearst	Butte	2-4
F. A. Sargent	Butte	2-2
Marcus Daly	Butte	2-1

PEERLESS.

F. A. Sargent	Butte	2-5
Mrs. P. A. Hearst	Butte	3-6
Marcus Daly	Butte	3-5

STARK.

Mrs. P. A. Hearst	Butte	3-9
F. A. Sargent	Butte	3-8

BEECH, NOS. 1 AND 5.

F. A. Sargent	Butte	2-1
W. J. Green	Butte	2-2
Marcus Daly	Butte	2-2
W. J. Green	Butte	2-4
Marcus Daly	Butte	3-3

KONAH.

J. S. Harvey	San Diego	2-6
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TANGERINE.

Colonel Pitcher	San Bernardino	1-3
E. S. Thatcher	Ventura	2-3

PINEAPPLE.

J. B. Wickoff	Ventura	1-1
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DUROI.

R. C. Chambers	Butte	2-6
W. J. Green	Butte	2-6
F. A. Sargent	Butte	2-5
Marcus Daly	Butte	2

VILLA CARO SEEDLESS.

S. M. Marshall	San Diego	3-9
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JAFFA NAVEL.

W. E. Wilsie	Ventura	2-3
E. S. Thatcher	Ventura	2

COMMERCIAL BOXES OF ORANGES.

R. C. Chambers	Butte	First
Mrs. W. F. Simms	Riverside	Second
Charles L. Wilson	Los Angeles	Third

Other Fruits.

The awards on lemons will be made public as soon as returns can be received from the Stanford University, the chemical department of which is at present giving the lemons a scientific test. The judges on apples have completed their work, and their report will be made public in a few days.

Rainfall and Temperature.

The following data for the eight days ending 5 A.M. Wednesday, March 21, 1894, are from official sources, and are furnished by the U. S. Weather Bureau expressly for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total rainfall for the week	Total seasonal rainfall to date	Total seasonal rainfall last year to same date	Average seasonal rainfall to date	Maximum temperature for the week	Minimum temperature for the week
Yuma	T	2.16	1.36	3.04	88	36
San Diego	.06	4.68	8.82	8.41	60	38
Los Angeles	.01	6.60	26.00	16.13	68	36
Keeler	.01	1.61	3.54	2.44	74	26
Fresno	.03	6.15	10.76	6.89	70	34
Sacramento	.02	18.22	21.82	16.40	88	38
San Francisco	.04	16.10	20.44	20.73	58	40
Red Bluff	.20	17.72	29.91	19.68	64	34
Eureka	2.72	48.10	37.85	37.45	54	34

State Horticultural Society.

The next regular meeting will be held on Friday, March 30th, at 1 o'clock P. M., in the Assembly Hall of the State Board of Horticulture, 220 Sutter street, San Francisco.

There will be the following subjects for discussion:
1.—"The cost of producing fruit." Opened by B. N. Rowley.

2.—"How cheaply can fruit be sold and still yield as much average profit as other productions?" Opened by T. H. Ramsey.

3.—"Orchard labor—how employed and at what rates?" Opened by A. L. Bancroft and A. T. Hatch.

These are practical economic questions and should be freely discussed. All interested in them are invited to be present.

Fruit-Dryer Burned.

SAN JOSE, March 15.—The Ward dryer, situated in the Willows, about three miles south of here, was burned to the ground to-night shortly before 12 o'clock, together with its valuable equipments and about 300 barrels of tree wash, valued at \$3600.

The dryer shut down for the season a few weeks ago, and no one was in the place when the fire started. It is supposed that the fire was set by tramps, who were accustomed to sleep under the shelter of the building. W. E. Ward estimates the value of the building and property burned at \$8000. It is insured for \$5000.

JUDGE STABLER, of Sutter county, in an interview recently, gave another sign of loyalty to the dried-fruit interest. He said: "The growers who dried their fruit last year did better than those who shipped it in a fresh condition. In the drying process lies the best outlet and the future mainstay of our deciduous fruit industry. The market for superior dried fruit is world-wide and practically unbounded as to quantity. Peaches and other fruits, properly dried, if afterward properly cooked, are as delicious as anybody could wish them to be, and certainly not inferior to canned fruit." This is sound doctrine. Strictly fine dried fruit, well marketed, will fill California with population and wealth, and spread health and comfort among mankind everywhere. It's a good scheme from all points of view.

ONE of the most conspicuous examples of wide circulation for agricultural literature is the sale of the dairy pamphlet, "Dairying for Profit," by Mrs. E. M. Jones of Canada. We find a letter from Mrs. Jones in an Eastern exchange, in which she says: "I am happy to tell you that my book, 'Dairying for Profit,' has made the greatest success any book of the kind has ever attained—150,000 copies already sold, and orders keeping up briskly. A firm in the West has almost closed a deal with me for 100,000 more copies. The Agricultural College in Michigan has taken it, for use in their schools, and the Nova Scotia Government is also contemplating its adoption." It is worthy of its wide sale, and all Californians who wish to inform themselves upon a conspicuous success in Eastern practice should procure the pamphlet from this office.

TRACK AND FARM.

The Trotter for All Work.

Mr. A. C. Turner, of Butler county, O., writes as follows to the *Breeders' Gazette*: In 1878 I was using about eight to ten horses in farming operations. These I bought generally from dealers who brought them to this country (southern Ohio) from Indiana and Illinois, and were generally natives or grade drafts; sometimes I used a few mules. In 1878 I happened to be at a dispersal sale in Kentucky of a lot of horses that had been bred in the then trotting lines. At this sale I bought a four-year-old gelding that was slightly blemished, but not so as to interfere with his usefulness.

This horse I put to regular farm work with the others already on the farm and he proved an eye-opener for me. The gelding was sixteen hands high and weighed about 1200 pounds, but was worth more in the field to plow or harrow, reaper or mower, on the road to the wagon or in light harness than any horse I had ever used up to that time. I could put him into any kind of work with horses much larger and against the largest and best mules, and he could always stand up to the hardest work better than any of them. No matter how hard the work nor how hot the day he was always ready for his part. In harvest, with three horses to a binder, we would frequently keep him in all the time, when the others of the trio would have to be changed, as they would get hot and blow, yet I never knew this fellow to pant or show any signs of fatigue.

I used him for twelve years and he never missed a feed or showed the least signs of sickness in all that time. In 1890 I made a public sale, when a neighbor bought this gelding and has him yet, and uses him on all occasions, and still drives him occasionally on the road, and when he has a load of corn or wheat to take to Cincinnati (a distance of twenty miles) this horse is still ready to pull his part of the load and comes back the same day without signs of fatigue or age.

When I found he was so much superior to any other horse I had ever worked I began to look for the cause, and I could account for it in no other way than in his breeding. I found he was a son of Edwin Forrest, out of a mare that the owner considered well bred. Upon further looking into this matter I found that the farmers of Kentucky who used these better-bred horses could get more work out of their teams than we could and keep their horses up with less feed and care. With this experience and these observations, I then determined to raise my own stock, and for this purpose I bought a few mares and a stallion that would produce this class of horses. I used the mares to do all my farm work and driving, and let them raise a colt each year. I sold twenty of these young things last fall at public sale at an average of \$147. They were mostly one and two years old. While the price was not high, I think it better than grain. So much by way of experience.

Most of your writers say the horse market is overdone. Is it any wonder? Look at the great numbers of horses that have been imported in the last decade and the amount of money it has taken from this country to pay for them. This would be all right if we needed them, or could gain anything by it. I am satisfied the American trotter is the best all-round horse in existence, and if selections were made from them to suit the various kinds of work they would amply fill every department where horseflesh is needed in the channels of trade in this country, and this could have been done at a profit to the horse-producers of this country for many years to come. The farmers of this country seem to have the faculty of rushing headlong into any business that offers a seeming profit for the day, regardless of the annihilation of the same business on the morrow. The millions of dollars that have left the American farm in the past few years would be a great deal more acceptable to us to-day than all the foreign so-called special class horses that are crushing the life out of our markets. We farmers want more money, not less, and we want less horses, not more. I would that we could undo what we have done—send these horses back and have our money returned to us again.

The Drift of Affairs in Horse Breeding.

The pendulum that swings too far one way must, by force of gravitation, measure its return swing in ratio, and the same principle applies in commerce as well as mechanics. A few years we had the inflation in trotting value, and the consequent overproduction of ill-produced stock. The return swing of the pendulum reached its limit last autumn, and therein went as far beyond the healthy medium balance as did its opposite in the direction of inflation. But it is a happy law of worldly affairs that evils generally work their own cure. Very many less mares were bred in 1893 than were bred in 1892, and in 1894 the number bred will also be materially under that of the first-named year. This lessened production is now and will to a greater degree relieve the glut in the market, and gradually the equilibrium between supply and demand will be restored, and with that restoration will come a strengthening of the market, and a natural upward tendency of prices. A writer in this paper cites the wheat market as an illustration of the ebb and flow of the commercial tides. He shows that each year where there is a material increase in the production of wheat the following year brings a decrease in prices; and, on the other hand, that each year that brings a short crop is followed the next by a stronger market. The production and sale of horses is subject to the same influences, and the same general laws obtained in that industry as prevail in other productive pursuits and other forms of commerce. The market graduates according to the ratio of demand to supply and to quality.

Two inevitable results of the drift of affairs during the last two years will be (1) a great decrease in the quantity of stock produced, and (2) a great improvement in the

quality of what is produced. This decrease in the production involves, of course, the retirement of numbers of animals from stud use that should never have been put thereto, and this weeding out, of course, will raise the general average quality of those that are retained for breeding, and this in turn will naturally result in the production in coming seasons of not only fewer, but better, trotting and pacing horses—in short, of less quantity and more quality. Meanwhile, the demand will naturally and inevitably increase, for that is influenced and to a large degree regulated by the needs of commerce in general and of society particularly, and is not, as many would seem to suppose, controlled from within the industry itself. From these conditions, an upward tendency in price, a firmer market, and the establishment of the whole business on a more substantial and healthy basis are results just as sure to follow as are higher prices for breadstuffs to follow a blight of wheat and corn crops.

True, if the nation's granaries were bulging with the surplus corn and wheat of a phenomenally bountiful year, the market might be but little affected by one season yielding the kindly fruits of the earth with niggard hand. True, too, that our stables, paddocks and studs have been overcrowded with a surplus of harness horses, but the past two years has seen a continual drain, a system of forced selection through which thousands have found their way to where they belong, the road, the delivery wagon and the plow, and the surplus will soon have disappeared, leaving less but better material behind. The *Review*, carefully considering the question in all its phases, retrospectively and prospectively, is earnestly of the conviction that the harness horse business is on the threshold, not of a boom, but of a period of solid, substantial and rational prosperity, and those breeders who will reap the richest harvest are those that breed, not the most, but the best, and give their countenance and encouragement to every agency that is contributing to the upholding of the business.—Clark's Horse Review.

AGRICULTURAL SCIENCE.

A Californian Defends the Experiment Stations.

WASHINGTON, March 15.—There was a pretty set-to in the House to-day over the experimental stations that are carried on by the Agricultural Department in various parts of the Union. Black of Georgia held the floor for three-quarters of an hour. He mentioned a good many names of plants and insects which are treated of by scientists in their reports of experiments in aid of agriculture. He especially made fun of the experiments in killing gophers and amused the House very much while it was waiting for the Judiciary Committee to come forward with some amendments which were in preparation for the sundry civil bill. Evidently he knew very little about gophers or any other pests which are injurious to growing things.

Immediately following him Mr. Bowers was recognized, and for five minutes he proceeded to go for the friend of the gophers. He said in part:

"I do not know how it is in Georgia, whether they have many gophers or not, but in the State of California and all over the Pacific Coast and in New Mexico and Arizona, one of the most important questions to the farmer is how he can exterminate gophers. There is no doubt but that means more dollars to all that country than almost any other question.

"Let me call the gentleman's attention to another matter. A short time ago orange trees all over the State of California became covered with black scales. All sorts of experiments were tried to destroy them as they were destroying the trees, but none succeeded until a Government agent was sent to Australia. After being there a year or so, he sent over to this country some little lady-bugs, not much bigger than the head of a pin. They were colonized in California, and in the course of three or four years they have saved orchards in that State worth millions upon millions of dollars.

"The gentleman has criticised the expenditure for printing reports of experimental stations. All the printing this Government can do for the next 100 years will not be worth so much as that one act of that one Government agent, which has been of more value than the Agricultural Department has cost since it was founded.

"Again, within a few years, a scale attacked olive trees in California. Thousands of acres had been planted to olives, and it was a growing industry in that State and its very existence was threatened by another scale. One of the Department agents has within two years found in Australia another little bit of a bug and brought it to California. These bugs have been introduced and colonized in the orchards there, and they are to-day saving the olive orchards. Where an orchard was not worth five cents, the successful introduction of that little bug has made it worth \$10,000. These special field men have saved more money and been of more value to us than the Agricultural Department will cost in the next hundred years.

"I want to say to the gentleman that there has been a great deal of fun made about this, but it reminds me of a little circumstance I heard related recently. A traveling man down in Tennessee, in one of the outlying places called Mayville, was introduced to one of the natives, who asked: 'Stranger, where do you live?'

"'Why,' said he, 'I live in New York.'

"'How far mought that be from Mayville, stranger?'

"The traveler said, 'About eight hundred miles.'

"'Good Lord,' ejaculated the native; 'stranger, how lonesome you must be so far away from Mayville.'

[Laughter.] "I often think when I hear people talk from the standpoint of their own localities that they ought to remember that the United States is a great big country. There are many great interests that, while not affecting one State, do affect other States, and I want to say, in justice to the

Agricultural Department and to those field agents and to those experimenters that nothing is more important to-day than that some effectual way be found to destroy the parasites which prey on the fruit trees of at least ten States in the Union, and that some effectual practical method of destroying gophers may be discovered."

There are eight experimental stations in operation in California under the Agricultural Department, and another is to be established shortly. There is one at the University of California and others at Paso Robles, Tulare, Chino, Mission San Jose, Chico and Santa Monica. The two last are devoted to forestry. Last year the work of each station was embodied in a valuable brochure. It was against the appropriation of money for printing and distributing these publications to parties who are peculiarly interested in the success of various agricultural experiments undertaken at such stations that Mr. Black saw fit to inveigh.

THE DAIRY.

Danish Improvements in Butter Making.

Some months ago we published a review of the Danish export butter industry, prepared by Prof. C. C. Georgeson, who was sent abroad by the Department of Agriculture to make inquiry into the Danish methods. There has just appeared from the department Prof. Georgeson's complete report on the "Dairy Interest of Denmark." We take therefrom the following paragraphs, showing advanced methods in handling cream, by which many of the difficulties which constantly arise in dairy practice are overcome:

TREATMENT OF THE CREAM.

Sweet-cream butter has so far not come into demand in Denmark, either for home consumption or for export, and there is but little, if any, of that article made. The treatment of the subject is therefore confined to the methods practiced for the production of butter from sour cream. There are two reasons for souring the cream aside from the one that sweet-cream butter finds no sale, viz.: First, it is found that sour cream yields more butter than sweet cream, and, second, souring or fermenting the cream is, in accordance with the present standard, thought to increase the aroma and good taste of the butter. Experiments have proved that the difference in yield of butter by the two systems is about 4 per cent, or very nearly equal to the difference of one pound of milk for each pound of butter.

STERILIZATION OF THE CREAM.

The first essential condition to success in butter making is to have a good quality of cream. It must not be affected by bad odors, nor by bitter, salt, or other offensive taste. These faults may be due to the cows, in which case their milk should be withdrawn from the creamery. Investigations have proved, however, that in the vast majority of instances faulty cream is due to bacteria, many forms of which, both useful and injurious, have been discovered. To counteract their influence, it has been the practice in many Danish dairies during the last three or four years, either to sterilize the cream immediately after it is separated or the milk before separation takes place. How this could be done was first pointed out by the great Frenchman, Pasteur. He showed that by heating the liquid containing these bacteria up to 75° or 80° C., the greater part of them would be killed, and after him the method is frequently called pasteurization. Prof. Fjord was the inventor of the sterilization apparatus, which has already been described and which is in common use; but it is not absolutely necessary to use this machine. The same result can be reached by the use of boiling water, whether this water is heated by steam or in a kettle over the fire. The latter method I saw used in several places with success. In that case the cream is put into tall cylindrical milk cans, which have first been thoroughly cleaned by washing in milk lye, or by the addition of soda to the wash water, or with water containing lime in solution, and thereafter cleaned by a jet of steam, or, if steam cannot be had, scalding water.

The cream cans are sunk to the rim in the hot water, and this is kept near the boiling point either by the constant addition of boiling water or, what is more convenient, by heating it with a jet of steam through a pipe. The cream in the cans is constantly stirred, so that it may warm equally through the mass, care being taken that the paddle used to stir with has been thoroughly cleaned. It is, in most cases, made of galvanized iron. The dairymaid holds in one hand her thermometer immersed in the cream, while with the other she keeps up the stirring, watching the rise of the temperature all the time, and when it reaches 80° C. (176° F.), which temperature should not be exceeded, she lifts the can out and at once immerses it in ice water, where, by continual stirring again, it is cooled as rapidly as possible till it reaches about 35° or 36° F. It can then remain standing in the ice until such time as it is found convenient to begin the fermentation. The sterilizing apparatus differs from this as to result only in that it does the work more rapidly, with greater certainty, and with less labor on behalf of the dairy people. As already described, the cream runs into the bottom of the apparatus from a reservoir, which may be filled directly from the separator, and after being heated by the steam while it is stirred by the agitator in the machine it runs out again at the top in a continuous stream, and the cream is then either cooled by immediately running over one of the coolers described or it may be placed in cans and these be set in ice water. The object of it all is to free the cream from bacteria of all kinds, and then, by the addition of a previously prepared ferment which is known to be pure, to ferment the cream to such a degree that it shall be capable of producing the best quality of butter.

METHODS OF FERMENTATION.

(1) *Natural Souring*.—Treating of these in the progressive order in which they have been brought into use, I

shall first mention the souring of the cream without attempting to influence the result by artificial means. This is the old-fashioned way. It is still used now and then on small farms, the owners of which have not kept pace with the times. Sterilizing is unknown to this method. When skimmed from the milk, cream is at once poured into the cream barrel, which is kept in some corner of the milk room, or, in the colder seasons of the year, may be alongside the stove in the kitchen, or in any warm room where it will be liable to sour quickly. This method, as stated, is now only used in small places; but I mention it here because with careful manipulation the results may be entirely satisfactory, provided that the milk room is clean and sweet, that the milk is from sound cows, that the stable is kept clean and airy, and that there are no contaminating influences outside, such as from stagnant water or manure heaps and the like, which can gain access to the dairy room through the air. This might be styled self-souring, or natural souring. I would not have it understood that all Danish dairies sterilize their cream or milk, for this is far from being the case; they do so only when they find it necessary in order to produce butter of first quality. I visited several places where the conditions were so favorable, the premises kept so clean, that it was not necessary to sterilize the cream at all, but they, nevertheless, fermented the cream by one of the following methods:

(2) *By the Use of Buttermilk.*—In this case a portion of the buttermilk is taken from the churn immediately after the butter is removed and added to the cream barrel. The quantity used will differ much according to the quantity of cream, the sourness of the buttermilk, the season of the year, and also with the length of time that the butter-maker desires to give to the fermentation. It is a matter which each butter-maker decides upon for himself, according to his experience. But I can say that it does not usually exceed 10 per cent of the cream, nor less than 5 per cent. The objections to the use of buttermilk are, that if there is any defect in the churning from which it is taken it will, of course, transmit the same defect to the cream, and the undesirable qualities are thus perpetuated. It is also somewhat more difficult to keep the fermentation under complete control, in that the buttermilk is liable to vary more in acidity than any other form of ferment. If it is found by experience that the buttermilk does not produce the right flavor in the butter, from whatever cause, it is a common practice to resort to a neighboring dairy for the buttermilk; and experience has proved that sometimes this expedient will entirely overcome the injurious influences which affect the cream and butter, and that when this is done once or twice the buttermilk from the home dairy can again be used for some time with entire satisfaction. Before the ferment, of whatever kind, is added the cream should be raised to a temperature which varies between 70° and 95° F. This is done either by running it through a forewarmer—the apparatus described as being used to heat the milk before it runs into the separator—or by simply immersing the cans of cream in warm water and gently stirring until it reaches the desired temperature. Still another method of warming it is to insert a cylindrical can of small diameter filled with boiling water into the cream can or cream barrel and allowing this to stand until the cream reaches the desired temperature, it being gently stirred in the meantime. In any case, the cream should be warmed to the degree mentioned before the buttermilk or other ferment is added. In the cool season of the year, precautions are taken to prevent the falling of the temperature too low in the cream barrel until the fermentation is complete. These precautions consist either in keeping the room warm by a stove or steam pipe or in having the cream barrel stand in a box or large barrel prepared for the purpose, so that it can be packed all around with hay, and a similar covering—either a quilt or hay mattress—is put over the lid of the cream barrel. The proper degree of fermentation is usually reached in the course of 18 to 20 hours. The butter-maker starts the fermentation at such a time that the cream will be ready to churn at the most convenient hour the following day. I found, in most cases, that the fermentation was started at about noon; the cream would then be ready to churn by 6 o'clock the next morning. During this interval it was gently stirred two or three times and the progress of the fermentation watched by the changes in appearance, in taste and in smell.

(3) *By the Use of Sour Cream.*—Sour cream is occasionally used as a starter. A portion of the cream churned to-day is thus set aside in the morning, and at noon added to the cream that is to be churned to-morrow. Practical butter-makers admit, however, that sour cream is even less desirable than buttermilk, for the reason that, owing to the presence of the fat and off taste which it might have, it is not so readily detected as in the use of buttermilk, and it, in like manner, perpetuates whatever faults there may be from one churning to the next. In all other respects, the preparation of the cream for churning is the same as already described.

(4) *By the Use of Skim Milk.*—In the use of both buttermilk and sour cream as a ferment there is a continual perpetuation of the same fermenting elements from week to week and month to month as long as continued. It is found that, in many cases, injurious bacteria creep in, and, after a time, the ferment degenerates and fails to produce the good quality of butter that it did at first. This is, in a measure, obviated by the production of fresh ferment every week or two, as the case may require. Such ferment is usually made from half-skimmed milk—that is, milk which has stood from ten to twelve hours and then been skimmed. It is this milk which, by being heated to about 100° F., and then allowed to stand at a temperature of about 70° F. for from 24 to 40 hours, according to the season, will develop the ferment, which can be used for souring the cream. The milk used for this purpose should be from a nearly fresh cow. Milk from cows about to go dry does not answer the purpose. Good judgment is required on the part of the butter-maker to obtain the right degree of acidity in this ferment. He examines it frequently, smells it, tastes

it and notices its consistency. It should have a certain degree of thickness, and show the formation of small granules, and should have a clear, sharp taste. If it has a bad smell or taste, or if it does not thicken properly, it should be rejected. As soon as it reaches the proper degree of consistency and sourness, the fermentation is stopped by immersing the can containing it into cold water, where it can remain for a few hours, if necessary, before it is added to the cream. The cream is prepared to receive this ferment by being warmed to a degree varying with the season, from 75° to 84° F., or even more. The top of the ferment in the can should then be skimmed off and discarded, as it may be contaminated with bacteria from the air, and from three to five per cent of the volume of the cream is added to the cream barrel from the remainder. The cream barrel is now covered and kept at a temperature of about 75° F. until it is ready to churn on the following day. The length of time that it stands varies with the season and the temperature in the cream room, from 18 to 24 hours. This, however, is not the invariable method followed.

Sometimes cream is added to the skim milk before the fermentation begins; at other times the milk is not skimmed at all. The result, however, is the same. A new ferment is obtained, which, if the proper care has been exercised in its production, is capable of souring the cream in such a manner that it will produce a first quality of butter. However, this expedient does not always work satisfactorily. If the dairy building or the surroundings are impregnated with injurious bacteria, these are sure to infest this new ferment also, and it fails in a short time.

(5) *By the Use of Pure Cultures.*—When all things else fail to produce the desired quality of butter, resort is had to the use of an artificial ferment, the so-called "pure cultures."

The Danish dairy experts have been at work for several years on the isolation and culture of those bacteria which have been found to be the active agents in the fermentation of the cream, and, some two or three years ago, success was so far attained that these artificial cultures were offered on the market for use in the creameries; and at the time of my visit last winter there were three laboratories in which these ferments were cultivated and sold. The methods followed in the production of these cultures are secrets belonging to the respective establishments, which will not be divulged. However, it would appear that any good bacteriologist who had studied the question carefully could reach the same result. The bacteria used were obtained from the finest qualities of butter. They have been isolated and experiments have revealed the nutrients needed for their growth and the temperatures at which they can be most readily propagated. I do not think that any of them claim to know all there is to be known on the subject. They steadily discover that improvements can be made by slight alterations in the methods and that new bacteria heretofore unknown are added to the list. It is certain that the different species of bacteria produce notably different results in the taste and aroma of the cream and butter. Mr. E. A. Quist, of Skanderborg, uses only two species, very distinct in appearance and in the quality they impart to the butter. They are cultivated separately and mixed just before they are sent out to the customers. Blauenfeldt & Tvede, on the other hand, use several kinds in their ferment, which may or may not include those used by Mr. Quist. The results of the use of these pure cultures have been so eminently satisfactory in practice that I found them in very common use. A new starter of these cultures is not needed every day or even every week; and as they are sold reasonably cheap, the expense connected with their use is but slight. When used according to directions sent with them they insure the production of a first quality of butter, which is of greater consideration than the expense their purchase involves. The three laboratories I have mentioned prescribe different methods of procedure in their use, which proves that there is no hard and fast rule that must be followed in order to obtain the desired results. That is, there is a possibility of the extension of this science far beyond our present knowledge of the subject. These artificial cultures are used more particularly in dairies which seem to be infected with injurious bacteria, and, to attain the best results, the cream should be sterilized before the ferment is added. The pure culture is added to a small portion of sterilized milk or cream, and then set aside at a given temperature until it has attained the proper growth. It is then further propagated in a still larger quantity of milk or cream and, when a sufficient quantity has been obtained, it is added to the cream in the cream barrel, where it accomplishes the desired fermentation in from eighteen to twenty hours. At the time of my visit none of the laboratories had succeeded in devising means to perpetuate the ferment outside the laboratory for any length of time. It was, therefore, a difficult matter to obtain pure cultures for transmission to America. The preparation required for their transportation during two or three days would not answer the purpose when the journey was extended to as many weeks. I am convinced, however, that it will not be long before this difficulty will be overcome.

There are a few points in the treatment of the cream concerning which no definite directions can be given. One of these is the per cent of ferment, whatever kind is used, which should be added to produce the best results. This depends upon so many things that no definite rule can be given. It depends upon the sourness of the ferment when it is added, upon the length of time it is desired to have the cream stand before it is churned, and upon the temperature which it is practicable to maintain; and in the adjustment of these to one another the butter-maker must follow his own judgment and experience. It is a well-known fact that the fermentation proceeds more rapidly in warm weather than in cold weather, and in summer the process, therefore, usually takes a shorter time than it does in winter. It is essential that the cream should stand in a room with fresh air. In damp and musty air the cream will be sure to lack the aroma and pleasant taste which are so highly prized. It is a maxim in Danish dairying

that to obtain the finest quality of butter, which shall keep well, the fermentation must be strong, and that it should not be stopped until the cream has become thick and shows a peculiar granular appearance and at the same time develops the pleasant aroma belonging to good butter. When this point is reached the cream should be churned.

THE IRRIGATIONIST.

How Much Water Do Crops Need?

TO THE EDITOR:—Major Powell's estimate of needed moisture has wrought good results—it put people on inquiry, and it is bringing out personal experiences. Here is mine:

In October, 1888, I moved on to a ranch in what is known as Antelope valley in Tulare county, a sort of side valley putting in from the great San Joaquin valley, close against the foothills northeast of Visalia and say five miles from the Kaweah river. I kept a record of the rainfall and a diary of the crop conditions.

Rains began that year November 15th and ceased May 6th following. The rainfall by months was as follows:

November, 2 7-16 inches; December, 2 3/4 inches; January, 1/2 inch; February, 3-16 inch; March, 4 3-32 inches; April, 3-16 inch; May, 1 1/2 inches. Total, 11 29-32 inches. Besides there were half a dozen light showers too small for measurement.

We sowed that year 470 acres of wheat and 60 acres of barley. Plowing and seeding began November 7th (no rain having then fallen), and about 30 acres were dry sown. The year before the land had been summer-fallowed imperfectly. We finished sowing December 23d. As will be seen, January and February were dry months. In February the weather was very hot, so the grain curled in many places. March was rainy and the grain revived. But the long drouth of February caused much of the grain to have short heads. By May 1st barley was white, but not ripe enough to cut, and very stout. The May rain knocked the barley flat, from which it never rallied, and lodged considerable wheat. We estimated that one-third of the barley crop remained on the ground after harvest.

About 16 acres of wheat were ruined by incursions of neighbors' hogs and wild swine from the mountains. What we sacked was: 60 acres of barley, 107,996 pounds; 470 acres of wheat, 531,504 pounds.

The plowing was of the shallowest, and all the operations were designed to cover the most space in the shortest time, regardless of the character of the work done.

The moisture was sufficient. As it was, much grain lodged. More rain would have destroyed more grain by falling.

It is a strange anomaly that in the San Joaquin valley, confessedly the oven of the State, so little rain can mature a crop; while the same amount of rain in the region around the bay, with a cool climate, would be considered insufficient.

With the rainfall of seven inches for the season, properly distributed, on summer-fallowed land, I am satisfied a good crop can be made in that part of the San Joaquin valley. In fact, there, a moderate rainfall brings better crops than excessive moisture.

In the succeeding year, 1889-90, by January 4th 12 inches of rain had fallen, and the season gave over 20 inches; yet the crop was almost a total failure because of too much rain, although the pastures yielded very abundant feed.

STEPHEN G. NYE.

Oakland, March 13, 1894.

[This is right to the point. Let us have a hundred such records of experience and observation. We want to put this need of crops in arid regions on a sound basis.—ED.]

FRUIT MARKETING.

What the Orange Business Needs.

A St. Louis correspondent of the *Fruit Trade Journal* thinks the railway tariff, and not the tariff they are tinkering at Washington, is the one orange-growers should give most attention to. We rather believe that it is both of the tariffs that need watching and working on, but the St. Louis man's points are interesting. He writes:

"California is looked upon as a Republican State and Florida as Democratic, but the orange-growers of both seem to cry aloud for a higher tariff on oranges. On this subject they are a unit and their leading papers seem to indorse their claims, but if there is one industry that has passed the stage of 'infancy' and does not require any tariff legislation, that industry is the production of oranges. This fruit cannot advance in price, indeed would not, even if there were no more oranges produced outside the United States, not even if a tariff of \$10 per box would be levied. There are now so many oranges produced that it requires not only the wealthy, but also the poorer class of consumers, to use them freely and regularly, if sale is to be found for the crops of our own orange-producing States. A Chinese wall against outside oranges would not raise the price of oranges in this country; the quantity produced is so great and the increase so sure and rapid that it will require still lower and lower prices to move them at all, and no protective tariff will have any effect. We will meet them and beat them with our natural advantages and superior quality, which factors have already almost driven the foreign oranges from our shores. There are not one-twentieth as many oranges imported as there were ten years ago, and in five years there will be none. The help for the orange-grower lies along another line; his relief must come from the railroads, which now charge double as

much freight to some sections as they should charge; this fact is patent to all who have investigated the question. No, Mr. Grower, look at your own doors for relief. Eliminate the unnecessary and ruinous railroad tariff. Find out why the St. Louis receiver of California oranges must pay 87½ cents per box freight, and New York only pay 87½ cents per box. Why Kansas City must pay 87½ cents per box, and Boston the same rate of freight from California. Make the railroads haul the Kansas City, St. Louis or Chicago buyer his car of oranges for say 50 cents per box, and you will see a big increase in the demand. Prices will be maintained at leading points; the railroads will get more freight and will make as much money; justice, simple justice, will be done the Western dealer, and an actual help will be given to orange growing that no protective tariff can or ever will afford.

"No, gentlemen of the orange countries, your commercial salvation lies in getting your commodity into market at a less expense. The only tariff from which to get help is that of reduced railroad tariff. Worship not the god of 'protection'; it will not protect you. Such an idea is erroneous and misleading. If all you ask for were obtained, it would afford you no relief. Concentrate your powers for a reduction of freight rates to markets now suffering from the effects of most unjust and inexcusable discrimination and you should and will get relief."

A San Jose Man's Conclusions on Fruit Shipping.

Mr. H. E. Bullock of Oakland has for a number of years owned and operated a fruit orchard near San Jose. He has given much attention to fruit shipping and has taken unusual pains to learn the results of others. The conclusions from his experience and inquiry were recently prepared for publication, and we take the following from the *Chronicle*, where it appears over his signature. Other fruit men will be interested to know and discuss his conclusions:

Having made fruit marketing a study for the past ten years, not only shipping and selling the product of an 86-acre orchard in Santa Clara county for a time, but experimenting with different devices and methods of carrying, curing, canning, drying and packing, I feel like disclosing what knowledge I have acquired by accident and by experience.

There are those who believe the fruit industry, from its peculiar conditions, especially the financial distance which separates growers and consumer, is fated. It certainly would seem so when business and financial questions are considered. Why wheat, oats, barley, corn, coffee and sugar, which cost more to produce and prepare for the consumer, can be delivered to the consumer on a basis of two cents a pound over cost, while fruits of all kinds range from 10 to 19 cents, is among the unsolved problems of the age, and reflects seriously, it seems to me, upon the intelligence of the horticultural fraternity of the world.

Out of correspondence, addressed to about 200 fruit-growers and shippers, I was complimented by answers from 160 persons, in which there were full answers to the following questions: How many cars have you shipped East this season? How much was paid for freight? How much for refrigerator service? How much for commission? What did your fruit sell for at destination? What was it worth at the point of shipment? How much was the reported damage? How long were the products on the road?

For some reason, nearly all of the writers prefer that their names be withheld, and consequently I fear that I shall not be able to utilize their methods or their names and prominence; but I may state in a word what they need, and that is a shorter time for car service and lower rates of transportation. I suggested in my letter that if combined action were taken, and itemized statements made showing a necessity for a change in these matters, the railroad companies would, I believed, seriously consider the matter.

The substance of the complaints is as follows: That rates are from \$10 to \$30 a ton too high on fast freight and express time; that the refrigerator service only helps to decrease receipts; that 65 per cent of all shipments is reported damaged, even if in refrigerator cars; that fruit cars are sidetracked and remain there until the fruit is spoiled; that twelve days instead of six is the average time taken to reach Chicago; that often cars are on the road from 20 to 25 days; that there is a striking similarity in the reports from commission men about the condition of fruit; that, while a very few boxes of each consignment bring high figures, the bulk goes at a very low price; that the average net price to the grower is a trifle less than a cent a pound, while the average price for the past season in Chicago for good fruit has been over nine cents.

The railroad and the commission men, judging from these reports, are considered the source of all the trouble.

I found to my surprise, by letters from several heavy shippers, that they pack and box all their shipments, charging the grower 1¼ and 1½ cents a pound for doing it; that all fruit is packed in boxes by pressure to lessen the dead weight of the boxes, and, as some say, "to keep the fruit in better condition."

Is there any wonder, then, that 65 per cent of all shipments is damaged, when the fruit is so compressed that evaporation is checked until mold and decay set in? Did any one ever buy a box of oranges, lemons, apples or other fruit, packed with wrappers and pressure, in which there was not spoiled fruit in the center of the box? And why always in the center? Simply because the air is excluded. Yet fruit-growers, who know much about the nature of fruit, will allow shippers to pack their fruit in such a manner that it cannot keep, and pay them 1¼ cents for doing it. Most likely the same grower will curse the railroad company for charging 1¼ cents a pound for hauling this rotten fruit 3000 miles to a dumping-ground. They go to a shipper and let him press 20 pounds in a 15-pound box, where it is to re-

main for say three or four weeks. Such is diversified fruit logic with the growers.

I found two years ago, while in the Southern States, great complaint among the orange men, especially in Florida, that decay was robbing them of about 80 per cent of their fruit shipments. That season being worse than usual on account of heavy frost, the fruit would decay in from six to eight days after it was boxed. No one could understand why the fruit kept so poorly, until finally some one suggested that soft fruit wanted more air than hard fruit, and some of them "caught on" at once, and shipments after that proved the point. They put a thin board partition between each layer of these soft oranges, and the loss was even less than on shipments made theretofore of sound oranges.

I have in my office now a box of frost-bitten oranges, shipped from near Riverside by freight to San Francisco, then shipped by me to Salt Lake City and back by express. It is now over two months since they were picked, and they are in as good order as when taken from the trees, showing conclusively that all that is needed is fresh air. The oranges were shipped on shelves in one-tier layers. I am satisfied that frost-bitten oranges, if frosted after they are fully developed in size, can be kept as long as any other if given air and light; that a light frost does more good than harm provided the orange is not allowed to remain in the sun or wet, as it makes them much sweeter. I have no trouble in keeping my oranges the year round, and have some now over 16 months old.

To come back again to the fruit shipments: Statistics compiled for five years show the average of prices obtained by the grower on all kinds of fruit, except strawberries, to be about one cent a pound; that the consumer on this coast pays 10 cents, and in Chicago, New York, Philadelphia and Boston 19 cents a pound; that for canned goods the grower obtains less than half a cent a pound, and the consumer pays over 9 cents per pound, this statement including tomatoes. Now there is as much expense, in labor and material, to get fruit in good order to the consumer as there is in sugar, flour, cornmeal, oats, barley or rye. Why, then, should there be such a difference in receipts?

This proposition is plain enough. We all know, if we will stop in our hurry long enough to think it over, that there should not be such a loss between the grower and consumer, when the railroads get less than 1½ cents, the commission men less than half a cent, the box men less than one cent and the grower less than one cent a pound. All these charges make four cents. This showing would indicate that about 80 per cent of all of our fruit is spoiled in shipping, which is not true, for the reports on last season show 65 per cent damaged, or reported so. Of course the reports have it that the commission men grade the fruit as they please and then sell it to their brokers, who supply the dealers. Even if this were true, whose fault is it? Is it not that of the shipper who packs his fruit so that no person can tell what its grade is, and so that it must be bought by guesswork? There must be a big margin when it is notorious that almost every box opened shows more or less decayed fruit. Now, if the dealer or broker could see what he was buying there would be no such chance for pernicious grading. The commission man might not get so much money from his broker, but he would get much better prices. If it is a fact that handling fruit is such a gamble that no one is properly paid except that one who is in a position to count the spots on the wheel, then is it not time for the fruit-grower to show his goods? Let us do business as others do; let us show what we have to sell, and not work under cover any longer.

So little faith is put in the statements of commission men that nothing but ocular demonstration will do. The grower must use part of this fifteen cents a pound that is now thrown away to procure vehicles that will save his fruit while in transit and show it in all its beauty to the dealer and consumer at its destination. Of all the things men traffic in there is nothing so fascinating as luscious fruit. Then why, I ask, must it always be sold by guess and under cover? Growers will haggle about the price of respectable boxes to show their products, rave about the rate of hauling goods 3000 miles, and denounce the commission men; but when it comes to stating the causes of such small profits they seem to be as silent as a tomb. The effort lately made to concentrate and organize for better protection and distribution is a long step in advance; but unless it leads to a method of transportation that can be utilized for a better purpose than a 3000-mile haul to a dumping-ground, business will remain prostrated, as it is now, all over the world. If fruit be kept in boxes, without pressure except of its own weight, with free access to air, it may remain in transit thirty days without injury, even the softest of early May peaches. This has been tried repeatedly and proved, but to those who have not tested this matter the statement will meet with denial, yet it is a fact. It costs money to make tests, consequently few are made.

A man near Santa Barbara discovered a method some three years ago of curing lemons by picking them as soon as they reached their normal size and placing them on shelves in a shed free from sun and fog. This process cured them as well as any lemons from Sicily, and yet this same man, after his lemons are ready for market, packs them in the ordinary lemon box, with pressure, and they reach the market in as bad condition as though shipped from Sicily. His keeping them on the shelves for from three to six months in good condition taught him nothing except to pack with pressure, to shut out the air, and to let his fruit rot in a few days' voyage to San Francisco.

Grapes were until recently shipped East in twenty and forty-pound crates, pressed in so hard that the air was excluded. The result was only those on the outside could be sold on arrival. Now they are put up in five-pound boxes and are shipped with better success, but still many are spoiled, when all should go sound. They must not be pressed close to one another, even in small boxes. Cut the stems, place them in thin layers with wood fibers, thin partitions between them, and the grapes will reach the market

all right. The same method applied to other kinds of fresh fruit will give the same results.

What the growers should ask of the railroads and commission men is good cars and a prompt service, and for this they should be willing to give fair pay. To ship fruit in air-tight cars in air-tight boxes, unless in such cold air as to stay the ripening process, is, to my mind, as near to lunacy as the grower can get and still enjoy his freedom. I say to all growers, ship only in boxes that admit the air freely; do not press the fruit one layer on the other, or ship in cars that are air tight, unless you can make the thermometer show from forty-five to fifty-five degrees while in transit. More business tact and less trusting to old-fogy notions and methods will be in the line of improvement in this business.

THE STOCK YARD.

The Cow that Beat the Record.

Written for the RURAL PRESS.

She was a cross-bred Shorthorn, and descended from a cross-bred sire and cross-bred dam, and is, therefore, a living proof of the fallacy of the opinion that the second cross is worthless.

That is what the *Agricultural Gazette* says about the breeding of the cow that beat all previous public records in butter-making tests at the London Dairy Show. This cow gave in two days 154½ pounds of milk, containing 14 per cent total solids. The two days' milk made 7½ pounds of butter, or a fraction over, equal to 3½ pounds of butter a day.

To preach such doctrine of breeding in the manner in which this cow is bred would be accounted rank heresy with the majority of breeders of pure-bred cattle. Yet we do not have all the good ones among any of the pure breeds. The cross-bred ones very frequently come out of the fat-stock show ring as "best beast of any breed."

It has thus far been the same at the dairy shows. In 1892, at the London Dairy Show, a black polled cow of unknown breeding beat all previous public butter records by producing about 3½ pounds of butter per day, and now we have this quantity exceeded by the cross-bred (or grade, in this country) Shorthorn cow Capitol, nine years old.

It is quite true that many good and useful herds of both beef and dairy cattle have been bred and brought to a high state of perfection by using good bulls of well-known strains of cattle that have been bred for generations without regard to pedigree. There have been many such cattle in California, descended from cows that were brought across the plains some time in the "fifties."

I remember several of those cows, nearly all great milkers, that had all the characteristics of pure-bred Shorthorns; in fact, some of them were known to be so, but pedigree was not much thought of then. The cattle were just as good cattle without pedigree as they would have been with it, and there also was this advantage, that the owners were in no danger of falling into any particular line of breeding, and could choose their stock bulls indiscriminately, and thus avoid too much "in and in" breeding.

To their credit, however, they used good Shorthorn bulls whenever they could get them, and there were some big prices paid in those days. The people did not mind the price so much if they got what they wanted to use on a good lot of cows. I knew of one grade bull that was bought as a yearling for \$250. This same bull was sold for \$500, when about four years old, for exportation. He was used on some such cows as above referred to, and left some grand dairy cows, as good as any man need wish to own.

There are still many very good cattle in the State known to be descended from cows that crossed the plains. Good bulls have always been used, and I know of some of these now that are hardier and better cattle and worth more money than any pedigreed weeds ever were or ever will be. There have in times past been a great many of these sold for very large prices, because the "pedigree read well." Thousands of cattle have been ruined during the last 25 years through close in and in breeding. The fashionable name was "line breeding." It was all the rage with most breeders who owned what were then so well known as "Bates Shorthorns." A few had the courage to breed for the best, regardless of fashion. They suffered somewhat financially for a time, but they are having their turn now. Beef and milk are wanted to-day more than pedigree. The fashionable animal of to-day is the one that carries its pedigree on its back or in its udder.

It is now about a year since one of the at one time much despised "seventeen" bulls sold for \$200. Since then a good many bulls of the once fashionable Duchess family, that a few years ago commanded their thousands of dollars apiece, have sold for less than \$100, and, if I remember rightly, some of them as low as \$50. "How are the mighty fallen!"

About the time the craze for "line breeding" was beginning to spread, I was fortunate enough to get hold of four females and a yearling bull of a fashionable Bates family. They were good cattle and great milkers. There were two cows with each a heifer calf, a little inbred, but not for fashion's sake.

I happened to have at that time, 1871, an extraordinary good bull; his sire was an imported bull of Booth breeding, his dam a fine large cow of the then called "plain-bred" Pansy family that came from New York State.

I used this bull on the Bates-bred cows. He was of quite distinct blood and breeding, and no relation to the cows. This so-called out-cross produced some of the best cows I ever had, and their descendants are as good cattle to-day and as good milkers as they ever were, all through my "good luck" in avoiding that intensive "line breeding" which has been the ruin of so many once good herds.

In 1874 a gentleman in Kentucky wrote to ask if I would sell the two young cows that I had got with their dams in 1871. I answered him by writing a pretty big "No." However, in the spring of 1875, a man from that Stat

and having other business in California, came to see me about the two young cows. He admired my fine bull, as well as some young things got by him and out of the Bates cows, but thought it a pity to breed such a bull to cows bred as they were. I referred him to the promising and visible improvement in the cattle. He admitted that I was right in that respect, but "it does not look so well on paper." All I could answer was that my aim was to breed good cattle and not paper. I was also roundly blamed for this same thing by some other parties, but I heeded them not. I give this as a bit of my experience for what it is worth. It shows two things: First, the absurdity of some men's ideas on pedigree breeding at that time, which was finally carried to such a pitch that the animal itself was scarcely taken into consideration. The other is that, the male being the superior animal, we may take animals of two distinct families of the same breed that are in no way related to each other and by breeding them together obtain similar results in the improvement of both growing and constitutional qualities as are obtained by cross-breeding pure-bred animals of two different breeds, say the Aberdeen-Angus and Shorthorn, or the Shorthorn and Hereford, both of which are favorite crosses for the production of beef cattle.

I noticed that none of the in-bred or once fashionably bred liners were in the dairy tests at Chicago. I ventured on predicting that it would be so, through the columns of the RURAL PRESS, about the time the tests were first talked of. Such cattle have not the constitution required for such heavy work as would be expected of them in a prolonged dairy test. At the same time I also stated that it would be from the ranks of the plain-bred cattle, so called, of the old and useful sorts that had long been bred for their useful qualities, that the winners would come.

All who have looked into the pedigrees and breeding of the best Shorthorn dairy cows at Chicago will know how near I was to the truth, and that it was the plain-bred ones that headed the premium lists. They came to the test prepared to fulfill the conditions required of them—and they did it.

I have used the term "plain bred" in the sense in which it was used in regard to certain families during the time of the craze for "pure" Bates blood, and not in any sense as signifying inferiority of blood and breeding. I have always considered the best cattle of any breed to be those that gave the best results for the purposes for which they were bred regardless of pedigree.

In again referring to the London dairy show, I may add that the champion Shorthorn cow gave 121½ pounds of milk in two days, which made a fraction over five pounds of butter. Six Shorthorn cows averaged 1.65 pounds a day and 16 Jerseys 1.54 pounds a day of butter.

There was also a very large show in the butter-making classes, there being over 200 competitors. There were seven classes in which first and second premiums were given for best butter, and what will no doubt be a surprise to many is that in five out of seven of these both first and second premiums were awarded to butter made from cream raised in the old-fashioned way of setting the milk in shallow pans.

ROBERT ASHBURNER.

Baden, San Mateo Co.

THE APIARY.

Bee Increase Here and Elsewhere.

C. W. Dayton of Pasadena writes to the *American Bee Journal* his experience in California as compared with that in Iowa, as affecting colony increase and product. We quote as follows:

In Iowa (my former location) where the spring nearly always hangs on late, rainy and cold, the colonies are at their lowest ebb about May 1st, at which time the brood increases from three or four small patches (not enough to fill one comb full) to seven or eight combs full by the beginning of clover bloom, about June 15th, a space of about 45 days.

In California bees enter the most dormant state during October and November, and from this I conclude that it is as well to put bees into the cellar in the month of October as to wait until late in November and December.

If we begin about December 15th to feed one of those extra thrifty colonies in California, it would cause it to rear brood as rapidly as in the North in the middle of June. The great drawback in the North is the cold, rainy weather throughout April, May, and the forepart of June, so that it is nearly impossible to rear enough young bees to take the place of the rapidly disappearing old workers. Here, in December and January, these old bees are still young and in their prime, so that one of these extra-promising colonies may be easily encouraged to rear the 14 to 16 combs of brood in the 45 days from December 15th to February 1st. About this time it may be divided into eight nuclei, each containing two combs of brood and bees enough to make them decidedly better colonies than the average colonies in Iowa on the first of June. If we furnish combs, queens, and feed again, each one of these colonies may be divided into three parts in 45 days more, or the 15th of March. By the same process we can divide each colony into three parts again on April 15th, June 1st and July 15th, when we will have 128 colonies, which, if allowed to run through the fall, will be able to gather their winter stores from tarweed, fleaweed, pepper trees, etc., which yield dark, bitter honey every year through August, September and October.

If the bees are in a willow or eucalyptus district, during January and February they will be able to find their own feed. Then by moving them into the fruit belt to pass March, April and May, they will feed themselves again.

In Iowa and Wisconsin there were only a few scattering clusters of willows along the streams, but here are localities where willow exists in a continuous, unbroken jungle several miles in extent. Orange and other fruit blossoms

continue to open for three months or more, and every day as the weeks go by is a perfect honey-gathering day.

When the sages begin to bloom there is need of another move, and another for the fall crop. One colony, or even a dozen colonies, may do a thriving business getting honey from a single orange grove or a few willows, where a hundred colonies might starve. In Iowa there often came a cold, cloudy spell that lasted all through fruit bloom, and it was seldom there were three days at a time that the bees could visit the flowers, so that just about the time the colonies began to pick up a little the flowers were gone.

To increase one colony to 128, in one season, may involve more theory than most readers are willing to credit, but I assure them that what is described in the foregoing is possible up to March 15th, is precisely what I did last season, and what can be done again where queens, combs, weather and feed are a drug on one's hands. If the colonies build their own combs we should divide 128 by 3. If they also rear their own queens, then we should divide by 3 again. If we do not feed, divide again by 3, and what remains is about what a natural, unaided colony can do.

In case it is questioned as to whether there can be the ascribed progress made in 45 days, I quote from Mr. France's report on page 744 of *Gleanings* (1893), where it says: "On April 20th we had snow and cold weather. At that time the queens stopped laying, and, do all we could, we could not get those queens to laying again for three weeks." (May 11th.) "We commenced to extract the 19th of June . . . extracted very little after the 12th of July." Mr. France's bees built up from very weak colonies and gathered 120 pounds to the colony, all within 60 days.

We often see big reports of increase, and of hundreds of pounds of honey, gathered by single colonies, and though it may mislead or deceive the inexperienced, the experienced always know that there is no telling how big the results until the attendant particulars are understood.

The inexperienced, who have only watched a bee-keeper manipulate bees a little, are easily amazed, take up reports and spread them unreservedly. Some six or eight years ago extracted honey sold here for less than three cents a pound. That was an amazingly low figure, and was so thoroughly reported that consumers are still expecting to get honey at that price, presumably because California is an amazing country.

When the experienced beeman is offered three to four cents a pound for his honey, and the same is retailed at ten cents a pound by the gallon, he begins to conclude that it is better fun to amaze than to be amazed.

California Beekeeping.

Prof. A. J. Cook, of Claremont, Los Angeles county, whom we have mentioned several times lately as a very desirable accession to the ranks of California's progressive agriculturists, has begun to write of California beekeeping to the *American Bee Journal*. As the people east of the Rockies have such confidence in Prof. Cook, it will do our State much good to have his records of observation here widely published. These records are also of much local interest, so we republish the following:

The recent California State convention was one of the best bee meetings I ever attended. The hall was crowded all the time—a thing we do not often see at our National meetings in the East. Nor was the quality inferior to the quantity. Such men as Martha, Brodbeck, McIntyre, Woodbury, Corey, Wilkins, etc., are enough to make a rousing bee convention were they not inspired by numbers. Give them the inspiration of a large number of eager, intelligent beekeepers, and you can well imagine what a feast we had.

California a Great Bee Country.—Beyond question, California is by all odds the greatest apian district in the United States, if not in the world. From statistics gathered at the meeting, from several who have been in the actual work for years, we learned that while an entire failure was rare, they could count good years for two in three, and that a good year meant about 300 pounds of honey per colony for the whole apiary. With such facts before us, we may readily see that this is the very "Garden of Eden" for the beekeeper, or perhaps I would better say, the very "Promised Land." Here the business warrants attention, interest, enthusiasm—not simply for its fascination, but for the money there is in it. So the industry must flourish more and more here.

Bees and Fruit-Growing.—One of the questions discussed was the relation of bees to fruit-growing. I put all the emphasis I could upon the truth, that bees are a very important factor in pomology, which is a tremendous industry here. Now the fruit men look askance at their neighboring beekeepers, and some of them even oppose and try to drive the beekeepers away; but the tide is turning; even now a few fruit-growers are openly advocating the securing of bees in the orchards. Some are getting bees to increase their fruit, while a few are around with startling statistics showing that bees increase the fruitage, of especially pears and plums, astonishingly.

Thus the trend of sentiment, even with the pomologists themselves, is in the right direction. We propose this year to demonstrate some truths that will be eye-openers. So we hope to increase the leaven. When we show the fruit men of California that the bees are their friends, and not enemies, we will have won over to the advocacy of apiculture in California a large body of the most intelligent and progressive men to be found in any State or Nation.

Mr. Woodbury, in his very able and carefully prepared essay, among many other good things said: In Italy, where bees and fruit are alike important industries, and have been for generations, there is not only no discord, but the utmost harmony between apiarists and pomologists. They have learned at least that they do not antagonize

each other, even if they do not recognize their reciprocal value to each other.

Who shall state correctly the future of beekeeping in southern California, when a general appreciation of the value of bees to fruit-culture is secured, and comes to help the natural adaptability of this region to the business of beekeeping in making the importance of apiculture understood? We shall work untiringly to bring this happy consummation about speedily. So, very soon, California will be known as widely for its beekeeping as for its gold, its fruit, its marvelous salubrity, and its wondrous beauty and unparalleled climate.

Foul Brood in California.—The matter of foul brood is of importance here, where it was introduced by purchasing honey to feed. Thus Cheeshire's idea that honey does not contain the germs of this fell malady are again disproved. Excellent laws are in force, and with the general intelligence and enterprise everywhere present in this region among beekeepers, we need have little fear of this terrible microbe disease. It came in for discussion, as of course it should, but there seemed no tremor of fear, and so this one enemy—for wintering here is assured—brings really no serious disquietude to the beekeepers.

Marketing and Transporting Honey.—The marketing and transportation of honey is a live question in California, and called forth much earnest discussion and some suggestive resolutions. The fruit men have already organized in a way to make marketing more simple and satisfactory. It is hoped that the honey-producers may gain admittance to their association with great benefit.

Freight rates are enormously high on honey. The question of reasonable reduction will be pressed, and favorable action will without doubt be secured in the near future.

Hives and Manipulation.—Many matters of methods and manipulations were also considered. It is very evident that in skill of handling and arranging the apiary California is not a whit behind her sister States of the East.

Prof. Woodworth, of the State University, was present, and explained a sort of knock-down hive, which he feels may be advantageous. In this hive there are no frames, but the common one-pound section is used in the brood-chamber as well as for extracting and surplus comb honey. The hive goes together without nails. It should be put to actual practice when the propolis of the bees and the ease of manipulation could be studied, before it is recommended to young beekeepers.

THE FIELD.

Artesian Wells, Windmills and Electricity.

There is continual interest in the question of when and how far electricity can be made available to the farmer for lighting and work. It seems that in South Dakota they are doing much in this way with flowing wells, and the following account is given in a local journal: Near the city of Redfield, S. D., what is known as the Hassell Myers artesian well has been furnishing sufficient power to serve the needs for lighting the city. It was originally intended for irrigation purposes, and the cost of its complete construction was \$3000. Sinking to a depth of 1030 feet, the bore of the well is lined with piping from top to bottom, while outside of this six-inch pipe, extending from the surface down through the drift for a distance of 150 feet, is an eight-inch pipe which serves as a strengthening casing. The water comes from a stratum of clear, white sand and is soft and clean. The flow is 2027 gallons per minute, and the entire volume of the water is thrown 16 feet above the pipe. From a two-inch opening the water is thrown 158 feet into the air. The closed pressure of the well is 165 pounds to the square inch, and with a two-inch pipe the pressure is 128 pounds, while with an opening three-fourths of an inch larger it is but 95 pounds.

With a home-made water wheel 50-horse power is being developed, and the Pelton Wheel Company claim that with their wheel at the 2¼-inch opening the well will be good for 100-horse power. At the present moment two dynamos are installed, and furnish current for the city for both arc and incandescent circuits. The lights are remarkably steady, and there can be little doubt of the success of the experiment, if it may be so called. One mile from this is another of smaller diameter, but of equal pressure. The sand formation in which the water is found crops out at the base of the Rocky mountains, and also in the beds of the Upper Missouri and Yellowstone rivers. If such be the state of affairs and the beds are the same stratum, the supply of water would be comparatively inexhaustible.

Wells could be sunk in hundreds of places in the vicinity of Redfield, and the water thus obtained could serve as the power for numerous isolated plants. The wells now in existence have been flowing for nearly two years, and no diminution of the supply is apparent. Here, then, is a fertile field for small and even large manufactures, and if the industry is successfully managed great inducements could be offered. The owners of the plant state that it pays a yearly dividend of 15 per cent on \$15,000. The prospect is glittering enough.

Windmills for Electric Lighting.—There are said to be, says the *Electrical World*, no less than 500,000 windmills in actual daily operation in this country alone, and yet the economical value and thorough reliability of this prime mover is but little appreciated by the public at large. From a comparison between wind power, steam and gas for pumping purposes, which would equally apply to electric lighting, it appears, taking all the factors into consideration, that the former is more than seven times as economical as either of the latter, even when they are worked under the most favorable circumstances. The records of the Signal Service, U. S. Army, for the past 15 years show that the wind may be relied upon to blow with sufficient velocity to drive a windmill to its average working capacity

eight hours out of every 24. But since there are hours of absolute calm the employment of a windmill is necessarily restricted to two classes of work: 1. To work admitting of frequent interruption. 2. To work where power can be stored for future use. It is found by experience that it requires, on an average, a wind velocity of six miles per hour to drive a windmill, *i. e.*, to overcome the friction of the bearing and transmitting gears, but that the mill will actually run at least eight hours per day. From this it is safe to assume that one-third the total movement of the wind is lost, so far as windmill work is concerned. The remaining two-thirds should be distributed over the eight working hours of the mill.

POULTRY YARD.

Turkey Talk.

A lady a few rods across the field from me, writes a correspondent of an Eastern paper, has been notable for raising turkeys for 26 years. She always grows a large flock, even seasons when others say they cannot succeed at all. Her aim is to add annually to the family exchequer the sum of \$100 turkey money, which she even surpasses, and at an expense for feed of less than \$25, and the following method is how she does it:

The gobble is changed every year, for she has learned that turkeys will deteriorate by inbreeding quicker than anything else. It is natural for turkeys to hide their nests at some distance from the farm buildings. She steals a march on the birds by making nests for them in various places about the fences not far away. Just before time to commence laying. This usually suffices; but if an occasional one hides her nest elsewhere, she finds it by keeping the bird shut up until 10 A. M. When released, she is in such a hurry to lay that she proceeds straight to the nest and it is easy to follow her. The first litters of eggs are set under common hens, several at a time, that the chickens of two or three may be given to one, if thought best. The first time the hen turkeys desire to sit they are confined two or three days. When let out, they commence in a day or two and lay another litter. The eggs are gathered and retained until she wants to sit again, when they are given to her. While keeping the eggs in a dry place of equable temperature, they are turned over every day or two. All turkey eggs are set upon the ground. If common hens sit in nest boxes, the boxes are partly filled with earth first and then a very little fine litter added.

The young broods are all put in movable coops or soft grass sod, surrounded by movable board pens a foot high. When the turf in coops and pens becomes much soiled,

they are moved to clean spots. In rainy weather the young are confined to the coops. When they get so that they can fly out of the pen, the hens are let out of the coops and all allowed to wander where they choose, but only in dry weather and after the dew is off mornings. Traipsing about in wet grass is never permitted until after they are six weeks old, when they are allowed to go where they choose, except in very bad weather.

The young turkeys are all kept near together until finally released that they may become used to each other and herd together and be protected by the mother turkeys when the common hens have weaned theirs, as they are sure to do at an early day. Young turkeys until nearly grown need the protection of old ones as much as children need the protection of their parents from human hawks and other evils.

As a rule, adult turkeys are not afflicted with vermin, and consequently their young are not; but not so with common hens and their turkey chicks. To provide against this, the common hens are dusted with insect powder once a week from the time they commence sitting until they are released from the coop. Their young receive the same treatment. The disease, "gapes," does not trouble this woman's chicks. She has formed her own theory about this disease, and it appears reasonable. She has found that, where there are no hen lice, there is no gapes; hence lice must be the cause of it. It is folly then to say that old cooping ground is contaminated with the seeds of gapes unless lousy fowls have been cooped there. She proves her theory by cooping her broods on the same ground continually, and yet her chicks escape the gapes. Her chicks are never afflicted with rheumatism. She believes this disease is caused by resting too much on wet ground. As the ground in her coops is always kept dry, the disease is escaped entirely. Chicken cholera does not bother.

The system of feeding is peculiarly her own, adopted after thoroughly testing, and she would have no other now. For the first two or three days she feeds crackers crumbled into sweet milk, or bread when she has not crackers. This is generally changed to cracked corn partly boiled and then mixed with curd. Sometimes she adds a little salt, but does not make it a point to be regular about that—in fact, she cares little for it. In stormy or cool weather, pepper is occasionally added. She also adds chopped onions or onion tops when she has either, but does not care to mind much about this. The first two weeks the chicks are fed five times a day, and then dropped to three times, and, when they begin to forage well, to twice a day, and finally to once a day and always at night to keep up their habit of coming home to roost. In six weeks the curd is discontinued; but she continues to scald the cracked corn.

For drink they have clear water and sweet milk, but never sour, as it is believed to induce scours. Drink and feed vessels are kept scrupulously clean and sweet. To fatten turkeys in the fall, only whole grain is given in a

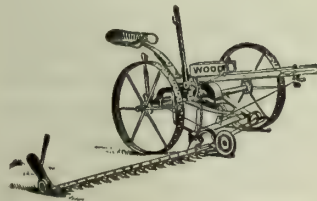
covered and slatted feed trough set so high that common fowls cannot reach it. This is kept supplied with corn continually. She declares turkeys eat less grain than common fowls when both get what they want. This successful turkey-grower's methods are so plain and simple that by following them anybody ought to succeed.

The Beginnings of Chicken Life.

Always take out the little chicks from under the hens as soon as they are dry, and even sometimes before they are quite dry. While the hen is hatching, the little things are very liable to be crushed. Their little peep is so faint that the hen does not know she is crushing them. I keep an old piece of soft flannel in a basket, in which I put them, and cover them well with it. Sometimes the hens are two days hatching, and as the chicks want to eat before this time I made, for greater convenience, a frame and covered it with wire gauze netting. This I set in front of an open wood fire. The frame keeps the chicks from running into the fire or under one's feet, and at the same time they have the full benefit of the fire, take a little exercise, and pick up some bread crumbs. By the time the hen is ready to take charge of them, they are quite strong and not easily crushed. The only time I lose any chickens is when I neglect to take these precautions. The easiest way to make one of these frames is to take two rounded pieces of barrel heading and connect them at each side by an inch-square piece, then just tack the netting over this. Of course they may be made of any size desired, but I find one that is two feet long by 18 inches wide and five inches at the highest part, a convenient size.

Save all of the broken china, to crack up and give to the growing chicks. They go frantic over it. I first began cracking it up in the yard where they were, but they crowded under the hammer so that I had to crack it up outside. Broken cups, saucers, or dishes, do not seem so much of a total loss now as they did before I found out this use for them. Throw wood ashes with bits of charcoal for them to eat. Have dust in heaps or in boxes for them to wallow in. Have feed troughs close to and, in fact, fastened to the lower part of the flock fence. These will save many steps, for, except in the morning, when it is necessary to open the coops and let out the chicks, one need not go into the yards, but just drop the feed from the outside into the troughs. The poultry business does not seem very large, but I find that more is made, considering time and outlay, than from many occupations that appear much more important. Those living in the country are the best off these hard times, with scarcity of work, and if more attention was paid to poultry on every farm, country folks would be still better off. I hope that all who try my ways will have my good success with poultry.—American Agriculturist.

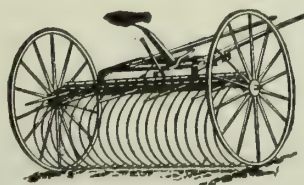
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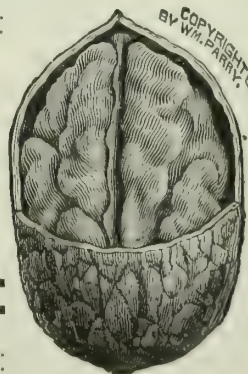
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THE HOME CIRCLE.

Minerva in Boston.

My Minerva flouts the Graces, and forgets how fair her face is,
But the higher criticism she entirely comprehends;
So she dresses very plainly, after some reform un-
gainly,
And looks on Briggs and Spencer as her intimates
and friends.
She's indifferent to ices and confectioners' de-
vices,
But on esoteric Buddhism she loves to ponder
well;
And though she never glances at the popular ro-
mances,
She indulges on occasion in a "study" or
"pastel."
She's superior to flirtation; she contributes to "The
Nation,"
And she'd be a rank agnostic if she didn't know
so much;
She declines in social duty to display her modest
beauty,
But she'd put a poem of Browning into genuine
low Dutch.
She is musically clever, and the "tune" taboos for-
ever,
For to "Vagner" she is faithful, and to Brahms
she gives her heart;
Then at art's high altar kneeling she will talk
of "technic" and "feeling,"
And if I say, "It's pretty," will reply, "But is it
art?"
Dare I ever to hold her in the arms that would en-
fold her?
Or, with Plato for my pattern, must I tell my love
in Greek?
Let me curb this crude young passion, and, since
courting's out of fashion,
Woo Minerva with a problem, and of Eros shyly
speak.
Most persistently I'm cramming, but I weary of
my shamming,
And am not intoxicated with Castalla's bitter
cup;
I might win the maid's affections through a course
in conic sections,
But I wonder, if once married, I could keep the
blamed thing up.
—Edward A. Church, in the March Century.

Her Reason.

" 'Tis strange that it always is easy
For a man, when he's flirting, you know,
To swear to a woman he loves her,
By all that's above and below.
But when he is truly in earnest,
Tell me the reason, I pray,
'Tis awfully hard to utter
The words that he fain would say?"
She replied, as her dimples deepened,
"The reason is simply, forthwith:
'Tis because it is awfully hard, sir,
For a man to utter the truth." —Life.

A Woman's Heart.

PEOPLE who had nothing better to do began to wonder why Miss Sewell did not marry, to shake their heads in silent displeasure as the rumor often reached them of some new suitor being dismissed, and finally, as times went on, to become convinced in their own minds that there was some mystery in the case, some unexplained cause why offers so constant and worthy should ever meet with the same cold disdain. But to the subject of all this gossip it mattered little. An only child, the mistress of her father's luxurious home, she smiled sweetly upon one and all, and then when came the inevitable end and she saw her adorers at her feet, she had but one answer for them, a quick, calm refusal. This was her outer life. Her inner life none knew, save that it left no traces on the beautiful face, and held no night vigils to dim the luster of her eye.

"Young Mr. Bonsart dines with us to-day, Mabel, my dear. Have an extra cover laid," said her father one September morn-
ing.

"Certainly, papa," was her reply, but as she left the room the blood mounted to her face in a crimson flush, such as was rarely seen there. Phil Bonsart had returned, then, to take possession of his goodly acres, the rich estate of which he was sole heir and which his foot had not trodden since a boy. He had been a traveler in foreign lands for years. Occasionally they had heard of him at some distant point, and now suddenly and unexpectedly he appeared in their midst, come to claim his own. In those early days he and Mabel had been inseparable. Then there had been a childish quarrel, and they had separated, now to meet again after all this lapse of years, she a woman of twenty-and-four, he a man of thirty. Would he find her changed, she wondered, as in the afternoon she wandered down to the drawing room to wait her guest's arrival. Busy with her thoughts, she scarcely raised her eyes until she had crossed the room, where

she might watch the carriage drive and so prepare herself for his coming; and then, for the first time, she saw her foresight was in vain. Mr. Bonsart stood before her. A faint start was all the outward sign she gave before she gracefully extended her hand and bade him welcome.

"I am afraid I startled you; but I was very unfashionably early, and so told the servant not to tell you of my presence. I have been wondering, Miss Sewell, during these few moments, if I should find you changed; but only as the bud develops into the flower do I see a difference. I knew there was great promise. I scarcely hoped to see such perfect fulfillment. Come, tell me something of my old home. I shall expect to hear all its gossip from you."

"There is none to give you. We are stagnating absolutely, and depend upon you to give us fresh enthusiasm."

"I am afraid I shall have to run away again if so onerous a task devolves upon me. However, I expect a houseful of friends next month, and we shall doubtless have our hands full during that time, at least. Your old friend, Mrs. Leonard, is to chaperon the party, with her daughters, two or three more young ladies and half a dozen men. I shall count upon you as my old ally in the art of entertaining them."

And so in pleasant chat and many recollections of that by-gone time, the dinner and evening passed rapidly away.

During the month that followed, those olden times seem to have come again. Every day, on some pretext, Phil found his way to Mr. Sewell's—now to ask Mabel to ride, to consult her in regard to some of the preparations for his guests and a grand ball he was to give in their honor, and finally to seek and obtain Mr. Sewell's consent to be his guest and help him greet his friends. The gossips began to revive hope in their breasts, and to think Miss Sewell had done wisely after all. Certainly she never looked more beautiful or seemed more perfectly content than when she took possession of the pretty suite of rooms Mr. Bonsart had assigned her. It was late in the afternoon. Many guests had already arrived, the house was full of cheerful bustle, merry voices echoed through the grand old halls, as Mabel left her rooms to join her friends below. Would she find Philip Bonsart waiting for her? Yes, he was there, at the foot of the stairway; but as she reached the bend she saw him turn away, go hastily forward with outstretched hands and a radiant smile to meet a newcomer, a young girl in whom even the eyes upon the stairs could find no flaw, whose beauty was undeniable. The little hand he held in his long after its first greeting or his warm, eager welcome.

"I was so impatient, I feared you were not coming to-day."

"Aunt always is delayed, you know; but I did not mean to be disappointed. Who are here, Philip?" a sweet, musical voice replied; then the stately figure on the stairs rustled down, recognized their presence with a cold, contracted bow, and swept past them into the drawing room.

She calls him "Philip!" Doubtless it is all arranged. How well matched they will be! How bright they will make the old house! And I—well—I have kept my secret too many years to let it escape me now."

But a look of pain crept into the beautiful eyes, a change in her manner, a coldness, a dignity which became Miss Sewell well, who was unlike the Mabel who had met and welcomed the traveler on his return. Later in the evening he brought her, leaning on his arm, to be presented. "Miss Laurence—Miss Sewell." Lillie Laurence looked surprised at the cold, icy way in which the other acknowledged the introduction, but something in the beautiful face attracted her, and she determined they should be friends.

The day of the ball drew nigh. There were to be tableaux, followed by dancing, and the performers were busy studying dress and attitude. Volumes of old engravings were dragged down from their shelves, studied and restudied; chests, unmolested for years, ransacked to the bottom and brocades and velvets dragged therefrom for the important event. Miss Sewell was constantly in demand, so that she ever had an excuse when her host would have detained her by his side, and he wondered what the strange barrier could mean between them.

Not so could she escape the little white-robed figure which crept, night after night, to her door, which would nestle before the fire at her feet and claim admission to her heart, whether she would have it so or not. A singular fascination drew her to this girl, who had robbed life of its sweetness, whom her coolness could not repel or anger.

"You must love me, Miss Sewell, whether you want to or not. In the first place, I

learned to love you long ago, through Philip. Besides, I have a little secret I want to tell you. I am engaged, and, oh, I am so happy!"

A hand of ice clutched the listener's heart at this confirmation strong; but she answered calmly:

"Perhaps it is not such a secret as you suppose."

"Indeed it is; unless Philip—and he promised— No, it could not be he."

"He has not betrayed it, I assure you. But come, if you want any roses left for to-morrow, you must bid me good-night."

Yet, when her guest had left her, she stirred not, moved not, until the dawn was beginning to break and the fire had died down and out. Then she crept, shivering, into bed, worn and wan.

At length the long-expected evening came. The guests were assembled, the tableaux fairly under way. In vain they had pleaded with Mabel to take some part. She would assist them in any way but that. And as, one by one, the beautiful living pictures drew forth enthusiastic applause, their perfect success was mostly owing to her taste and skill. In one of them, the last upon the list, Philip appeared alone with Lillie in that touching picture of "The Huguenots." Brave, resolute and unspeakably handsome he looked as he held her to him, while she tied round his arm the white signal which should protect him. The picture was perfect, and one pair of eyes watched it from behind the scenes with a jealous intensity which saw it all, and a look almost of hate crept over her beautiful face as she watched them.

Slowly the curtain was descending when her eyes caught what none others had seen, a spark of red, which any motion might fan into flames, and which showed with a lurid glare on Lillie Laurence's closely clinging dress. Fascinated, she watched it deepen and glow. As in a vision she saw the beautiful face distorted and ruined. Who would care for it then? Was she mad? Could she harbor for one moment such a thought? And a wild shriek escaped her lips, and was echoed by Lillie as the flames rushed out and she found herself enveloped in them. Yet before she had time actually to realize the danger, or the awe-struck people to make a move toward her rescue, she felt herself clasped to Miss Sewell's breast; another moment, and with her own dress, was she beating them down, with her own hands fighting their progress. It was a short struggle, but it cost the victor dear. Not a burn was on Lillie Laurence's fair, white skin, but Miss Sewell rose, white, almost fainting.

"You are hurt, Mabel!" an anxious voice said. "My darling, how brave, how noble you were."

Was it Philip who spoke thus? She would not yield to this weakness. She would cross the room, and gain the hall. She made two or three steps, feebly but resolutely, vaguely wondering what had made her flesh so heavy, or gave her this anguished pain in her hand, then she seemed to step suddenly down into blackish darkness.

"I am dying," she thought. "What will he think?" and it seemed to her she called aloud with her last breath. "Philip! Oh, Philip!"

In reality the words were but a whisper, but they found their way to the ears of him whom she called, who bent over her with a world of anxious love, whose strong arms raised and carried her where she might have air and rest and silence. The hands which had done their work so bravely were tenderly bandaged, and when she opened her eyes and came back to the world, she felt her hands and soul were cleansed of a thought which had been crime. Philip still was beside her, and at the memory of his words a burning flush, half pain, half joy, rose to her face.

"Mabel, are you better?" he whispered. "I have been so anxious, darling. I have longed so, Mabel, to tell you of my love, but you seemed so cold, so changed, I dared not hazard all. What have I done to offend

you? Forgive me for taking advantage of your weakness, but I dare not wait until you are strong to escape me."

Was she dreaming? If so, might she never awaken! Then she remembered Lillie.

"You are forgetting Miss Laurence's claims upon you, Mr. Bonsart."

"Claims upon me! I know of none, save that she is an old playfellow and engaged to my nearest and dearest friend, at present on service abroad. I thought you knew that, Mabel."

What a poor fool she had been! Now she remembered Lillie had not told her the name of her betrothed, but she had taken all for granted.

"Now that we have disposed of Miss Laurence, Mabel," he continued, "is there no other claim you can make?"

"None but my own, Philip." And then she told him of all that she had suffered.

"Ah, Mabel, did you not know there was but one Queen Rose in all the world's garden for me, and now that I have plucked it—how royally I will guard it—how proudly wear it, all the world shall see!"

So the curtain fell upon a tableau for which there was no audience, and in which Miss Sewell was forced to take a part after all.—Jenny Wren.

A Word to the Sleepless.

Dr. J. E. Huxley of Maidstone, England, thinks he has hit upon the natural remedy for sleeplessness. It is, in brief, to curl under the clothes like a kitten, or put the head under the wing like a hen. He says: "This insomnia seems to be now a universal affliction. We live wrongly, sit up late, and overwork the brain, and then go to bed in an excited condition. No one seems to have hit upon the natural remedy. I think I have. People take chloral and the like at their peril, and the fatal consequence not seldom ensues. It is all wrong, for you cannot control the dose required for the exact circumstances. But try nature's plan instead: lower the supply of oxygen to the blood, produce a little asphyxia, limit the quantity of air to the lungs, and heart and circulation becoming quicker, the brain loses its stimulant and sleep follows. When you find yourself in for a sleepless night, cover your head with the bedclothes and breathe and rebreathe only the expired air. Thus you may reduce the stimulating oxygen and fall asleep. There is no danger. When asleep you are sure to disturb the coverings and get as much fresh air as you require, or, when once drowsiness has been produced, it is easy to go on sleeping, though the air be fresh. What do the cat and dog when they prepare to sleep? They turn around generally three times, and lastly bury their noses in some hollow in their hair, and 'off' they go. They are in no danger, although it might look as if they were from the closeness with which they embed their noses."—From the Medical Press and Circular.

Woman's Conversation.

The first great fundamental principle in the now waning fine art of conversation is, paradoxical as it may appear, to be silent, to listen intelligently, to be sincerely interested, to be sympathetically responsive, to draw out the best points in your friend or companion. This requires in preparation a study of every topic of current interest, a well-fed, well-read mind, a good memory, an honest interest in every phase of life and thought, and a heroic unselfishness and mortification of spirit equal to that with which the old martyrs smiled and sung while the fagots blazed and the burning oil steamed.

The listener who waits with eager and ill-concealed haste for you to finish your story that she may tell the better one of which it reminds her, is not the kind of woman who creates a *salon* or acquires a following of choice spirits.

And the finishing course in this art of talking is to learn how to answer easily, brightly and to the point, to convey the idea

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that you understand, but still are not satisfied with what you have learned. So many people quench one's enthusiasm with the answer that says, "Oh, I know all about it now." There is a wide gulf between the good talker and the good conversationalist. The former is aggressive, demands recognition and monopolizes attention. The latter, with finer art, more subtle grace, is quiet, unselfish and tactful, and must of necessity have a wider range of subjects than the former. To talk well one needs to be acquainted with but few themes, since one can guide the conversation in these channels; but to listen well one must be ready to stand and deliver upon anything.

The suggesting of topics is the finishing touch of social education. It is something that cannot be taught. It is like the old physician's experience that makes his opinion more valuable than the student's. It requires wisdom, tact, quickness of thought and decision, and more of the unselfishness that is the root of all courtesy. If you know your guests for the dinner or reception, it is well to sit down and think what they are most interested in, and then inform yourself, not with an idea of talking, but of listening. There is nothing more exasperating to a specialist than to have some one attempt to tell him all about his own specialty, nothing more subtly flattering than to be made to advance his ideas by adroit questioning. For the unexpected encounter, tact, which is genius and experience, which is the mother who gives it life, will come to the rescue. The world is full of talkers, but the art of conversation languishes while the people chatter.—Ladies' Home Companion.

Gems of Thought.

He enjoys much who is thankful for a little. A grateful mind is a great mind.—Rest Islander.

Human things must be known to be loved; divine things must be loved to be known.—Pascal.

It is not enough to have great qualities; we should also have the management of them.—La Rochefoucauld.

People first abandon reason and then become obstinate, and the deeper they are in error the more angry they are.—Blair.

A good character, good habits and iron industry are impregnable to the assaults of all the ill luck that fools ever dreamed of.—Addison.

Every action, every word, every meal is a part of man's trial and discipline. Character is assuredly ripening or else blighting.—Robertson.

More bounteous run rivers when the ice that locked their flow melts into their waters. And when fine natures relent, their kindness is swelled by the thaw.—Bulwer Lytton.

Man's unhappiness, as I construe it, comes of his greatness; it is because there is an Infinite in him which, with all his cunning, he cannot quite bury under the Finite.—Thomas Carlyle.

If there is one virtue that should be cultivated more than another by him who would succeed in life, it is punctuality; if there is one error that should be avoided it is being behind time.—F. Hunt.

The fire of true enthusiasm is like the fire of Baku, which no water can ever quench, and which burns steadily on from night to day and year to year, because their well spring is eternal.—Ouida.

Despair makes a despicable figure and is descended from a mean original. It is the offspring of fear, laziness and impatience. It argues a defect of spirit and resolution, and often of honesty, too.—Jeremy Collier.

The young boys that went to Athens the first year were wise men; the second year, philosophers, lovers of wisdom; the third year were orators, and the fourth but plebeians, and understood nothing but their own ignorance.—Mendemus.

A man should always have this rule in readiness: To change thy opinion if there is any one at hand to set thee right and move thee from any opinion; but this change of opinion must proceed only from a certain persuasion as of what is just or of common advantage or the like, not because it appears pleasant or brings reputation.—Marcus Aurelius.

There are some people whose good manners will not suffer them to interrupt you; but what is almost as bad, will discover abundance of impatience, and lie upon the watch until you have done, because they have started something in their own thoughts which they long to be delivered of. Meantime, they are so far from regarding what passes that their imaginations are wholly turned upon what they have in reserve, for fear it should slip out of their memory; and

thus they confine their invention, which might otherwise range over a hundred things full as good, and that might be much more naturally introduced.—Dean Swift.

Fashion Notes.

A convenient dress for spring wear is of black serge, made with a plain, full skirt interlined with light canvas to make it stand out from the waist. For this skirt two waists can be made—a simple waist of serge for the morning and another of moire antique, made tight fitting, with a basque commencing at the hips, and some soft, creamy lace falling from the neck, making it a handsome dress for afternoon wear.

A simple little evening waist, which can very easily be made at home, is of silk in any becoming color, covered with accordion-plaited black net put on to the tightly fitting lining with a blouse-like effect. The square neck is finished with a band of fancy trimming, and the short, puffed sleeves of net have a double frill of lace. This will make an old black silk look like new.

Embroideries of all kinds will be much worn, one of the newest being a thick butter-colored creation, partaking somewhat of the nature of lace, which will be used alike on dresses of all kinds of material. A pretty way of arranging lace on a waist is to cross it in folds from right to left, drawing the ends through a rhinestone buckle and allowing them to fall below or fasten with the buckle. Wide black moire ribbon will be largely used for dress trimmings, also for the bows on hats and for the immense bows around the neck.

As far as the spring fashions can be anticipated, there seems to be a wide field to choose from. There is the plain, full skirt, which is too pretty to abandon; and for those who do not look well in anything untrimmed there are draperies of various degrees of lengths and fullness, suggestive of the arrival of panniers, which are made modernized, and will not sacrifice the wearer's appearance. Tailors have the most reliable models of spring gowns, as they are sure to have the latest cuts in coats, which are shorter than those worn during the winter, although the long ones will hardly be discarded by the tall women to whom they are so becoming. Dark gray suitings are used for these costumes, with the coats lined with black satin and worn over fancy vests.

Nearly all the silk petticoats are now lined with a very light quality of cashmere. This adds very little to their weight and makes them wear much longer. Turn-down collars and cuffs of linen lawn much stiffened are worn with simple, close-fitting gowns of some dark stuff. Veils continue to be worn well below the chin, and are not drawn tight over the face, but are instead draped so that they really become beautifiers instead of giving a harsh, square outline, as they do when a perfectly flat effect is achieved. The most becoming veil is the fine-mesh black one, with small chenille dots upon it. Veils having large flower designs on them are neither pretty nor becoming. A good black serge gives one almost unlimited wear, and spots are easily removed from it by the use of diluted ammonia and water, rubbed on with a piece of the goods. Trim it with black mohair braid and cover the cloth vest of some soft and pretty color with black soutache braiding.

The shirt waist of 1894 surely deserves its name, being an exact reproduction of a man's shirt, with the exception that it is shirred in at the waist and worn with a belt. Even the cuff has borrowed the true shirt finish, for it is set on the sleeve with a staying piece uppermost, opening on the top exactly like a shirt cuff; then there is also the shield-shaped bosom, the high, straight collar with points which turn slightly, all of which is very mannish. The only saving grace to this costume is the large, full sleeves, which at least give it a slight touch of femininity. The bosom fronts are made in white and delicate shades of blue, pink, gray and heliotrope and also hair-line stripes of white. Linen in pale buff and tan is often used, and black and white striped and dotted material, chambray, percale and chevrot. The "shield frill" waist is more truly feminine, with a turn-down collar all around, and with cuffs which lack the genuine "shirt" effect. These are most becoming to slender figures, and are much easier kept in good condition than the designs which demand polished stiffness. Then there is still another variety with fine tucks at each side and down the front, with a roll collar quite different from the others. Generally, the backs of these waists are the yoke and fullness gathered into the belt, which seems to be most satisfactory. Tucks and gauged backs are also worn, but the yoke is the most popular.

DOMESTIC ECONOMY.

FRENCH SAUCE.—One and one-half cups of powdered sugar, whites of two eggs, the juice of two lemons, and the grated rind of one. Beat the whites to a stiff froth and add the sugar gradually, then the lemon juice and grated rind.

PLAIN RICE PUDDING.—Beat three eggs light and stir them into a quart of milk, with a little salt and a wineglass of rice well washed. Add two tablespoonfuls of sugar, half a nutmeg well grated, and a tablespoonful of butter. Bake an hour in a quick oven.

RAMAKINS.—Mix a teaspoonful of flour with two ounces of melted butter, two ounces of grated cheese, two tablespoonfuls of cream and two well-beaten eggs. Stir all well together, and bake in small tins or tea-cups fifteen minutes. Serve very hot. A little cayenne pepper may be added, if liked.

CHEESE CANAPEES.—Cut some thin slices from a loaf of stale bread, stamp them out in any form you please with a tin cutter, and fry them lightly in fresh butter. Cover the top of each with cheese seasoned with pepper and a little mustard. Set them in a hot oven to melt the cheese, and serve as hot and as quickly as possible on a folded napkin.

SHEEP'S KIDNEYS A LA TARTARE.—Take five or six kidneys, cut each one through without dividing it, take off the skins and season highly with pepper and salt. Dip each kidney into melted butter and sprinkle with bread crumbs. Pass a small skewer through the white part to keep them flat, and broil them six or eight minutes over a clear fire. Serve them with the hollow part uppermost, and fill each hollow with sauce tartare.

CODFISH TONGUES.—Codfish tongues form a dainty dish for breakfast or served as an entree. Take a dozen fine, fresh codfish tongues, and wash them in cold water. Cover them with cold water, add the juice of half a lemon, a dozen pepper corns, half an onion and a tablespoonful of salt. Let the water come slowly to the boiling point, and simmer five or six minutes. Drain them from the water, dip them in the yolk of egg; roll them in fine breadcrumbs, and fry for two minutes in boiling fat. Or dip them, one by one, into milk, roll in flour, and fry in a tablespoonful of melted butter, cooking them but a few minutes.

Hints to Housekeepers.

A drop of oil and a feather will do away with the creaking in a door or creaking chair.

When milk is used in tumblers, wash them first in cold water; afterward rinse in hot water.

A little flour dredged over a cake before icing it will keep the icing from spreading and running off.

Never enter a sick room in a state of perspiration, as the moment you become cool your pores absorb.

When anything is spilled or boils over on the stove, the bad odor may be counteracted by sprinkling a little salt upon it.

Do not approach contagious disease with an empty stomach, nor sit between the sick and the fire, because the heat attracts the vapor. Preventives are preferable to pill or powder.

It is much better to keep tea and coffee in glass fruit jars, with tightly screwed tops, than in tin boxes. The flavor is easily spoiled by the vicinity of any articles of pronounced odor, such as cheese or bacon.

A handsome cover for a piano may be made by using a square of plain satin, with border 12 or 15 inches wide, of gold or silver wrought satin. A center of pale gray, or a plain yellow center, with gold-wrought border, is very effective.

Iron rust may be readily removed by drawing the affected spot over a board so that it will lie smooth, covering it with salt, and squeezing on lemon juice till a sort of paste is formed. Of course a subsequent thorough rinsing is necessary. Cream of tartar will also remove the stain if a small quantity be tied into the stained part and boiled in clear water.

In many cases of illness, toast water is recommended by physicians. Stale bread should be toasted until as brown as possible without burning. Break in small pieces, put into a pitcher and pour on about a pint more of boiling water than is sufficient to cover it. This may be taken either hot or cold, and may be flavored with orange or lemon peel, or some slices of pineapple may be cut into it. This is said to be very cooling and refreshing, and may be taken when other drinks are not allowed.

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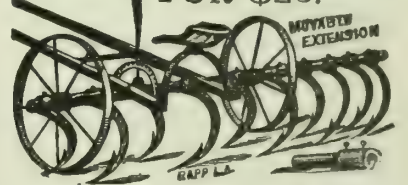
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PATRONS OF HUSBANDRY.

Random Thoughts.

By A. P. ROACHE, W. M. S. G. of California.

Play well your part in peace or strife,
'Tis action gives the charm to life.

The programme for the Grange Congress is now in the hands of the granges of the State. Changes and additions will doubtless be made, while names of individuals and selections undetermined at time of making will be inserted. Patrons desiring change of place or subject on programme can secure the substitution by addressing the master's office and stating the desired change, which will be made whenever feasible.

No one need hesitate to visit the Fair because it has been said by a few people who visited it before it was half completed that it was not worth going to see. Now in its full-orbed splendor, it challenges the admiration of all lovers of the artistic and beautiful. Even its gambling dens—those lairs of iniquity seemingly inseparable from all public enterprises—are above par in their appointments, and so cunningly and innocently arranged are some of their swindling devices that it would be well for all to have a care, or even our best citizens may be lured into a wild chase after chance, with the chances all in favor of the proprietor. A word to the wise, etc.

This season promises to be one of ceaseless activity in grange work; and, with a veteran army of State and county deputies, past masters, State officers and the National Lecturer, supported by a heavy reserve force of earnest, honest, thoughtful men and women unitedly seeking and faithfully striving for the advancement and betterment of life along all the avenues of existence and effort, it can only be a matter of a short time till no one will question that the grange is in its proper place—the recognized head of the organized farmers of California.

When the roses bow and blossom in the breeze of early spring,
And the swallow, bee and butterfly speed forth on joyous wing;
When the flowers from every quarter add their perfume and their charm,
Why 'tis heaven brought to mortal's doors who live upon a farm.

The grange is not striving for spoils, but for homes; not for dollars, but for hearts; not for muscle, but for manhood and womanhood; not for sin and crime and sorrow, but for morality, purity and happiness. These qualities ought to commend it to every thinking individual, and we believe it to be the solemn duty of every farmer to secure for himself and his family an abundance of fruit from this tree of perpetual existence and boundless knowledge.

Every plant, every flower and every tree has a place in nature which it fills to perfection. All animals except man do the same. Have you, dear reader, ever paused to inquire why that which should be the most perfect is the most imperfect, and that instinct yields so much better results than reason? It is because all other things take their places under the laws of fitness, while man ignoring these very laws, which would render him the acme of perfection, takes his by blind chance. Would it not be well to pay some attention to these things that we may save our children, if not ourselves, from a life of misapplied effort and its consequent unhappiness? Straws show which way the wind blows, and "Man, know thyself" is no idle thought.

The committee having under consideration the proposed transportation plan of Mr. D. Lubin will render their report thereon at the Grange Congress.

The Reception Committee to serve during the Grange Congress is requested to formally organize by electing a chairman and secretary in order that its work may be methodically conducted and a report made. The committee can meet either at Social Hall or the reception room in the Agricultural Building.

From the middle of April until the last of May the grange campaign will be pushed with vigor. Masters of subordinate granges will do well to brush up in the work a little and keep a lookout for the National Grange Lecturer, whose dates will soon be announced.

The Secretary's Column.

The executive committee met pursuant to call at the office of Bro. A. T. Dewey, 220 Market street, San Francisco, and was called to order by the worthy master at 10:30 A. M. Present, Worthy Master A. P. Roache, Executive Committeemen B. F. Walton, G. P. Loucks, Cyrus Jones, Secretary Don Mills. Visiting brothers present,

Past Masters S. T. Coulter and W. L. Overhiser, Past State Lecturer J. D. Huffman, ex-Secretaries Amos Adams and A. T. Dewey; also Bros. E. Greer and D. Lubin of Sacramento Grange.

Minutes of last meeting read and approved as read.

The first order of business taken up was the reading of the communication of the worthy lecturer of National Grange, stating the time he would probably start for and arrive in the State.

Communications from subordinate granges were read, naming members from their several granges to act on the reception committee at the grange congress. (List published in my last week's column.)

Bro. E. Greer, chairman of the special committee appointed at the last session of State Grange to examine into what is known as Mr. D. Lubin's "novel plan of transportation," submitted a written report, suggesting that the committee be again called to consider Mr. Lubin's plan, as it has been somewhat modified since the committee examined it, and in many respects made plainer.

On motion, the secretary was instructed to notify each member of the committee on Mr. Lubin's plan to meet at the Northern and Central California Building, office of E. Greer, Midwinter Fair grounds, San Francisco, Cal., on Thursday, April 12, 1894, at 1:30 P. M., for a final report.

Each member has been notified accordingly. Committee took recess until 1:30 P. M.

Afternoon session was promptly called to order by the worthy master, all members being present, and communications read regarding what the several subordinate granges would furnish for the congress, resulting in the programme published in last week's RURAL, subject to change by the executive committee.

Extra places have been left on the programme for granges which had not been heard from.

Two Rock Grange reports that an address and solo can be had from their grange (not yet reported on the programme).

Hon. E. W. Steele will prepare a paper on the "Dairy Interests," health permitting.

Hon. Joseph Le Conte of Berkeley cannot accept the invitation to prepare a paper on "Education in Relation to Agriculture," owing to other pressing engagements.

Worthy State Lecturer Goodenough will be prepared to deliver a 25-minutes address at the congress.

Look at the programme for the grange congress to be held on the 13th and 14th of April. Isn't it a good one? A copy will be forwarded to each grange in the State for perusal.

The next regular meeting of the executive committee of the State Grange will be held Tuesday, April 3, 1894, at 10:30 A. M., at which time a full programme, no doubt, will be made out for the worthy national lecturer while in the State.

Since my last writing the following granges have reported for the reception committee: Valley—Miss Annie Loucks and Bro. A. M. Phaler.

San Jose—Bro. and Sister Amos Adams, Bro. Frank Dunn and Sister M. J. Northen. Glen Ellen—Miss Lottie Howard and Bro. C. D. Clawson.

Merced—Bro. and Sister Bickford and Bro. and Sister Atwater.

South Sutter—Bro. and Sister Donaldson. Temescal—Bro. and Sister A. T. Dewey.

Two Rock—Bro. J. C. Purvine and Sister Rollin Andrews.

Woodbridge Grange reports holding good meetings. They will initiate a class on March 20th. On April third will discuss the question:

Resolved, That we condemn the issue by Secretary Carlisle of five per cent bonds for \$50,000,000.

This office acknowledges receipt of Annual Proceedings of 1893 from Massachusetts, Wisconsin, Nebraska, Iowa, Indiana and Connecticut State Granges.

Bro. A. T. Perkins will not be able to officiate on the programme at the grange congress, on account of other pressing business.

Temescal will assist in decorating Festival Hall with flowers, etc., for the grange congress.

A circular from the office of the worthy lecturer of the State Grange, containing topics for discussion for each month in the year, also a list of officers of the State Grange, county and State deputies and standing committees, etc., will be immediately sent out. File it away for reference at each meeting.

Petaluma and Stockton Granges have forwarded to the executive committee invitations for the worthy national lecturer to meet with their respective granges. No action will be taken upon them until the next

meeting, April 3d, when no doubt a full programme for the worthy lecturer will be formulated and published.

Washington and Oregon State Granges have been invited to be present and take part in the exercises of the grange congress.

By the request from subordinate granges for "The Grange Melodies," it looks very much as if the grange congress will be supplied with good, entertaining music. I have ordered a new supply of these song books, and hope to be able to supply all demands.

Address all communications for California State Grange to Don Mills, Santa Rosa, Cal.

The Proposed Tax on Incomes.

TO THE EDITOR:—The proper adjustment of taxation so that the burden of government may be equitably distributed among the people, is one of the most difficult problems that any government is called upon to solve, especially in a representative government and in a country of such vast proportions, of such varied climates and of such diverse interests as are found in the United States. Without attempting at this time to discuss the merits or demerits of the McKinley or the Wilson tariff bills, the imperfections of either or of both would be as nothing when compared to that hideous monster "free trade," which, if ever adopted, would be the opening of Pandora's box, whence would come all imaginable and unimaginable deformities and monstrosities, to afflict the farmers and other laboring classes of the country. It was not an uncommon thing 55 or 60 years ago, when the Democratic party was led by that brilliant, fiery, but erratic South Carolinian, John C. Calhoun, to see in Democratic processions banners with the words "Free Trade, Sailors' Rights and Direct Taxation" emblazoned thereon. Yet, while the Democratic party was in full possession of the government for many years thereafter, they were never disposed to put those principles into practice, and to-day there are more protectionists than free traders in the Democratic party. An evidence of it is found in their efforts to pass an income tax to protect the great masses, and to require those who have the greatest amount of governmental protection to pay their pro rata of taxes.

The chief objections made against the passage of an income tax are, that it is "Inquisitorial," "A premium on dishonesty," "It will make us a nation of liars and perjurers," etc., etc. The force of these charges depends largely upon the standpoint of the individual who makes them. If he is deriving an income from "ways that are dark and tricks that are vain," he would undoubtedly resort to some of the subterfuges referred to above. But we protest against his measuring other people's grain in his half bushel. An income tax is not a new thing in this country. One was enacted in 1861 and continued in existence till 1877, and it was not known to corrupt the morals of the people. Some few may have falsified when giving in their income and attributed it to the law, but such was not the fact; it was simply an opportunity to bring out some of the qualities that had been lying dormant in the individual. After 16 years' trial the law had become so satisfactory that its repeal was effected only by a small majority; and Senator John Sherman, in a speech before the Senate, declared it to be one of the most just and equitable taxes then in force. England has had an unbroken income tax for more than a century and derives more than \$80,000,000 annually from it, yet nobody thinks of charging England as being a nation of "perjurers and liars." It has

worked so well in that country that not a man in all England wishes to have it repealed. But, says another, it is "Inquisitorial." Can it be, or is it possible to be, as inquisitorial as the questions asked under the present property-tax law, which are: "How much money have you on hand or in bank?" "What is the amount of solvent debts due you?" "What is the amount of your indebtedness not secured by mortgage?" "Do you hold any property in trust for others?" "Has your wife got a watch—is it gold or silver?" etc. Compare these questions with those asked of a straight man under the income law: "What is the amount of your income?" "From what source did you derive your income?" There is nothing inquisitorial in these questions, as there is not a man in the United States pursuing a lawful calling whose neighbors as well as the newspapers do not know the source of his income, and in answering the questions he simply repeats what every intelligent person knows.

A leading San Francisco newspaper recently published some very interesting statistics of the wealth, the annual and daily income of 57 millionaires in the city of New York whose aggregate yearly income is over \$89,000,000. From these statistics we have formulated the following table:

NAMES.	Yearly Income.	Daily Income.	Hourly Income.	Income for each minute.	Income for each second.	Income for each pulse-beat of the heart.
Wm. W. Astor.	\$8,900,000	\$24,357	\$1,015	\$16.90	28c	21c.
J. D. Rockefeller.	7,611,250	20,853	827	13.26	23c.	17c.
Jay Gould (estate of).	4,040,000	11,068	461	7.66	13c.	9½c.
C. Vanderbilt.	4,048,000	11,090	462	7.67	13c.	9½c.
W. K. Vanderbilt.	3,795,000	10,397	468	7.60	12c.	8c.

This table could be continued almost indefinitely, as men with colossal fortunes are very numerous in the United States. John D. Rockefeller made his money in oil speculation and combination. W. W. Astor (\$120,000,000) inherited his fortune through intermediate generations—an easy way, you will say, of becoming rich. He has recently shaken the dust of republican government from his garments, and is now living in England, which is "more nobby, you know." Jay Gould estate (\$100,000,000) was made by speculation in Wall street in telegraph and railroad combinations.

All of the 57 individuals named in the article referred to are engaged in speculations in business, or own property the nature of which requires and receives more governmental protection than does the business of ten thousand men engaged in other avocations of life, and should in justice bear their full share of the protection they receive, and there is no better way to measure that protection than by the amount of their incomes. The idea that to inquire into the amount of a man's income for the purpose of taxation for the support of the Government is offensively inquisitorial is simply absurd; yet a large number who desire to enjoy the benefits of good government without contributing their full quota are ready when an income tax is mentioned to bellow forth "Inquisitorial," and if asked why, "Blanch, Tray and Sweet Heart" parrot-like cry out "Inquisitorial," which is undoubtedly the best argument they have against a tax on incomes. Let the bill become a law to the end that equal and exact justice may be done to the rich and poor alike.

AMOS ADAMS.
San Jose, March 20, 1894.

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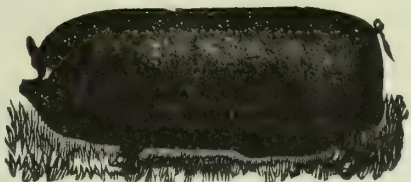
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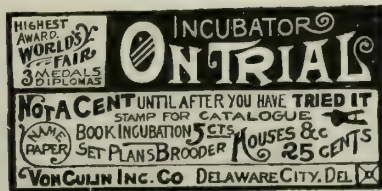
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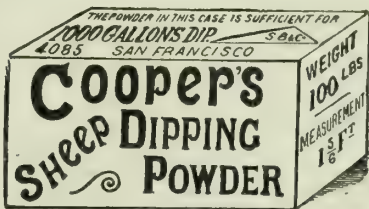
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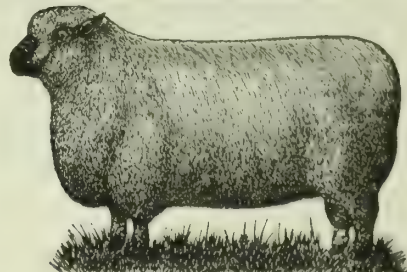
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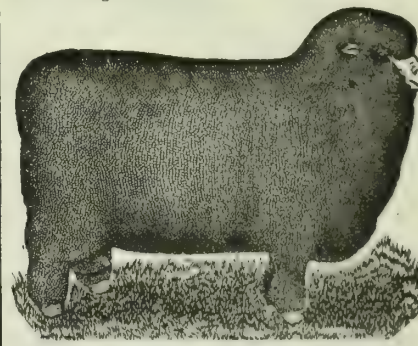
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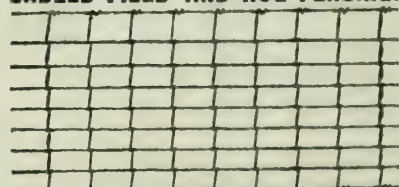
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AGRICULTURAL NOTES.

CALIFORNIA.

Butte.

J. Curtis makes the following suggestion to the producers of Palermo through the *Progress*: I think it would be well to call the attention of our fruit-growers here to the most important fact we have to deal with, i. e., this is the first year of our fruit shipments. What we ship this year and next will, in a large measure, establish the reputation of our fruit. Let it be well graded, and no culls or poor fruit or damaged fruit shipped, only as such. We can't afford to risk our reputation at this, our beginning, on anything but the best. It is cheaper to destroy such fruit than ship it. The South has learned this lesson at too great a cost. Let us not learn that way.

Oroville Register: W. A. Rogers of Thermalito will this spring set out five acres of Navadillo Blanco olive trees, and Alex Bartley will plant five acres of fruit, a part of which will be the same varieties of olives as Mr. Rogers will plant. We are greatly pleased with the continued increase of olive planting in this vicinity, for the olive is destined some day to lead all other trees in this part of the county. The trees are long-lived, free from most insect pests, and the oil and pickled olives will become a food product rather than a luxury.

Oroville Register: We have preached hops to our readers to some advantage when we see hopyards begin to be planted in this county. On Wyman's Ravine, a few miles east of Oroville, James Wheeler and sons own a fine tract of land well adapted to fruit and hops. They have 1200 peach trees, 300 olive trees and 100 orange trees, besides a variety of other fruit. They are now preparing the land and getting ready for putting out 2000 additional peach trees this winter. They have recently set out 5000 strawberry plants and have the ground ready for 5000 hop roots. This ground for the hops is low and fertile and can be thoroughly irrigated during the hot season. They have raised a few hops for the past four years, and, finding they did exceptionally well, they have determined to plant eight acres to this season.

Register: Charles Henry, who lives west of Biggs, was in Oroville a few days ago, and while here explained to some friends an invention that has been tested in the vicinity of his home, and which promises to be a great aid to farmers in the low, flat, wet lands that are difficult to work successfully. The invention consists of one or more plows and an elevator, all being run by four or six horses. A strip of low adobe land is taken and the machine put to work on it. The plows cut a furrow and the elevator lifts up and carries the newly plowed land as far from the furrow as desired, when it is deposited. The result is, when the field is finished, that a series of ditches have been cut, and a corresponding series of broad lands raised. A second plowing can be done if desired. The low, broad ditches serve as drains, and the land raised becomes exceedingly productive. Mr. Henry said upon these raised lands he could grow fruit of nearly all kinds in perfection, while vegetables were rank and very tender.

Inyo.

L. A. Northrup, of the Inyo creamery, publishes in the *Register* the following directions for the care of milk cans: We would respectfully call your attention to the importance of properly caring for your milk and milk cans preparatory to bringing your milk to the creamery. Experience, as well as the best authorities on such matters, has taught us that it is impossible to make a good quality of butter or cheese when the milk has not been properly handled before it reaches the creamery; and one of the unpleasant duties of a creamery man is to be compelled to return a batch of milk to the owner for the reason that it is sour or tainted. From the best authorities we submit the following formula for cleaning cans and caring for milk: First wash the can with warm water, then with warm water and pearline or sal soda, rinse with boiling water and dry with clean dry cloth. Leave the lid off so as to let the can air thoroughly. Rinse with clean water just before using. Strain the night's milk into the can, setting the can in a vessel of cold water. Stir with a tin dipper kept as clean as the can, lifting the milk with the dipper and pouring back into the can, so that the animal heat and bad odors may escape as rapidly as possible. This should not be done at the corral; remove the milk from the corral as soon as possible, as milk will readily absorb bad odors from any source. Stir frequently until the milk is cold; do not cover the can tight. Do not strain the morning's milk in with the night's milk if it can be avoided; if not, cool the morning's milk before adding it.

Kings.

Bee farmers, representing the ownership of 2500 stands, met last week and organized an association with the following officers: J. H. Hart, president; R. E. Zimmerman and Jos. Flory, vice-presidents; J. T. Flory, secretary; H. M. Orr, treasurer. Among the resolutions adopted by the meeting were the following: *Resolved*, That the association endorse the actions of the California State Beekeepers' Association at its meeting held in Los Angeles in January, 1894, especially the action of that body in regard to establishing a uniform tare on honey cases, and the packing of honey in such a manner that it may reach the consumer in the original package; and be it further *Resolved*, That we recommend each member of this association to become a member of the National Beekeepers' Union; and be it further *Resolved*, That we take steps to have a foul brood inspector appointed for each county represented in this association, said inspector to have full power to act in all foul brood cases, according to the laws enacted by the Legislature of this State; and be it further *Resolved*, That this association recommends to each member that he place a label or stamp on each case he sends out, with his name and address, also guaranteeing the purity of the honey in each package. The name of the new organization is "Central California Beekeepers' Association." Meetings are to be held the first Monday of each quarter.

The Hanford *Sentinel* has the following in explanation why the Lucerne Vineyard Company has not gone into the Raisin Exchange: The matter of the Lucerne Vineyard Company not going into the

Kings County Raisin Exchange should not be a discouragement to the formation of the Exchange. Everybody knows that the Lucerne vineyard is second to none in quality of its product and that its motto is, the best grade and best prices. For this reason it promotes every interest of the business, and an Exchange need fear no damaging competition from it. It is, in fact, an Exchange by itself, encouraging good packing and good prices for the raisin product. What hurts the raisin business are those small growers who have not the power, unorganized, to properly handle their products for the best results and their goods go on the market as a sacrifice, brought on by force of circumstances.

Los Angeles.

The Pomona *Progress* prints a letter from Denver showing that the Earl Fruit Company is selling oranges in that market at losing prices, presumably for the purpose of breaking up the co-operative exchanges. The *Progress* adds: "It has never been supposed that the fruit-buyers were in the business for their health, and when they voluntarily and knowingly throw away money they have an object in view in doing so. Mr. Earl said last fall that he was not opposed in any way to the fruit exchanges, but, on the contrary, wished them success. The orange-growers of this locality have tried hard to see how the policy of the Earl company, in thus spending money to underbid the exchanges in the fruit markets and ruin the prices of oranges again this season, is going to contribute to the success of the exchanges, but they cannot see it. On the other hand, they see in the success of the Earl company's apparent policy the slaughter of the orange crop this season, the possible disorganization of the fruit exchanges, and the orange-growers placed again at the mercy of the commission men with prospects for future experiences similar to those of last year. In conjunction with this state of affairs comes the report that the Earl Fruit Company has contracted with the Tustin Fruit Exchange to purchase all its oranges—about 200 carloads—at the exchange prices, as they shall be fixed from week to week. This agreement will supply the Earl company with enough fruit to carry on a pretty active business for a time. The object of the Tustin Fruit Exchange in voluntarily agreeing to supply with fruit the Earl company, now considered the opponent of the exchanges, is hard to understand. If it was not shipping as much fruit as the other exchanges—as it claims—why did not its managers bestir themselves and force their oranges upon the attention of the trade, as the managers of the other exchanges are doing, and thus secure orders for the fruit? Instead of doing this it seems to have abandoned its fortifications and allowed its guns to be turned upon its sister exchanges. But it is not yet known here just what the arrangement between the Earl Fruit Company and the Tustin Exchange is, or what effect it is likely to have upon the other exchanges and the orange business in general."

Orange.

Anaheim *Gazette*: Some beets raised by Mr. French on his ranch down at Garden Grove, and which were permitted to remain in the ground through fall and well along into the rainy season, show the wonderful sugar-producing qualities as well as the retentive character of the soil, as probably nothing else at this time can. The beets were planted April 16th, dug the 1st of November, and were analyzed the 28th of February, when they polarized 20.50 per cent of saccharine. The purity, we believe, was a little low, but the test amply demonstrates, if any further evidence were wanting, that we have here the greatest sugar-producing section on earth. Beets that will polarize twenty per cent in February are a rarity, sure enough.

Santa Ana *Blade*: It was announced recently that the Tustin Fruit Association had sold their entire crop of oranges to the Earl Fruit Company at a good price. The exact figures are not stated, but they are understood to be satisfactory, and better than the prices so far received through the exchange. No doubt the association will continue a member of the county exchange, and will maintain its organization, the value of which is evident from the fact that Earl has been forced to pay a much higher price for the fruit than he otherwise would. Probably Earl thinks he can break up the organization of the orange-growers by taking the Tustin crop and that of the big Gilman orchard, purchased the other day at Placentia, but this does not follow at all. The organization of orange-growers will live if it is properly managed, and the only danger comes from within. It is true that there has been some dissatisfaction, due to the fact that Riverside appeared to be getting nearly all the orders through the association, but this is probably capable of a satisfactory explanation. The Tustin crop purchased by Earl amounts to about 225 carloads. Earl is in negotiation with the other fruit associations throughout the county, and the Placentia association expects to receive a bid from him shortly. Theo. Staley, the well-known nurseryman of that place, who was in Santa Ana, said the association also expected a bid from the Stanley company of Chicago, and that the best bidder would probably get the crop.

San Diego.

There is talk of putting up a tomato cannery at Escondido. To keep such an institution running, it will require from 150 to 200 acres of tomatoes, for which will be paid \$6.50 per ton, and at a reasonable estimate tomatoes will yield 22 tons per acre, making a revenue of between \$125 to \$150 per acre for the producer.

Santa Barbara.

Santa Maria *Times*: If all reports are true, the recently introduced "spurry" (*Spergula arvensis*) from France is just what we have long been looking for, for a forage plant on our sandy soils. It will germinate in very dry weather and will grow on land so thin and sandy as to be utterly worthless for grain or ordinary grass crops. It is an annual and is highly prized in France for food for cattle, hogs and sheep, and especially for cows giving milk. It grows very rapidly and may be fed both green and dry. Six to eight quarts of seed per acre is the quantity sown. It germinates so quickly that the field looks green within three days after sowing. This matter is worthy of careful investigation by our owners of sandy land.

Nipomo letter in Santa Maria *Times*: Seven inches the amount of rainfall to date. The croaker is abroad in the land and is already predicting a

failure of crops. This is all wrong. Have faith in God who has promised seedtime and harvest. Crops never have looked better at this time in the season. Why be discouraged? Frosts have ceased and the fruit prospects are better than ever before.

Santa Clara.

San Jose *Tree and Vine*: A. Block, the great pear grower of Santa Clara, uses hundreds of loads of stable manure, and, in fact, almost everything which has manurial value. Straw, weeds, brush and almost all carbonaceous materials have been burned up in California for a series of years. We believe it time to call a halt on such practice and take measures to get more carbon into the soil. Stable manure does not contain all the elements of fertility. Phosphates should be used, and in many cases nitrates. Potash and lime are not usually deficient in California soils, but a little experiment will show whether or not it will pay to use them in certain cases. It has been thought that vegetable matter as a manure was not favorable to the conditions of soil which caused land to endure drought; but if well plowed in and decomposed, the action is really favorable in this direction.

Santa Clara.

At the last meeting of the San Jose Board of Trade the following preamble and resolution were adopted: WHEREAS, The ad valorem tariff on dried fruits as proposed by the Wilson bill is ruinous to the fruit industry of California, in which there is more than \$50,000,000 invested, thereby giving employment to many thousands of our citizens, so invested upon the assurance of the Government that the industry would be protected against foreign products and pauper labor; therefore, be it *Resolved*, That it is the sense of the fruit-growers of Santa Clara valley that the present duty on dried fruits should be retained. C. T. Settle, Col. Hersey and H. V. Morehouse were appointed a committee on statistics.

Shasta.

Anderson Valley *News*: J. E. Hamilton and four other men dug the holes and planted 999 fruit trees last Monday.

Solano.

Woodland *Democrat*: A Solano county farmer tells me that both the grain and the fruit crops on the south side of Putah creek look well. There is likewise a large crop of candidates, but some of them budded too early and were nipped by the frost.

Sonoma.

Santa Rosa *Democrat*: Col. W. P. Edwards mourns the loss of his entire year's crop of olives on his Penn's Grove ranch. The trees were abundantly laden with fine, large olives, which were ripened and ready to pick; and when he went East he left orders that they be allowed to remain on the trees until his return. However, before he arrived, unknown parties entered the premises during the night and stripped the trees completely, and Mr. Edwards loses quite a little sum of money through the theft.

Petaluma *Courier*: T. B. Purvine of Two Rock was in town yesterday. He is a well-known dairyman who has of late years added the hen industry to his business with eminently satisfactory results. He has 1200 Brown Leghorns and expects to hatch 6000 chicks this year. Mr. Purvine says that there is far more money in hens than in cows, and he proposes to enlarge his business in this line as fast as practicable henceforth.

Tulare.

For the past two weeks Mr. E. F. Adams, manager of the State Fruit Exchange, has been at work in Tulare county holding meetings in all the local centers of the fruit industry. It has been suggested that the county be divided into six fruit districts, namely, Visalia, Tulare, Porterville, Farmersville, Traver and Oroquieta, and that each of these districts organize a local exchange to co-operate as one county exchange.

Tulare *Register*: There is a difference between good wheat and poor wheat, even for seed. L. Weaver brought into town some seed wheat the other day that averaged 263 pounds to the sack. There is a good deal of difference between that sort of wheat and wheat that goes 135 to 140 pounds to the bag, but it costs the same to produce it.

Ventura.

Venturian: While it is difficult, in view of long-prevailing conditions, to disguise the fact of the seriousness of the situation should the customary rainfall fail us altogether, yet right at this time there is nothing to alarm the producers of Ventura county concerning present prospects for a fruitful harvest of horticultural and agricultural products. We have conversed with some of our leading bean-growers and orchardists, and the prevailing expression seems to be that the soil was never in better condition than at the present time. It is true that the unusual low temperature has retarded the progress of fruit, and yet there is nothing discouraging in the appearance of the fruit trees. While the process of budding and blooming is slow, there is promise of a magnificent crop—if and upon that little "if" hangs our prospects for success or failure in realizing our hopes of an abundant harvest, now so full of promise. If it rains within the next 20 days all will be well; if the rainfall fails us, crops, while they will not be a total failure, will be very light. The stock interests have already suffered much from the shortage of feed, but there is yet time to save this industry from more serious results.

Yolo.

Knight's Landing letter in Woodland *Democrat*: The tule farmers are studying the stage of the river very closely. Every fall of an inch decreases the danger of the farther spread of sipage water. It is predicted that the crop of vegetables along the river will be several days later than they were last year. We hope these predictions will prove to be false alarms, as the early crop gets the cream of the market.

Winters letter in Woodland *Democrat*: A frightful discovery was made on Henry Seaman's stock range, six miles west of this place, Monday, by his vaquero, Cole Smith. While Smith was looking for some horses on the extreme west side of the range near the old Spanish watering place, just below

Finger Rock, he discovered the three-year-old colt of Charley Barnhart, of Dixon, all torn to pieces. Upon close examination the ground and brush, and the scratches upon the colt's head and legs, showed that a death struggle had taken place between the colt and a lion. This is a rare thing for this section of the country, but a large lion has been frequently seen in that locality.

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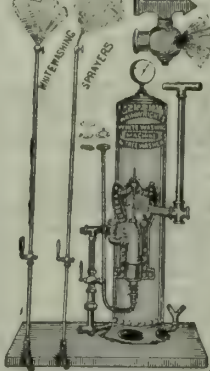
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\$11,000—HALF INTEREST IN 2000 ACRES FOR Stock and Fruit Ranch, with full management. Title perfect. Address P. O. Box 21, Hayward, Cal.

Epilepsy and Errors of Refraction.

Mr. Work Dodd has discovered a strange relation between errors of refraction and epilepsy. The former, given a certain condition of instability of the nervous system, may excite the latter. In other words, the relation that errors of refraction and epilepsy hold toward each other is that of cause and effect. This is a most useful argument to be used in most cases where people are either too thoughtless or too indolent to have their visual refraction corrected when necessary. Mr. Dodd points out, in addition to the foregoing, that the correction of the errors of refraction will, in combination with other treatment, in many cases cure or relieve the epileptic condition, and that, although in some cases, when the refraction error has been corrected, the epilepsy will continue, it will only be in a modified form, in consequence of other irritation, even though the error of refraction may have been the exciting cause of the fits in the first instance. Mr. Dodd is strongly of opinion that in every case of epilepsy the eyes should be carefully examined, with a view of correcting any error of refraction that may exist by the use of proper spectacles.

THE proposed compromise between the Bear Valley receivers and landowners in Alessandro irrigation district has not yet been consummated, and the injunction is still in force restraining the collector of the district from selling the land for delinquent taxes levied to pay interest on \$765,000 bonds of the district which were transferred to the Bear Valley Company. The hitch seems to be caused by the desire on the part of Moreno and Alessandro property owners to have some positive assurance that the Bear Valley Company will fully carry out its contract to place water on their lands. Lyman Evans, one of the attorneys for the parties who secured the injunction, states that he does not believe the people of the district would agree to pay the interest unless they had positive assurance that this money, together with the \$25,000 due as taxes on Bear Valley land in the district would be at once applied to completing the water system. Two representatives of the English stockholders were at Riverside on recently, and went to Alessandro to try to effect the desired compromise.

THE good man quietly discharges his duty and shuns ostentation; the vain man considers every deed lost that is not publicly displayed. The one is intent upon realities, the other upon semblance; the one aims to be good; the other to appear so.—Robert Hall.

Go For the Gopher!

In a recent issue of the PRESS some attention was called to the destructive work that is yearly accomplished by squirrels, gophers, crows and similar pests. As a matter of course, many farmers are familiar with the facts therein set forth, nearly all having met with more or less loss and annoyance through their depredations. But as the season is timely for a crusade against these robbers, it is thought well to offer some further remarks as to the best means by which the crusade may be carried on to the successful and complete destruction of the common enemy. It is a well-known fact that these little animals are extremely sensitive and equally wily in the manner of selecting their food. Consequently, the difficulty of inducing them to take a poison of any kind is not lightly overcome.

Traps of various ingenious designs have for years been tried with but little success, as have also different plans for fumigating, smoking, inundating, shooting, digging, etc. Of course, poisoning has met with more or less success; but, as a rule, it has not been presented to the fastidious little epicures in a sufficiently attractive form, or its quality has been poor, and it has failed to stand the test of exposure to weather and earth absorption that it must necessarily be subjected to when scattered in their runways. As a result, most attempts in this direction have proved expensive and have been abandoned. As has before been stated, it was to obviate these difficulties that the researches and experiments of Wakelee & Co., the well-known chemists of this city, were begun some fifteen years ago. The principal points to be attained were: 1st. A poison that, when taken, would prove sure death. 2d. A poison that gophers, crows, squirrels and their kind would find so much to their taste that, instead of rejecting it, they would seek it and greedily devour it when found. 3d. Put up in a form that would be easy to ship, as well as convenient and safe to handle. 4th. At a cost that would make the article very much cheaper than anything of the kind ever before attempted, and, lastly, of a quality so enduring that neither time nor exposure would be able to deteriorate it.

That Wakelee & Co.'s celebrated Exterminator has filled all of these requirements for years past, almost innumerable testimonials from the most trustworthy sources bear ample evidence. As is commonly the case when an article placed upon the market proves a success, Wakelee & Co.'s Exterminator has been extensively counterfeited, therefore it behooves the farmer who is anxious to build the largest and dearest pile of squirrels, gophers, crows, etc., at the least expense, to be cautious and buy only the genuine Wakelee & Co.'s Exterminator. Directions for using accompany each can.

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Ferrara, Black Morocco, Muscatel,
Gordo Blanco, Purple Damascus,
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LEMON TREES FOR SALE.

I have some 15,000 Lisbon and Eureka Lemon trees,
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News in Brief.

—Advices brought to Victoria say there has been an unusual snowfall up north and that the signs indicate a good salmon run.

—Stockton capitalists are seeking to organize a company to purchase and operate the combined harvester works which were recently sold under a mortgage.

—In the Lakeview land district, Oregon, there are 2,221,000 acres of unsurveyed lands, not including Indian reservations—and 285,000 acres are in Lake county.

—From reports presented at the session of the Idaho wool-growers, at Boise, which has just closed, the value of the flocks of that State shows a decrease during the year of \$1,500,000.

—The Western Telegraph Company bill having passed the British Columbia Legislature, the new company announces that it will commence laying a cable between the island and the main land of British Columbia at once, and will then connect with the main lines in the States.

—An attempt was made at Butte, Mont., to reduce the pay of coalheavers on the Great Northern railroad. The men refused to go to work unless assured that full pay would be given. The strike lasted a few hours, until word was received from the railroad officials to put the rate back. The men smiled and returned to their duties.

—The Southern Pacific Company put into operation last week its new gas works at Oakland Point. These gas works are on the system that has been adopted on many railroads in the United States. They have a capacity of 12,500 feet a day, and have been so constructed that by comparatively small extension the capacity can be doubled. The entire plant is new. The object of these works is to supply all the passenger, sleeping and dining cars with gas for lighting purposes.

—Seven miles of the Bailey, Or., irrigation ditch have been already completed, and 600 feet of the flume built. The latter will be 2100 feet in length, and the ditch 22 miles. As soon as the flume is done it is intended to turn in the water, causing it to follow as fast as work on the canal progresses. A dam was constructed above the point where the water is diverted from the Umatilla river, and the flume put down to the bottom of the channel. The prospect is sure for an abundant flow of water along the canals of the company. In three weeks the water will be turned in.

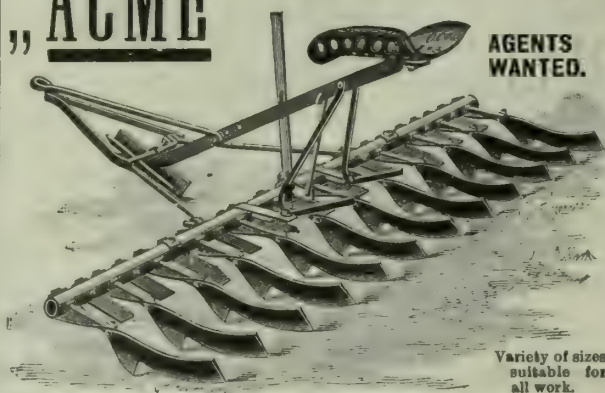
—H. E. Huntington of the Southern Pacific Railroad Company reports the company's track completed through the main or Summit tunnel, near San Luis Obispo. The seven costly tunnels are completed and the work of track-laying is going on as rapidly as possible. The grading for the road is nearly finished to the town limits. One of the most important things yet to be done is to build a steel bridge across a stream near San Luis Obispo. The material for the bridge is now on the way from the East and will be delivered on the ground within a few days. If no delay is incurred in the construction of this bridge the cars will be running into the town of San Luis Obispo by the 1st of May. The Southern Pacific Company reports that the outlay for this work within the past three months, and that which will be required to push it to completion, will aggregate \$2,000,000.

—The annual statistical review of the Pacific Coast Lumberman shows that the Washington mills cut during 1893, 764,232,912 feet of lumber, valued at \$10,690,280, against 1,164,425,880 feet in 1892; 1,829,528,500 shingles, valued at \$2,636,011, against 1,883,868,750 the previous season. Oregon cut 449,036,250 feet of lumber and 86,486,000 shingles. British Columbia, 76,954,000 feet of lumber and 94,975,000 shingles. Montana, 65,003,953 feet of lumber and 10,500,000 shingles. Northern Idaho, 22,120,000 feet of lumber and 13,950,000 shingles. Thus the grand total of lumber and shingle production in the Pacific Northwest for 1893 reaches 4,398,407,115 feet of lumber, valued at \$17,837,221, against 7,937,908,080 feet for 1892. Of shingles the cut was 2,635,430,500, valued at \$2,927,617, against 2,182,481,750 the previous year.

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—The Great Northern has cut wages and caused a strike at Seattle. Car-cleaners were cut from \$50 a month to \$31, car-repairers from \$55 to \$35, and their foreman from \$75 to \$45.

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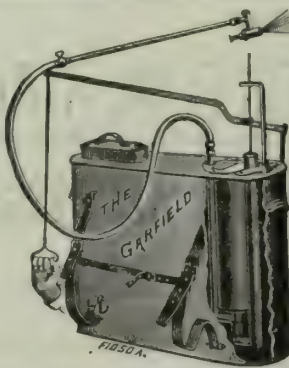


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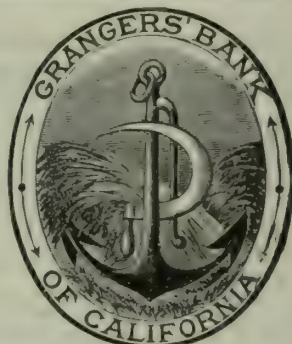
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INCORPORATED.....APRIL, 1874.



Capital paid up.....\$1,000,000
Reserve Fund and Undivided Profits, 120,000
Dividends paid to Stockholders.... 882,000

OFFICERS.

A. D. LOGAN.....President
I. C. STEELE.....Vice-President
ALBERT MONTPELLIER.....Cashier and Manager
FRANK McMULLEN.....Secretary

General Banking. Deposits received, Gold and Silver.
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Loans on wheat and country produce a specialty.

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Renders it imperative that a Farmer's acres give him back the largest possible returns for the labor he bestows upon them. This means labor-saving tools, especially such as perform a variety of operations that when done by hand are slow, tedious, and consequently costly ones.

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is a "Competition-meeter," and is but one of an interesting family of labor-saving, and therefore money-earning, tools. Our latest Catalogue will tell you all about the whole family, and will give any Farmer valuable information in the line of improved methods for cheapening his cost of production.

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S. L. ALLEN & CO., 1107 Market St., Philadelphia.

S. H. MARKET REPORT

Market Review.

SAN FRANCISCO, March 21, 1894.

Wheat.

The San Francisco wheat market has been in a very unsettled, not to say feverish, state during the past week. Ordinary export purchases have not been very active, but there has been a big deal in May wheat in the Call Board. The Liverpool quotations, taking into account freights and other charges, do not warrant a price here of more than 95c per cental at the outside; but a combination, apparently with unlimited money, believes that prices will go up a little later on, and so has been making heavy purchases for May delivery at prices ranging from present quotations up to \$1.15. This, of course, has some effect upon the export market, but dealers, as a rule, decline to give more than current prices at Liverpool call for.

The statistical situation in the United States supports the theory of better prices later on; but in this year when the whole world of money and business seems out of joint, it is impossible to judge the future with any sort of certainty.

Barley.

There is a better feeling in this article and holders look upon the situation as becoming more encouraging. Choice feed qualities are somewhat scarce and this fact helps to steady prices. We quote: Feed, 71½¢@73½¢ cwt for fair to good quality and 75¢@76½¢ cwt for choice bright; brewing, 80¢@87½¢ cwt.

Dried Fruits.

There is a healthy tone to the situation. Trade is of moderate character, mainly on account of light stocks. We quote: Apples, 5½¢@6¢ lb for quartered, 5½¢@6¢ for sliced, and 8¢@9¢ for evaporated; Pears, 4¢@8¢ lb for bleached halves, and 3¢@5¢ for quarters; bleached Peaches, 7¢@9¢; sun-dried Peaches, 5¢@6¢; Apricots, Moorpark, 11½¢@12½¢; do Royals, 10¢@12¢ for bleached and 6¢@7¢ for sun-dried; Prunes, 4½¢ lb for the four sizes, 4½¢@4¼¢ for the five sizes, and 2½¢@4¢ for ungraded; Plums, 4¢@4¼¢ for pitted and 1½¢ to 2¢ for unpitted; Figs, 3¢ to 4¢ for pressed and 1½¢ to 2¢ for unpressed; White Nectarines, 7 to 8¢; Red Nectarines, 6 to 7¢ lb.

RAISINS—There is some movement, but not of extensive proportions. We quote as follows: London Layers, 75¢ to \$1.15; loose Muscatels, in boxes, 50¢@75¢; clusters, \$1.50 to \$1.75; loose Muscatels, in sacks, 2½¢ to 2¾¢ per pound for 3 crown, and 2¢ for 2 crown; Dried Grapes, 1¼¢ to 1½¢ per pound.

General Produce Market.

OATS—There is improving demand and dealers are a little more cheerful at the immediate prospect. Arrivals are light, but there are ample stocks on hand to satisfy all current needs. We quote: Milling, \$1.00@1.10; Surprise, \$1.17½@1.25; fancy feed, \$1.12½@1.15; good to choice, \$1.02½@1.10; poor to fair, 80¢@95¢; Black, nominal; Red, nominal; Gray, 95¢@1.05 cwt.

CORN—Stocks are of light proportions, while quotations are firmer all around. Quotable at 92½¢@95¢ cwt, for large Yellow, 95¢ for small Yellow, and \$1.07½@1.12½ for White.

CRACKED CORN—Quotable at \$20.50@21.50 per ton.

CORNMEAL—Millers quote feed at \$20 to \$21 per ton; fine kinds for the table, in large and small packages, 2½¢@3¼¢ per pound.

OILCAKE MEAL—Quotable at \$37.50 per ton from the mill.

SEEDS—Alfalfa and Flax are both scarce and firm. We quote: Mustard, brown, \$2 to \$2.25; Yellow, \$2.50@2.75; Trieste, \$2.25@2.50; Canary, imported, \$4@4.25; do, California, —; Hemp, 3½¢ lb; Rape, 1¼¢@2¼¢; Timothy, 6½¢ per lb; Alfalfa, 8½¢@9¢; Flax, \$3@3.25 per cwt.

CHOPPED FEED—Quotable at \$13@14 per ton.

MIDDLINGS—Quotable at \$17@19 per ton.

MILLSTUFFS—We quote: Rye Flour, 3½¢; Rye Meal, 3¢; Graham Flour, 3¢; Oatmeal, 4½¢; Oat Groats, 5¢; Cracked Wheat, 3½¢; Buckwheat Flour, 5¢@5¼¢; Pearl Barley, 4¢@4¼¢ per lb; Normal Nutrient, \$3 per case of 1 dozen cans; Breakfast Delight, \$3.25 per case of 2 dozen packages.

BRAN—Quotable at \$15.50@16.50 per ton.

HAY—Prices of all descriptions keep regular, the supply and demand being about equal. Wire-bound hay sells at \$1 per ton less than rope-bound hay. Following are wholesale city prices for rope-bound hay: Wheat, \$9@13½; Wheat and Oat, \$9@12½; Wild Oat, \$9@11½; Alfalfa, \$8@10; Barley, \$9@10½; Compressed, \$8@11½; Stock, \$7@8 per ton.

STRAW—Quotable at 60¢@75¢ per bale.

HOPS—There is no representative business in progress and quotations are nominal at 14¢ to 17¢ per pound.

RYE—Quotable at 92½¢@97½¢ cwt.

BUCKWHEAT—Quotable at \$1.15@1.20 cwt.

GROUND BARLEY—Quotable at \$16.50@17.50 per ton.

POTATOES—The market is heavily furnished with supplies, and buyers have the advantage as regards prices. We quote as follows: Sweet, 75¢@1.25 cwt; Early Rose, 30¢@50¢; River Burbanks, 30¢@40¢; River Red, 20¢@30¢; Salinas Burbanks, 75¢@90¢; Oregon Burbanks, 50¢@75¢; Oregon Garnet Chiles, 50¢@65¢ cwt.

ONIONS—Are advancing. Quotable at \$2@2.40 cwt.

DRIED PEAS—We quote: Green, \$1.40@1.50; Blackeye, \$1.60@1.70; Niles, \$1.50@1.75 cwt.

BEANS—Limas continue to advance, being in demand. We quote as follows: Bayos, \$1.90@2.05; Butter, \$1.75@1.90 for small and \$1.95@2 for large; Pink, \$1.30@1.62½; Red, \$2@2.25; Lima,

\$2.15@2.25; Pea, \$2.25@2.35; Small White, \$2@2.15; Large White, \$2@2.12½ cwt.

VEGETABLES—Asparagus is gradually getting cheaper, and lower prices generally are to be expected as the season advances and receipts of all kinds increase in volume. We quote as follows: Cucumbers, \$1@2 per dozen; Asparagus, 7¢@9¢ lb for the ordinary run and 10¢ to 12¢ for fancy; Mushrooms, 10¢@12½¢ lb, for common and 15¢@20¢ lb, for good to choice; Rhubarb, 5¢@6¢ lb; Green Peas, 4¢@5¢; String Beans, —@—¢ lb; Marrowfat Squash, \$15 per ton; Green Peppers, 30¢@35¢ lb; Tomatoes, \$1@2 per box; Turnips, 75¢ cwt; Beets, 75¢ sack; Parsnips, \$1.25 cwt; Carrots, 35¢@40¢; Cabbage, 50¢@55¢; Garlic, 1½¢@2¼¢ lb; Cauliflower, 60¢@70¢ dozen; Dry Peppers, 100¢ lb; Dry Okra, 15¢ per lb.

FRESH FRUIT—Apples of fine quality are in demand, but poor stock is neglected. We quote: Apples, \$1.25@1.75 per box for good to choice, and 50¢@1 for common to fair; Choice Mountain Apples, \$1.50@2 per box.

CITRUS FRUIT—Prices steady under moderate receipts and fair demand. Auction sales of Oranges three times a week are still features of the situation. Fair to choice Navel Oranges, \$1.75@2.25 per box; Seedlings, 1¢@1.25; Mandarin Oranges, 40¢@50¢ lb; Mexican Limes, \$4@4.50 per box; California Limes, \$1@1.50 per small box; \$2.50@3.25 per large box; Lemons, Sicily, \$4@5; California Lemons, \$1@1.25 for common; \$1.50@2.50 for good to choice; Bananas, \$1.50@2.50 per bunch; Hawaiian Pineapples, \$2.50@3; Mexican Pineapples, \$3@3.50 per dozen.

NUTS—Trade is slow, with prices mostly easy. We quote: Chestnuts, 6¢@8¢ lb; Walnuts, 6¢@7½¢ for hard shell, 8¢@9¢ for soft shell and 8¢@9¢ for paper shell; Chile Walnuts, —@—¢; California Almonds, 10¢@11¢ for soft shell, 6¢@7¢ for hard shell and 11½¢@12½¢ for paper shell; Peanuts, 3¢@4¢; Hickory Nuts, 5¢@6¢; Filberts, 10¢@10½¢; Pecans, 5¢@8¢ for rough and 8¢@10¢ for polished; Brazil Nuts, 10¢@11¢; Coconut, \$5@5.50 per 100.

HONEY—Stocks are in excess of the demand, and prices are rather easy than otherwise at the moment. Prospects are not considered favorable for a large yield the coming season. In such event, the market would be likely to improve later on. We quote: Comb, 10¢@11¢ lb for bright and 8¢@9¢ for dark to light amber; water white extracted, 5¢@5½¢; amber extracted, 4½¢; dark, 4¼¢ to 4½¢ lb.

BEESWAX—Quotable at 26¢@28¢ lb.

BUTTER—The situation continues favorable for buyers. Supplies are liberal, and the demand is not sufficient to absorb the offerings. We quote: Fancy Creamery, 19¢@20¢; fancy dairy, 17¢@18¢; good to choice, 16¢@16½¢; common grades, 14¢@15¢ lb; store lots, 11¢@15¢ per lb.

CHEESE—Prices are cheapening under liberal arrivals. We quote as follows: Choice to fancy, 10¢@11¢; fair to good, 9¢@9½¢; Eastern, ordinary to fine, 11¢@14¢ lb.

EGGS—In spite of a prevailing good demand, prices continue to show easy tendency, owing to constant free receipts. We quote: California ranch, 15¢@16¢; store lots, 12½¢@13½¢ dozen.

POULTRY—Prices are low all round, there being a glut of offerings. We quote: Live Turkeys—Gobblers, 9¢@10¢; Hens, 11¢@13¢; dressed Turkeys, 8¢@11¢ lb; Roosters, \$3.50@4 for old and \$5.50@6.50 for young; Broilers, 3½¢@5½¢; Hens, \$3½¢@5½¢; Ducks, 4.50¢@6; Geese, \$1.50@2 per pair; Pigeons, \$2.25@2.50 dozen.

GAME—Arrivals are not heavy, but the demand is slow and the market has a weak tone. We quote: Gray Geese, \$1.50@2; White Geese, 50¢@75¢; Brant, 50¢@75¢; Honkers, \$2.50@3; Hare, 75¢@1; Rabbits, \$1@1.25 per doz.

PROVISIONS—We quote as follows: Eastern Sugar-cured Hams, 12¢; California do, 10¢@11¢; Bacon, Eastern, extra light, 12¢; medium, 9½¢; do, light, 10¢; do, light, boneless, 11½¢; light, medium, boneless, 10½¢; extra light, sugar-cured, 13½¢; Pork, prime mess, \$14@15; do, mess, \$17@18; do, clear, \$19.50; do, family, \$22 per bbl; Pigs' Feet, \$11.50 per bbl; Beef, mess, bbls, \$7.50@8; do extra mess, bbls, \$8.50@9; do, family, \$9.50@10; extra do, \$11@11.50 per bbl; do, smoked, 10¢; Eastern lard, tierces, 7¼¢@7½¢; do prime steam, 9½¢; Eastern pure, 10-lb pails, 10¢; 5-lb pails, 10½¢; 3-lb pails, 10½¢; California, 10-lb tins, 9¢; do, 5-lb, 9½¢; do, kegs, 10¢; do, 20-lb buckets, 9½¢; compound, 7¢ for tierces.

WOOL—Quiet and unchanged in price. New clip is arriving and small sales are reported of San Joaquin and Southern Spring at 6¢@7¢ per pound. We quote fall: Free Mountain, 6¢@8¢; Northern defective, 5¢@7¢; Southern and San Joaquin, 3¢@5¢.

HIDES AND SKINS—Quotable as follows:

	Sound.	Culls.
Heavy Steers, 54 lbs up, ½ lb. 4¼¢@5¢	3¼¢@4¢	
Medium Steers, 48 to 56 lbs. 4¢@5¢	3¢@4¢	
Light, 42 to 47 lbs. 3¼¢@3½¢	2½¢@2¾¢	
Cows, over 50 lbs. 3¼¢@3½¢	3¢@4¢	
Light Cows, 30 to 50 lbs. 3¼¢@3½¢	2½¢@3¢	
Stags, 17 to 30 lbs. 4¢@5¢	3¢@4¢	
Kips, 17 to 30 lbs. 4¢@5¢	3¢@4¢	
Veal Skins, 10 to 17 lbs. 5¢@6¢	4¢@5¢	
Calf Skins, 5 to 10 lbs. 7¢@8¢	6¢@7¢	

Dry Hides, usual selection, 7¢; Dry Kips, 7¢; Calf Skins, do, 7¢; Cull Hides, Kip and Calf, 4¢; Pelts, Shearling, 10¢@20¢ each; do, short, 25¢@35¢ each; do, medium, 40¢@50¢ each; do, long wool, 50¢@75¢ each; Deer Skins, summer, 25¢; do, good medium, 15¢@20¢; do, winter, 5¢ per lb; Goat Skins, 25¢@40¢ apiece for prime to perfect, 10¢@20¢ for damaged, and 5¢@10¢ each for Kids.

TALLOW—We quote: Refined, 5¼¢@5½¢; rendered, 4¼¢@4½¢; country Tallow, 4¢@4¼¢; Grease, 3¢@4¢ per lb.

San Francisco Meat Market.

There is abundant supply of all descriptions except Spring Lamb. Following are the rates for whole carcasses from slaughterers to dealers:

BEEF—First quality, 5½¢; second quality, 4½¢@5¢; third quality, 3¼¢@4¼¢ lb.

CALVES—Quotable at 4¢@5¢ for large, and 5¢@8¢ lb for small.

MUTTON—Quotable at 5¼¢@6¼¢ lb.

LAMB—Spring, 10¢@12½¢ lb.

PORK—Live Hogs, on foot, grain fed, heavy and medium, 4¼¢; small Hogs, 5¼¢; stock Hogs, 4¼¢; dressed Hogs, 7¢@7½¢ lb.

MOWERS. HAY RAKES.

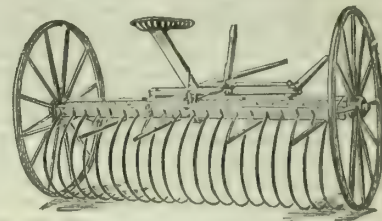
'The Improved Champion.'

Greatest of Grass Cutters.



TIGER Self-Operating Sulky Hay Rakes.

WOOD OR STEEL.



The Standard Rake of the World.

FACTS FOR DEALERS AND FARMERS.

Those who are at all familiar with the implement trade, and know anything of the reputation of the different Hay Rakes that have been on the market for the past fifteen years, will not dispute the claim that THE TIGER HAY RAKE is to-day, as it has been for sixteen years past, THE STANDARD RAKE OF AMERICA, and the one by which all others have been measured and compared.

As proof of this, there are now nearly

240,000 TIGER SELF-OPERATING HAY RAKES IN USE.

Which is MORE THAN DOUBLE THE NUMBER OF ANY OTHER RAKE IN THE WORLD.

New Features.

For this season the Tiger has been greatly improved. Hereafter it will be made with

STEEL SEAT AND SEAT STANDARD,
CHANGEABLE OR DIVIDED LEVER,
STEEL CLEANER STICKS,
CONTINUOUS HEAD,
SOLID DUMP WHEEL in center of axle,

Which make it BETTER THAN EVER, AND STILL FAR AHEAD OF ITS COMPETITORS.

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NOTICE.

The Annual Meeting of the Stockholders of the GRANGERS' BUSINESS ASSOCIATION, a corporation, for the election of a Board of Directors, and for the transaction of such other business as may properly come before it, will be held at No. 163 Davis Street, San Francisco, at 10 o'clock, A. M., Wednesday, April 11, 1894.

CHARLES WOOD,
Secretary.I. C. STEELE,
President.

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Circulars free. Send 6c. for Free Catalogue. GEO. H. STALL, Quincy, Ill.

History of Matches.

The lucifer match has attained its present high state of perfection by a long series of inventions of various degrees of merit, the most important of which resulted from the progress of chemical science. Starting from the ingenious tinder box of our Saxon ancestors, the first attempt, so far as known, to improve on the old sulphur match was made in 1805 by Chancel, a French chemist, who tipped cedar splints with a paste of chlorate of potash and sugar. On dipping one of these matches into a little bottle containing asbestos wetted with sulphuric acid, and withdrawing it, it burst into a flame. This contrivance was introduced into England some time after the battle of Waterloo, and was sold at a high price under the name of Prometheans. Some time after this a man opened a shop on the Strand. It was named the Lighthouse. An ornamental open moiree metal box, containing 50 matches and the sulphuric acid asbestos bottle, was sold for a shilling. It had a large sale and was known in the kitchen as the Hugh Perry.

Heurtner also brought out Vesuvians, consisting of a cartridge containing chlorate of potash and sugar and a glass bead full of sulphuric acid. On pressing the end with a pair of nippers the bead was crushed and the paste burst into flame. This contrivance was afterward more fully and usefully employed for firing the gunpowder in the railway fog signals.

We now come to Walker. He was a druggist at Stockton-on-Tees, and in 1827 produced what he called Congreves, never making use of the word lucifer, which was not yet applied to matches. His splints were first tipped with the chlorate of potash paste, in which gum was substituted for sugar, and there was added a small quantity of sulphide of antimony. The match was ignited by being drawn through a fold of sandpaper with pressure; but it often happened that the tip part was torn off without igniting; or, if ignited, it sometimes scattered balls of fire about. These matches were held to be so dangerous that they were prohibited by law in France and Germany.

The first grand improvement took place in 1833 by the introduction of phosphorus into the paste, and this seems to have suggested the word lucifer, which the match has ever since retained.

When phosphorus was first introduced to the match-maker its price was \$20 per pound, but the demand for it soon became so apparent that it had to be manufactured by the ton, and the price quickly fell to 60 cents per pound.—Exchange.

History of Iron Making.

Iron was used before history was written. The stone records of Egypt and the brick books of Nineveh mention it. Genesis (ix, 22) refers to Tubal Cain as "an instructor of every artificer in brass and iron," and in Deuteronomy (iii, 11) the bedstead of the giant Og was "a bedstead of iron." The galleys of Tyre and Sidon traded in this metal; Chinese records ascribed to 2000 B. C. refer to it; Homer speaks of it as superior to bronze. The bronze age came before the iron age, because copper, found as a nearly pure metal, easily fuses, and with another soft metal—tin or zinc—alloys into hard bronze; while iron, found only as an ore, must have the impurities burnt and hammered out by great heat and force before it can be made into a tool. The word sometimes translated "steel" in our English Bible really means bronze or brass; but steel was distinctively known to the later ancients. Pliny the elder wrote in the first century of our era: "Howbeit as many kinds of iron as there be none shall match in goodness the steel that comes from the Seres (Chinese), for this commodity also, as hard ware as it is, they send and sell with their soft silks and fine furs. In a second degree of goodness is the Parthian iron."

Asia probably made more iron and steel 30 centuries ago than it does to-day. About the time of the first Olympiad, 776 B. C., there is authentic record of the use of iron in Greece, and Lycurgus used it for the money of Sparta. Iron and steel weapons of war began to displace those of bronze before the battle of Marathon. The Romans learned iron-making from the Greeks and the Etruscans—their mysterious and highly civilized neighbors—and obtained iron largely from Corsica, where the mines had been worked from the prehistoric period. The Roman legionaries found in Spain steel weapons of the finest temper, and Diodorus says that the weapons of the Celtiberians were so keen "that there is no helmet or shield which cannot be cut through by them." Toletum (now Toledo) was then as famous for its sword blades as afterward in

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In less than ton lots we make it $3\frac{1}{4}$ ¢ per lb.

All previous quotations have been higher.

We have CARLOAD LOTS on the way and arriving.

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SMITHS' CASH STORE, 416-418 Front St., San Francisco.

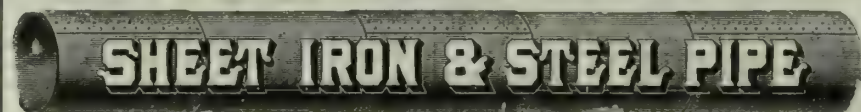
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Hydraulic, Irrigation and Power Plants, Well Pipe, Etc., all sizes.

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Iron cut, punched and formed, for making pipe on ground where required. All kinds of Tools supplied for making Pipe. Estimates given when required. Are prepared for coating all sizes of Pipes with a composition of Coal Tar and Asphaltum.

the Middle Ages. Cæsar found the painted Britons fighting with spear-heads of bronze, but wearing armlets of iron, and remains of pre-Roman forges are still found in England and Wales. The Germans knew the art of sword-forging, and their legends of dwarfs and trolls with magic swords point to an earlier people, adepts in mining and metallurgy.—From "A Bar of Iron," edited by R. R. Bowker in Harper's Magazine for February.

Raise What You Eat.

The Braidentown Journal has a few sensible words in reference to the matter of growing home crops—crops that can be consumed by the grower and his family and that will make him independent of the markets. What is said in this connection in reference to Manatee county will apply to many other sections of the State. After reviewing at some length the unsatisfactory returns received for oranges and vegetables the editor of the Journal remarks: The time has come when every wise farmer in Manatee county will sit down and figure out how far he can produce the necessities of his family. We need more old fashioned farming with hogs in the pen, cattle, horses and sheep grazing in the meadows, fields of corn and oats, the kitchen garden, barns full of grain and hay, a clump of bananas, the vine and fig tree which are natural to the soil and climate; the peach and plum orchard vared with guavas, mangoes and the other luscious products of our section. We have run after speculative crops too much and neglected more permanent improvements. Let us also turn our attention to sundry experiments. Try different fertilizers on different trees and vines, plant them in various soils and learn to reach the best and quickest results. Study the valuable advice of the excellent agricultural papers of the State. Our agriculture differs materially from that of other sections.

Then the industrious farmer can still find time to plant a winter crop of vegetables and give the transportation companies and commission men a chance to make a living. Perhaps in the near future we may find a way to demand the price of our products and get it; then our old industries will pay again.

We have developed this country without the disadvantages of a "boom," but we have possibly used boom methods too far in our crops. We must get back to more substantial farming—back to the good old way—Florida Agriculturist.

How's This!

We offer One Hundred Dollars Reward for any case of Catarrh that cannot be cured by Hall's Catarrh Cure.

F. J. CHENEY & CO., Props., Toledo, O. We the undersigned have known F. J. Cheney for the last 15 years, and believe him perfectly honorable in all business transactions and financially able to carry out any obligation made by him.

WEST & TRUAX, Wholesale Druggists, Toledo, O. WALKING, KINNAN & MARVIN, Wholesale Druggists, Toledo, O. Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Price, 75c. per bottle. Sold by all Druggists. Testimonials free.

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MACHINE WORKS,

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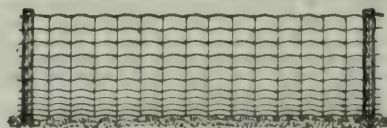
DEEP WELL PUMPS

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The cross wires of a smooth wire fence may be likened unto the stitches in a garment. If the thread be strong, the stitches close, that garment shall hold, even as "The Page" holdeth the little pigs. But beware of the garment held together by "basting threads"; strong cloth and big thread availeth not. The wearer shall surely come to grief. PAGE WOVEN WIRE FENCE CO., Adrian, Mich.

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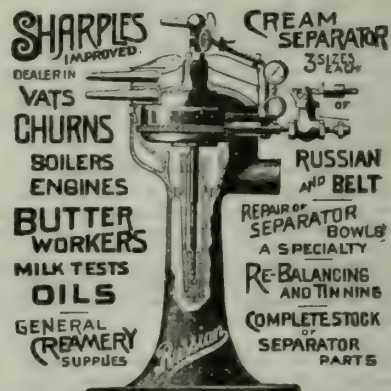
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The Cause of Trees Being Struck by Lightning.

The frequent striking of trees by lightning is a traditional phenomenon that is well known, but the causes of it are not so precisely known, although it is, in a manner, a primordial electric manifestation. Mr. D. Jonesco has recently made a series of interesting experiments on this subject, the results of which have been communicated by him to the Agricultural Society of Brabant, says *La Genie Civil*.

Mr. Jonesco has ascertained that certain trees attract lightning better than others. Starting from this, he has endeavored to find out how the various forest trees behave with respect to electric discharges, and has ascertained that the greater or less conductivity of trees should be taken so much the less into consideration in proportion as the electric tension is stronger. When the latter is sufficiently elevated, any tree may be struck by lightning; but differences exist from the moment that the tension is feeble. The richness of the wood in water, contrary to what is generally believed, has no influence upon the conductivity of the living wood for the electric spark. On the contrary, such conductivity depends much upon the richness of the wood in starch and oil. Mr. Jonesco, in accordance with Mr. A. Fischer on this subject, consequently distinguishes trees as oil trees and starch trees, and reaches the following conclusions:

The green wood of trees is in all cases a bad conductor of electricity, and so much the worse in proportion as the tree is richer in oil. On the contrary, the green wood of amyloseous trees, poor in oil, conducts electricity relatively well. Living wood is a much better conductor than dead. This existence of dead branches in trees of both categories, therefore, increases the danger of lightning. This is an observation of no small importance from the standpoint of the safety of houses situated in the vicinity of large trees. The cambium and bark are better conductors than the wood, but these parts are relatively to the bulk of the tree, too slightly developed to modify its electric conductivity. The latter, therefore, depends upon the wood only, since, according to Mr. Jonesco, the foliage is equally without influence upon the relative conductive power of trees for the electric spark.

The results of these researches are confirmed in the statistics given by Mr. Jonesco, and which consist in the observations made upon lightning strokes and trees since 1847 by the superintendency of forests of the principality of Lippe. It has been found, for example, that the oak is much oftener struck than the beech. Now, the first is a type of starch tree and the second a type of oil tree. On another hand, the observations made establish the fact that the frequency of lightning strokes is greater in the dry than in the other branches. Besides, the same statistics go to prove that the danger of lightning has no relation with the character of the soil. Although the highest figures are shown in hard and sandy ground, this is due to the fact that starch trees grow in such soil, but the nature of the latter is without influence.

Change of Firm and Removal.

We have to give a removal notice of some considerable importance to the vehicle and agricultural implement trade. As most of our readers are aware, the well-known and long-established firm of Truman, Hooker & Co. went out of business on February 1st of this year and a new firm was formed, entitled Hooker & Co., composed of C. O. Hooker, the junior member of the old firm of Truman, Hooker & Co., and J. H. Brunnings, the latter of whom has been in this line of business for several years.

Hooker & Co. have purchased all the merchandise and the good-will of the firm of Truman, Hooker & Co., and have taken the old firm's agencies, except the Challenge hay press; this press will be sold hereafter by I. J. Truman.

Heretofore the show rooms and store have been located at 421 and 423 Market St., one of the most prominent locations in town, but they were too small to do justice to the large business transacted. As a consequence, Hooker & Co. have moved to a larger and finer store at 16 and 18 Drumm St. This street runs into Market St. at the foot of California St. Their show room will be much larger and finer, and as the location is nearer the ferries, it will be easier of access to customers from the country.

Make use of time, if thou lovest eternity. Know yesterday cannot be recalled, to-morrow cannot be assured; to-day only is thine, which, if thou procrastinate, thou losest; which, lost, is lost forever. One to-day is worth two to-morrows.—Selected.

When we advance a little into life, we find that the tongue of man creates nearly all the mischief in the world.—Paxton Hood.

Alloy in Metals.

Exact alloys of metals are often difficult to make, and with many a very small quantity of alloy greatly affects their qualities and produces some peculiar and unaccountable phenomena in working the metal, says the *Scientific American*.

The presence of 12000 of an ounce of antimony per pound of lead increases the activity with which it oxidizes and burns in the melted state. Lead containing more than 1-1000 of an ounce of copper per pound is unfit for the manufacture of white lead, on account of its coloring properties. Gold, with an alloy of 1-2000 of its weight of lead, is extremely brittle. Nickel was regarded as a metal which could be neither hammered, rolled nor welded, until it was discovered that the addition of 1-1000 part of magnesium or of 31000 of phosphorus makes it malleable and weldable to iron and steel. One-twentieth of an ounce of iron to one pound of copper renders the copper hard and brittle. Copper containing 1-1000 of its weight of antimony or bismuth cannot be used for making rolled brass. Zinc mixed with copper to the amount of 1-10 of an ounce per pound makes the copper red short. One-sixth of an ounce of arsenic makes copper hot short, while $\frac{1}{4}$ of an ounce makes it cold short. Some of the copper of commerce, made from ores containing other metals, sulphur, arsenic and silicon, is sometimes the cause of serious trouble with manufacturers in the rolling and stamping of copper and brass goods.

The electric conductivity of copper is largely modified by small admixtures of other metals, as with one-half of one per cent of iron its conductivity is reduced 60 per cent, as also with varying alloys of other metals of low conductivity.

Importation of Fine Draft Stock.

Mr. S. D. Thompson of Chicago, secretary of the American Percheron Horse-Breeders' Association and a well-known authority on the draft horse, has recently arrived in San Francisco with the finest lot of draft stallions seen in this State for many a day. It is questionable, indeed, if a collection of heavy horses equally well bred and excellent as individuals was ever before brought here. The list comprises Percherons, English Shire and French Coach, and it is worth the while of any horse-lover to look in on them. Mr. Thompson presents in the form of an advertisement on another page some very pertinent remarks on horse breeding.

Mr. Thompson invites inspection of his stables (opposite the Bay district race track) especially from persons interested in the breeding of heavy stock. He represents in the sale of these horses N. W. Dunham, of Wayne, Indiana, the well-known importer, breeder and dealer who is well known to all California horsemen.

List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR THE WEEK ENDING MARCH 6, 1894.

- 515,947.—VENTILATOR—Aubrey & Dawson, Stockton, Cal.
- 516,044.—WHEELED SCRAPER—A. F. Bernard, San Luis Obispo, Cal.
- 516,046.—HORSESHOE—Z. Birdsell, S. F.
- 515,991.—ALARM BELL—C. S. Bradley, Portland, Ogn.
- 515,999.—ROAD SCRAPER—W. H. Diederick, Stockton, Cal.
- 516,000.—WEED CUTTER—J. F. Dole, Colfax, Wash.
- 515,860.—CHIMNEY—C. E. S. Dunlevy, Oakland, Cal.
- 516,047.—WIRE BED-BOTTOM—O. H. Elliott, S. F.
- 515,758.—GAS BURNER—G. I. Ewers, S. F.
- 515,759.—GAS BURNER—G. I. Ewers, S. F.
- 515,864.—CAR COUPLING—C. W. Hinton, Los Angeles, Cal.
- 516,065.—AMALGAMATOR—A. Jadin, S. F.
- 515,866.—BRUSH CUTTER—Kelly & Holloway, Healdsburg, Cal.
- 516,068.—CAR VENTILATOR—T. L. Merrill, Oakland, Cal.
- 515,869.—IRONING TABLE—J. M. Moore, Magnolia, Cal.
- 515,871.—HEADER—F. W. Nesely, La Grande, Ogn.
- 516,111.—BUILDINGS—E. L. Ransome, Oakland, Cal.
- 516,112.—BRICKS—E. L. Ransome, Oakland, Cal.
- 516,113.—CONCRETE—E. L. Ransome, Oakland, Cal.
- 516,114.—GRAIN CLEANER—J. E. Riley, Wilmington, Cal.
- 516,115.—SLIP CUTTER—A. J. Rudolph, S. F.
- 515,973.—CORECROW, ERO.—J. Scharbaum, S. F.
- 516,064.—STEAM ENGINE—E. Shydecker, S. F.
- 516,065.—CAN-BODY MACHINE—C. M. Symonds, S. F.
- 515,888.—FARM REGISTER—E. T. Taylor, Oakland, Cal.
- 515,980.—TRAP—Turner & Fletcher, Los Angeles, Cal.
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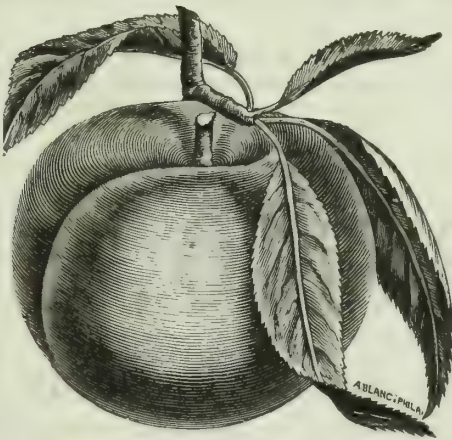
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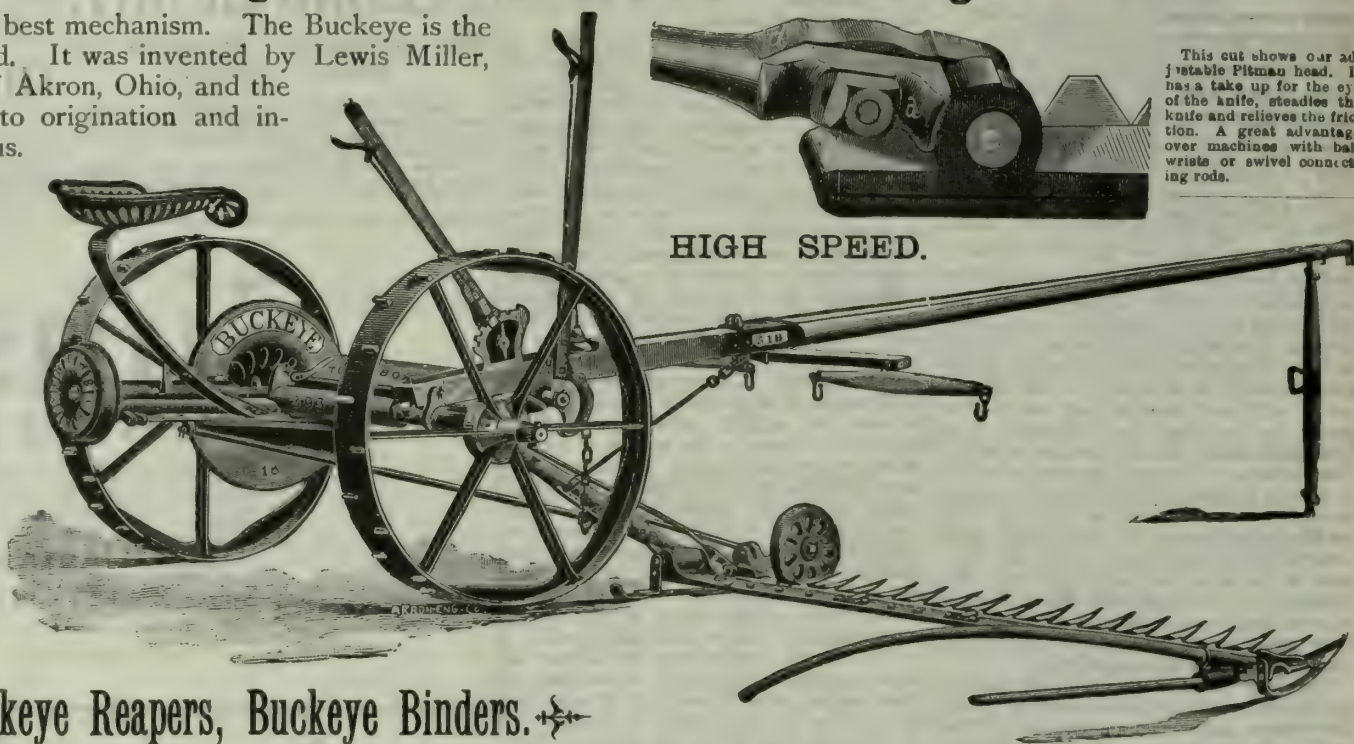
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The Situation as to Horse-Breeding.

Before giving up the breeding of horses and declaring the business dead, will it not be well to take a candid practical view of the case, and before throwing away an advantage already gained, consider well what has brought on present conditions, whether the causes are likely to continue indefinitely, and if not, how best to take advantage of the change when it comes. Nearly every kind of business has had its boom and reaction during the last twenty years, and the horse business has been one of them. Its effects have been and are felt over a wider extent of country than almost any other business, because it is so intimately connected with every other. Many breeders attribute the present condition of the horse market to over-production, and the introduction of electricity. The over-production has been entirely of the cheaper grades, and this class is what is being displaced by electricity. Electricity can never take the place of the heavy draft or fine coach horse. General business depression has had more to do with the fall in the horse market than anything else. Nearly every one is economizing and doing without or making the best of what they have. That this condition will last long no one believes. A renewed demand is among the certainties of the future. When this fresh demand comes there will be a short supply to meet it, because of the falling off in breeding for the past three years and the probable continuance of it for a year or two to come. Horses, as a rule, are short-lived animals. The visible supply is being used up at a very rapid rate, and the fact that it takes five years to produce a horse ready for market is lost sight of by the croakers who are now and have been for three years crying the horse business down. Another fact is that the best time to engage in the production of any staple commodity is when it is down and not when it is booming. So many farmers have learned by sad experience that they cannot produce salable horses from ordinary stallions and have given up the attempt, that the chance for those who can and do raise first-class horses in the future will be greatly improved. Taking past experience and a candid view of the future of this country, it would seem that now is the right time for those farmers who are favorably situated to take hold of high-class horse breeding in earnest. They can now secure a choice selection of mares at moderate cost and buy first-class stallions at "rock-bottom" prices. The latter can now be bought cheaper than they are likely to be again for years, for the reason that this year will about use up the stock of imported stallions on hand and good ones cannot be imported to sell at prevailing prices. Think on these things. Should not, under the circumstances, the owners of mares be more particular than ever in their choice of stallions and breed more judiciously than ever for the inevitable future market? The present conditions are simply the result of bursting boom bubbles. This country is not going to destruction; business is settling down to a sound basis, and a healthy reaction is sure to follow. A revival in general business will bring a quick and strong demand for horses, and the man who then has good ones can name his own price for them. Of course, the main point in breeding is the choice of a stallion, and care should be taken to buy only the best and from a reputable importer.

There has been lately landed in San Francisco the finest lot of imported Percheron and French Coach stallions ever brought to the Pacific Coast. This stock ranges in age from two to six years, and was selected in France by the veteran importer, Leonard Johnson, who for many years was foreign buyer for M. W. Dunham, of Wayne, Ill. Mr. Johnson has personally selected and brought to this country over Two Thousand Horses, and is universally acknowledged to be the best judge of Draft Horses in America. Each animal in this lot is a good one, not only individually, but of the best possible breeding, as is attested by the certificates of registry in both the Percheron stud-books of France and America. A satisfactory guarantee given that each stallion will get sixty per cent of colts. This is a rare chance to get a first-class stallion, as no such stock as this has ever been offered for sale here at as low figures as this will be sold for. Time given on approved paper. STABLES—Close to Midwinter Fair, on Fifth avenue, opposite Race Track, next door to Scott & McCord's Feed Store, San Francisco, Cal. Take Geary street car. For further information and catalogues, address the Secretary of the American Percheron Horse Breeders' Association, **S. D. THOMPSON**, OCCIDENTAL HOTEL, SAN FRANCISCO.

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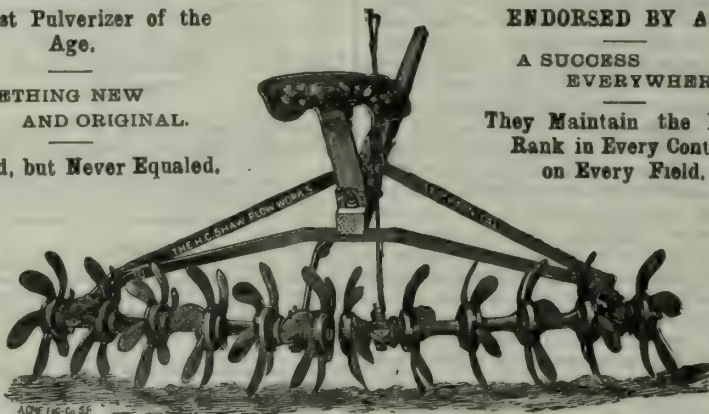
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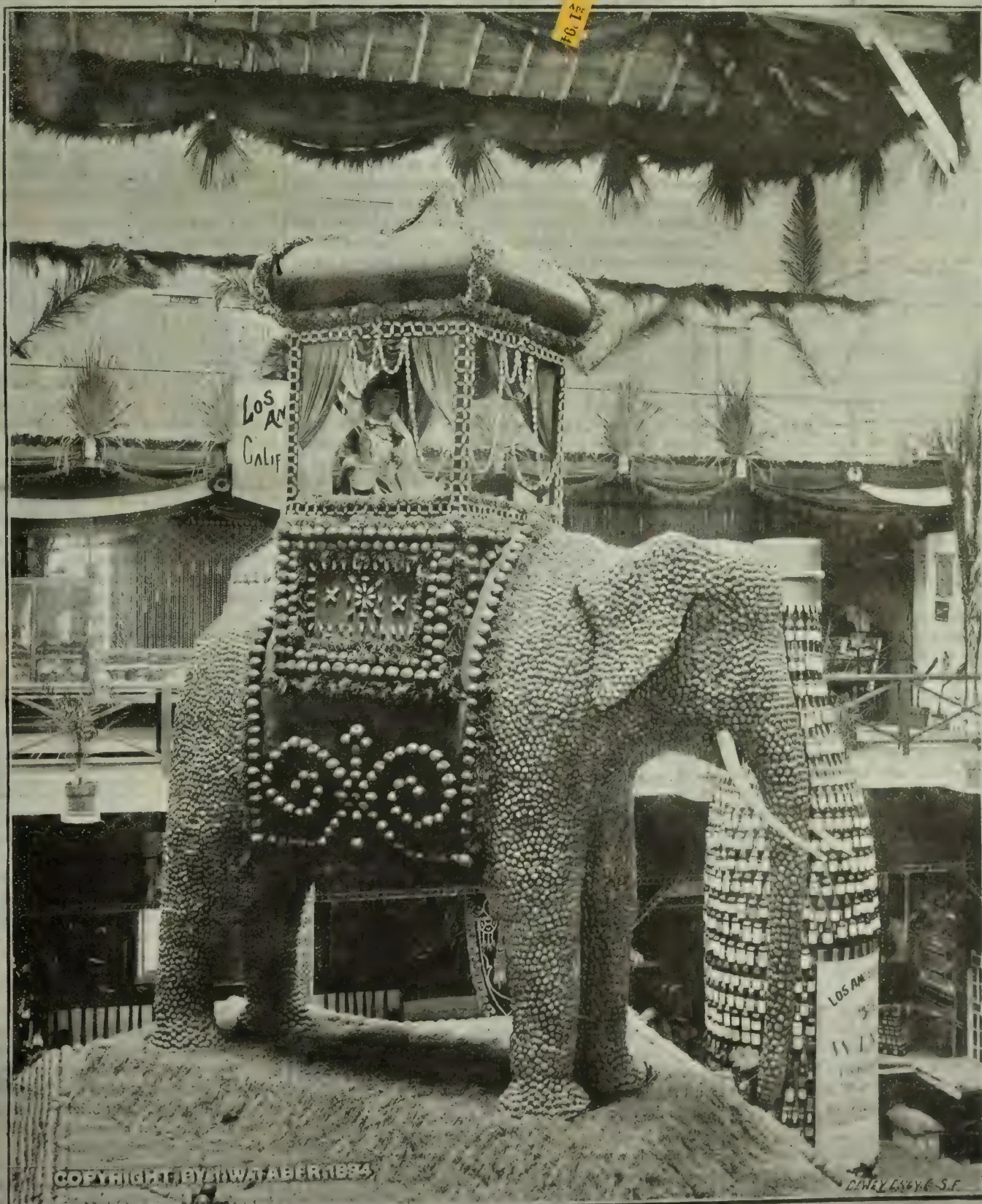
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PACIFIC RURAL PRESS

Vol. XLVII. No. 13.

SAN FRANCISCO, SATURDAY, MARCH 31, 1894.

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fruits, representing pillars or columns, the interior of the arch and the outside of the whole structure are covered with 15,000 oranges of the best quality of Washington navels. Upon this structure of oranges, lemons and other fruits, stands this life-size elephant. It is an astonishing

piece of work, and the task of placing 1000 pounds of walnuts on the skeleton of the animal to form his hide is realized to have been a very tedious one. The saddle-cloth, howdah and trappings are outlined in citrus fruits, peanuts and corn; the passenger is a young lady of wax.

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ALFRED HOLMAN.....Editor
J. F. HALLORAN.....General Manager
E. J. WICKSON.....Special Contributor

San Francisco, March 31, 1894.

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The Week.

In the face of the severe weather everywhere east of the Rocky mountains—weather which has buried frozen cattle beneath the snowdrifts in Wyoming and killed fruit from Kansas to Delaware and from Michigan to Texas—it seems trifling with Providence to complain of our meteorological ills. And yet it must be admitted that vast areas of the State are on the ragged edge so far as field crops are concerned, and considerable portions have perhaps already gone into a drouth which may be the worst since 1877. However, it will not do to give up yet. The game is not yet played out. The statement of the Weather Office in this city, just received, shows that within the last 23 years we have had on one occasion over 10 inches of rain in April and that the April average is 2.07 inches. It is true that there was in April, 1875, only one-tenth of an inch, but we do not yet need to expect such a scarcity. The April average of 2.07 inches will do for parts of the State where the rainfall thus far has approached the average; but it will hardly bring out the regions which are this year on very short supplies.

The dry winds of the last week have wasted a vast amount of moisture. Land which was but recently too wet to plow is now too hard to pulverize. It will require watchfulness and timely work on the part of the orchardist to get his land down to good summer condition and waste just as little of the current rainfall as possible in doing it.

THE spectacular element in industrial display seems to appeal irresistibly to the million. The prune horse of Santa Clara at Chicago certainly did a hundred-fold more to attract attention to our prune product than would the finest possible display in the finest packages. Although such efforts may be a concession to common taste, it is hardly worth while to argue that point; for it is the average taste and imagination to which a staple product must appeal for popularity. The prune horse is making another race for popularity in the Santa Clara Building, Midwinter Fair, and a rival in the horticultural menagerie is the walnut elephant, of which a portrait is given on our first page this week.

An Opportunity and a Duty.

Most appalling are the accounts of frost injuries to vegetation all over the Atlantic slope. During severe weather it is natural to exaggerate the evil and its consequences and we hope, for the comfort of Eastern horticulturists, that this may prove to be the case in this matter. There is, however, the record of the Weather Bureau, which is unequivocal and supplies the *raison d'être* for the dire observations which are published. Its conclusion is that such extremes of temperature during March have never been recorded since the Government began weather studies. This means, of course, that the heat of early March, which deluded the plants and the people with the idea that winter was over, was followed by greatest cold ever known at this date. According to the old proverb, March came in like a lamb and is going out like a lion. Early growth of vegetables, swelling buds and bursting bloom on fruit trees, decayed by warmth from safe dormancy, is now withered and blasted to an extent never before known.

It is evident from the conditions outlined so sharply by the many dispatches which we print on other pages, that there will be something almost like a fruit famine east of the Rocky mountains. This will bring deprivation to millions. It is not alone the losses to Eastern producers, although those will be immense, but the suffering which will result to the great masses of population to have the available supply of deciduous fruits so seriously reduced, which are worthy of attention. Our California producers will not be at all disposed to gloat over the misfortune of their Eastern producing brethren, but they must feel that the course of elements brings them a great opportunity to do well with Pacific coast fruit supplies, and a duty to discharge to furnish Eastern people articles which are so valuable in their food supplies. It is this second phase of the matter which we select for comment at this time.

Surely the sad losses at the East should excite our fruit interest to bestir itself to the best of its ability. We should not experience again the distrust and demoralization of the last fruit harvest. It is time now to ensure such arrangements that every pound of good fruit shall be profitably placed. If proper effort is made by fruit-growers, shippers, canners and driers there can be ways opened by which all these classes of producers can work effectively and well. How far these classes need to work together we do not pretend to say, but either together or separately there should be no doubt allowed to exist as to the availability of the capital which will be needed for a great summer's production. We hope the financial scare has been so far allayed that it will be no longer an obstacle. We hope that the vast stores of coin which, it is reported, are now in places of safety, will all be brought to light and put to work in preparations for canning, shipping and drying. It is certainly no year to allow fruit to perish because of the trepidation of capitalists. By beginning in season and proceeding upon some commercial basis, it seems beyond question that everything sound and promising in the line of fruit preparing and moving can be put in shape before the ripening of the fruit. Then there will come straightforward and economical work, quick sales and reasonable profits, which will give the California fruit interest a lift beyond anything it has hitherto experienced.

Certainly, the growers should not sit aside and wait for the merchants to arrange for this vast traffic which seems assured. That will be the temptation we admit. It will be easy to say, "Never mind; fruit will sell itself this year," but that policy has been the cause of most of our troubles and will not end them. One of our readers, in a note upon another page, suggests that, inasmuch as the Fruit Union proposes to let go of its recent policies, there should be an opportunity to rehabilitate the organization upon the lines on which it was established. The suggestion seems a good one; but if there be anything in the way of that, it is quite feasible to take up the Fruit Exchange and push that at once into shape to handle fresh-fruit shipments upon a sound co-operative basis and upon a wide distribution policy at the East.

There is another phase to this duty aspect of the affair. It is plainly a duty to the Eastern consumer, who is now by misfortune almost helpless unless California gives him fruit, that his extremity be not allowed to subject him to extortion. There will be fruit enough in California to cover a vastly larger Eastern market area than has ever before been reached. Thus California fruit can become known to consumers who have never used it. This is perhaps one of the very greatest features of the present opportunity. If fruit should be sold this year as it has been in some former years, upon the plan of getting the greatest possible amount of money for the least possible weight of fruit, then will the Eastern people be robbed and the California growing interest will not be fitly advertised.

For this reason, if for none other, the producers of California fruit, in all its forms, should regulate the Eastern trade this year as they have never done before. And to do this next summer they should prepare now. There is hardly a day to lose in all the work which the course of events makes possible and obligatory.

THE Department of Agriculture has issued a circular to be sent to all railroad presidents in the United States, offering suggestions for their co-operation in the good roads movement. Many of the railway companies have made concessions in transporting road materials, ranging from half rates to free carriage. Others have offered to carry the freight at the bare cost of hauling whenever a general improvement be undertaken. It is suggested that the latter plan be generally adopted. The method of computing the cost, it is cited, would be defined and a board constituted for adjusting the rates to be granted in accordance with local conditions. The circular says: "Such a combined concession would be of immense value to the public, while it would involve little actual expense to the companies, and its bare announcement would do more to advance the movement than years of purely educational work." This idea of railway co-operation in building good wagon roads may seem reasonable enough at the East, but it has a Utopian flavor in this State. It is all our railroads can do apparently to compete with the ordinary dirt road, and if they should help to build good hard rock roads the people might all take to wagons for freight purposes. Bad roads are the sheet anchor by which the railways hold their extortionate freight rates down on the people. We do not suppose the managers will be silly enough to monkey with road improvement.

EGG STATISTICS are always charming, whether they stop with eggs or go on to chickens. But the *Rural North-west* is undoubtedly right when it says that eggs have not fallen more proportionately than other farm products, and as the Pacific coast is even yet importing eggs from the East, the time has certainly not come for restricting the home production of eggs. There are but few farms on which it will not be found profitable to keep from 25 to 50 hens. When only a limited number are kept the cost of their feed will be very little, as a very large proportion of it will consist of scraps, screenings and other waste material. It may be thought that the product of so small a number of hens would not amount to much, but if there were 30 hens on each of 50,000 farms in Oregon and Washington, and each hen laid on the average 100 eggs per year, the total product would be 150,000,000 eggs, or 150 eggs for each of the million inhabitants of the two States taken together. At the low average price of 12 cents per dozen these eggs would be worth \$1,500,000. The same figures would apply well to California.

THE present low wheat prices do not seem to justify themselves to the *Mark Lane Express*. That journal gives the following balance of supply and demand for the cereal half year:

	Qrs.
British wheat supply.....	3,327,000
Foreign wheat supply.....	6,640,000
Foreign flour supply.....	3,163,000

Supply, total.....	13,130,000
Requirements.....	13,500,000

Reduction of stocks..... 370,000

The *Express* says: "This is more than a 'tight fit,' and affords no clue to prices on March 1st being lower than on September 1st. The market is suffering not from any plethora of fresh supplies, but from the want of chances to clear any material proportion of the old stocks." There is evidently something outside of the supply and demand which makes values lower than last fall; and this being the case, there is more than a fair chance of change and improvement.

ENGLISH sparrows have become such an intolerable nuisance in Maryland that a crusade of extermination has begun in a novel way. Great numbers of the birds roost in barns and outbuildings. The farmers, armed with broad, light paddles and bright lights, go to the buildings at night. The light attracts the birds, they swarm to it and are killed with the paddles.

THE report of the statistician of the U. S. Department of Agriculture for February shows that the value of the farm animals in the United States on January 1, 1894, was \$312,276,495 less than it was on January 1, 1893. The only class of animals which are worth more in the aggregate this year than they were last are milch cows.

THE average yield of potatoes per acre is less in the United States than in any other country in the world in which potatoes are grown extensively. Great Britain has the highest average yield, about 180 bushels per acre, and Belgium and Holland follow closely.

From an Independent Standpoint.

The most novel and grotesque development of the hard times season is the so-called Industrial Army which is marching toward the national capital in two divisions, one about one hundred strong under "General" Coxey and "Marshal" Carl Browne, starting from central Ohio; and another about six hundred strong under "General" Fry from southern California. The announced purpose of this movement is to assemble a vast host of unemployed workmen at Washington and demand of Congress the immediate issue of half a billion dollars. It is to be an army of peace, so its leaders explain; it will go unarmed and will not seek to enforce its demands by other than moral appeals. The California division started two weeks ago, and by alternate marching and riding on freight trains has reached the western border of Texas, subsisting by the way partly on voluntary contributions from the people and partly through foraging of a mild sort. They are now stranded in a vast Texan prairie, the railroad managers having stopped freight trains to prevent their riding. Just what is to become of them is not apparent, for they are without supplies in a desert region; and to get out of it on foot, either by turning backward or going forward is out of the question. They will soon be at the starvation point, and the railroad people will be compelled by common humanity to relent and move them one way or the other. The Ohio division is moving painfully over frozen roads in the face of March storms at the rate of ten or twelve miles a day, and it is now (Wednesday) at Alliance, in eastern Ohio. Both columns pick up recruits as they march, but the accessions are nearly matched by desertions; and up to this time there is no sign of the "triumphal host" which the leaders promise will soon be moving on to Washington. Their claim now is that as they approach the capital they will be joined by innumerable caravans, and that early in May they will march down Pennsylvania avenue half a million strong.

Of course, the folly of all this is unspeakable. The so-called "industrial army" is a mere band of tramps held together by the novelty of the scheme and the chance of adventure. When Gen. Fry's division left Los Angeles there was not in the whole six hundred a man who could be identified with any respectable industrial calling. There was not a reputable mechanic, or farmer, or a respectable man of family in the crowd; it was simply a gang of idle and wandering vagabonds, the sort which seeks to avoid rather than to find legitimate work. So far as this vagrant company can have any purpose, it is to enjoy a novel excursion and to live at free quarters, and to gratify its malignant passion by railing at the industrious and the prudent upon whose charity it subsists. The leaders are the familiar sort of agitators—what Mr. Bierce calls the "harangue-outrage" of social unrest—who disdain all other labor but that of their jawbones and seek to live by the knavery of fomenting discontent and disturbing public order.

It is not unlikely that this vagabond outfit, or some part of it, may reach the national Capital; but it can have no possible effect either upon Congress or upon the country. If it goes as it is planned as an "army of peace" it will do nothing more than add to the vagrant population of Washington; if it makes any motion toward violence it will find a sharp reception and short shrift. In no possible view can it come to anything.

So far as this movement has any rational motive, it rests upon the theory that it is the duty of the government to provide for the welfare of the citizen, or in other words upon the ideas which lie at the base of modern socialism. That even a few hundred men of the most idle and contemptible sort can be found to engage in such a hare-brained scheme as the march to Washington; that there is on the part of the public sufficient sympathy with the movement to provide them with food; that even in the Senate and in the House of Representatives there are to be found apologists for if not approvers of all this folly—are facts which indicate that socialistic ideas are widespread. They are leading thoughtful men to wonder if we are not upon the eve of a new era in public thought and sentiment; if there is not developing a view of the obligations of government as foreign to the theory of the Republic as the Republic at its beginning was foreign to the theory of Monarchy. There is much in the social and political drift of things to indicate that we are, indeed, approaching such an era of public thought; and not a few are wondering whither it will lead us.

If it be a fact, as we suspect, that socialistic ideas are spreading throughout the country, the reason is very clear; it rests upon abuses which we have lacked the skill or the courage to suppress. We have been too slow in admitting or too lax in executing the judgments which all

reasonable men confess to be sound, in matters of public and private right. We have allowed trusts to prey upon the people; we have allowed transportation companies to rob on the one hand and to corrupt politics on the other; we have allowed hyenas of speculation like Gould to pile up ill-gotten wealth; we have allowed Congress to make laws for special and private advantage; we have made class legislation fashionable; we have given rule into the hands of wealth and have degraded the political value of citizenship. It is not surprising that there is widespread dissatisfaction; and it is not surprising that at such a time as this it should find expression in absurd and even grotesque forms.

President Piexoto of Brazil has startled the civilized world, since his triumph over the late rebellion, by proposing to revive certain old imperial decrees by the terms of which the government is authorized to execute without the benefit of trial all persons, native or foreign, who either directly or indirectly have aided or abetted a revolt. England has protested against this revival on the ground that it may be applied to innocent British subjects; and it is universally condemned as a piece of monstrous cruelty. The proposition is instructive as illustrating the character of the Brazilian republic, which is, in fact, no republic at all, but a military despotism of the most arbitrary type. And so with all the so-called Spanish-American republics; they rest upon the will and force of a man or two backed by an army, and have no points of identity with our own system of government of the people, for the people and by the people, save the mere name. As yet no race save the Anglo-Saxon has demonstrated the capacity for stable and continuing self-government on a large plan; and it is this fact which makes thoughtful men pause when it is proposed to open the doors of American political fellowship to Cuba, to Mexico or to the Hawaiian Islands. In the last-named case there is perhaps less danger than in either of the others, due to the fact that the Hawaiian native population is a failing and fading race. In a century it has dwindled from three hundred thousand to less than fifty thousand, and another half century will witness its practical extinction.

San Jose Grange has been considering the question of education; and, as a result, has formally called upon the directors of the public schools of Santa Clara county to make manual training a feature of the school system. This demand is very significant. It comes, not from a convention of educators viewing the subject from the teachers' standpoint; nor from an association of the well-disposed rich, eager to do something for the "lower classes;" but from a body of plain, practical people whose interest in the schools lies wholly on the side of practical efficiency. It is a judgment of neither professionalism nor benevolence, but of common sense, growing out of a practical relationship to the subject. In Santa Clara county as elsewhere in California the public schools are liberally organized and supported, and in a one sense they are highly efficient; but in some mysterious way their tendency is to turn the thoughts of young people away from practical things. A boy graduating from the public schools, somehow, in four cases out of five, has imbibed a distinct and profound distaste for the sort of work which promises best for his future; and if allowed to go his own course he starts out to be lawyer, a doctor or a merchant, and ends by being a clerk, a salesman or a book-agent. And so with girls; instead of settling down in sweet content to the simple duties and simple pleasures of home, and later to suitable marriage, they sigh for "a career," and too often in seeking for it find disappointment, broken health and wretchedness. As we have said before, the fault lies largely with the system which establishes scholastic standards in the minds of students, and teaches, by inference at least, that industrial and practical affairs are trifling and unworthy, if not positively vulgar.

It is not surprising that the grangers of Santa Clara county are dissatisfied with a system which, while it has many merits, fills the minds of their children with false ideas and ambitions and leads them from rather than toward the genuine things of life. It is not surprising that they want their boys and girls, when they go to school, to gain not only the scholastic part of education, but that other sort which will help them to apply it to practical and profitable things.

The first State to vote this year will be Rhode Island—on April 4th, next Wednesday—and there is, in political circles, great interest in the result as a "straw" showing the course of the political wind. The two great parties are pretty evenly divided. In a total vote of 47,110 cast in 1893, the Democrats polled 22,015, the Republicans 21,830, and the Populists 3265. As a manufacturing State,

Rhode Island has suffered greatly from the paralysis of business caused by the tariff uncertainty, and is in danger of suffering still more by the enactment of the Wilson bill; and it is general expectation that the Protection sentiment will be reflected in a heavy Republican majority. The returns, however, may tell a different story.

The next following State election will be on June 6th in Oregon, where the situation is very much mixed. As between the two old parties Oregon is nominally Republican by about 3500 votes; but in the two latest State elections a Democrat with Populist proclivities has been elected Governor. The Populists have made great headway during the past two years, and it is generally expected that they will give the old parties a hard rub; and in the event of fusion between the Populists and Democrats (a very probable course) it is believed that they have a good chance of success. The importance of the result in a national sense lies in the fact that the legislature to be elected will choose a successor to Senator Dolph, whose term expires next March. The Governor of Oregon (Penneyer) and Judge Reuben P. Boise, Master of the State Grange, the one a Democrat and the other a Republican, have gone over to the Populists, each carrying with him a prodigious body of organized political force. In the event of a Democratic-Populist success, Penneyer is ticketed for Dolph's place in the Senate.

Concerning the Consignment of Dried Fruit.

FRESNO, March 24th, 1894.

TO THE EDITOR:—My business in connection with the State Fruit Exchange brings me so constantly in contact with those who are suffering from the effects of indiscriminate consignments of fruit to all sorts of people at the East who are willing to make advances on produce, that I cannot forbear warning your readers against the practice. I know full well that it is the necessity for ready money that leads to this practice, but all the same it is the direct road to the bankruptcy of the fruit interest. It makes no difference what glib talkers may induce growers to believe, nine-tenths of all goods consigned East in this way are bound to be slaughtered, for the reason that the consignee is often less able to hold them than the grower, and has no inducement to do so. This is not altogether true of the strongest houses exclusively in the dried fruit business, and who have a reputation to sustain with an established clientele, but no matter what houses are concerned the proper place for unsold California goods is in California. Under present conditions the best efforts of the best houses to sustain the market count for little or nothing, as they are utterly swamped by indiscriminate shipments to green fruit dealers and all sorts of people who know nothing of the trade, and have no interest in it except to make sales quick, for what they can get. Few people here have any means of distinguishing the reliable from the unreliable concerns, and the only safe way is to keep our goods until sold. Some of the concerns are utterly unscrupulous, and fairly rob the grower in many ways, and they are always liable to fail with grower's money in their hands, which cannot be paid.

The following extract from a letter just received from an Eastern friend is right to the point:

"An illustration has just come to my knowledge of the way things go when fruit is turned over to such people. — of —, whom you may remember that I spoke of, have just sold a lot of peaches there for 8 cents that were worth 9 cents; they are selling raisins at 3½ cents that we are getting steadily everywhere 3½ cents or more. They have just sold 80-90 prunes at 4½ delivered. Col. Hersey will tell you how much under the market that is. It is equal to 3½ cents for the four sizes on the Coast. It does seem as though something ought to be done to spread the information among people that this kind of men will do them up every time they get a chance."

The above is from a broker who is squarely endeavoring to serve his principals here by selling fruit for what the market warrants, and who has got out of patience with this kind of competition.

All this will stop when the growers organize themselves and keep their fruit on this side until sold, getting necessary advances here. The majority of our growers are now waking up, and are ready to serve their own interests in this way as fast as they learn how. There is a minority, of course, who can never be moved until the sheriff moves them, and a few of the sharp and sly who wish to see others organize that they may sell out under their umbrella. The way is for the progressive to organize, keep our information to ourselves, and turn over the sly and the stupid to the tender mercies of the speculator, and hope he may get rich out of them. A combination of the progressive to look out for themselves, and the speculator to look out for the others, might not be a very bad thing.

EDWARD F. ADAMS.

Reorganize the Fruit Union.

SAN FRANCISCO, CAL., March 22, 1894 }
Room 42, Flood Bld'g. }

TO THE EDITOR:—At the formation of the California Fruit Union, many were present who thought that an organization for fruit shipping by fruit-growers would be a good thing, and that they would form an association for that purpose. A little later traitors in the camp gave it away to the shippers. Ever since it has been fruit shipping by fruit-shippers. If you are right in your suggestion that the fruit-growers are older and wiser and more capable of

looking after their own affairs than they were when they allowed the California Fruit Union to be taken from them by the assistance of traitors, then I see no reason why the stockholders in the California Fruit Union may not now take the proper steps to rehabilitate the California Fruit Union. The directors decided to practically resign. That is all. The stockholders may meet on a proper call and elect a new board if they so please and carry the California Fruit Union on in a manner beneficial to fruit-growers. Surely the directors cannot force it out of existence without consulting the stockholders. If the stockholders think it cannot be made of any benefit to them, then they should let it die. I would merely suggest that all the conditions are very much more favorable for "fruit shipping by fruit-growers" than they were at the time of the organization of the California Fruit Union nine years ago.

A STOCKHOLDER.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, March 28, 1894, are from official sources, and are furnished by the U. S. Weather Bureau expressly for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total rainfall for the week.	Total seasonal rainfall to date.	Total seasonal rainfall last year to same date.	Average seasonal rainfall to date.	Maximum temperature for the week.	Minimum temperature for the week.
Yuma.....	2.16	1.36	3.07	94	38	
San Diego.....	4.68	8.85	8.73	72	40	
Los Angeles.....	6.60	26.00	16.69	82	38	
Keeler.....	1.81	3.55	2.50	78	36	
Fresno.....	6.15	10.76	7.22	78	38	
Sacramento.....	13.22	21.82	17.08	74	42	
San Francisco.....	T	16.10	20.53	21.55	66	44
Red Bluff.....	17.72	30.12	20.41	71	38	
Eureka.....	.02	48.12	38.73	38.94	60	36

Growing Crops.

From Thomas' Produce Report, March 23d.

There has been little rain during the past two weeks at any point from Stockton to San Diego, and the north winds have done much damage through all that country. They have been having nice rains around Salinas and the coast side of San Luis Obispo county, and all along the foothills from there down to San Bernardino.

Ventura, Los Angeles, Orange, San Diego counties, parts of Santa Barbara county and the east side of San Luis Obispo county are all suffering badly from lack of rain and from heavy drying winds.

Everything is all right up the Sacramento valley, and from there to the coast.

Cold weather all over the State has stopped growth, but no damaging frosts anywhere.

Fruit buds and trees look well, except in some localities where slight frost injuries are noted.

The west side of the San Joaquin has suffered badly. The east side looks about as promising as at our last advices.

In grain, the barley-growing sections are afflicted most. Down south some reports come that barley is already heading out.

The great cry, except up the Sacramento, is for more rain. Elsewhere much good will result from a good rain from one to two weeks hence.

Squash and Pumpkin Awards at the Midwinter Fair.

Messrs. Bruce Perley of Arizona, Wm. Perrin of San Francisco, N. H. Wilson of Merced, and W. Anderson of Canada, judges of squashes and pumpkins, have finished their work.

For pumpkins the awards were as follows: Sweet South-erns, H. C. Mann, Arizona, first premium; Yankees, Miller & Lux, Merced, first; Carey & Son, Monterey, second, and J. Booth, Sacramento, third; marrowfats, James Bardin, Monterey, first; sugars, Carey & Son, Monterey, first; Bardin's hybrid, C. Bardin, Monterey, first; Bardin's favorite, C. Bardin, Monterey, first; Cushaws, A. Silva, Arizona, first; sweet hybrids, G. H. Clayton, Arizona, first.

The awards for squashes were made as follows: Scabs, I. H. Thomas, Tulare, first premium; stocks, R. Begg, Goleta, first; mammoths, C. Bardin, Monterey, first; green Hubbards, C. Bardin, Monterey, first; green summers, Mrs. Moon, Guadalupe, first; yellow crookneck, J. Collins, San Miguel canyon, first; green Spanish, Hunter & Sons, Monterey, first; coyees, Hunter & Sons, Monterey, first; summer scallops, H. E. Boyes, Sonoma, first; turbans, C. B. Polhemus, Santa Clara, first; pilot beaks, Fenton & Son, Buena Vista, first; pintos, C. Bardin, first; hagers, R. Williamson, Pajaro, first; creams, T. Pugh, Fair View, first; Stockton gems, H. Bernhart, San Joaquin, first; California fields, J. Steward, Los Angeles, first; Hubbards, W. Allison, Pajaro, first; Spanish yellows, M. Gomez, Monterey, first; hard shells, J. Steward, Los Angeles, first.

The Apple Awards at the Midwinter Fair.

The report of the official judges of the competitive exhibit of apples at the Exposition has been made public. The task was a prodigious one, as there were 150 exhibits to examine. The committee avers that it was as fine a show of apples as has ever been made.

The awards were made under the new system of classification which prevailed in the recent orange competition. All fruits scaling 90 points and over were given a first premium; 80 points and under 90, second premium; 70 points and under 80, third premium. The following list shows the winners in the various classes or varieties. The figure 1 means that a first premium was taken, and the figure which appears to the right of the award number indicates how many points the fruit scaled over and above the limit for an award:

WHITE WINTER PEARMAINS.

Napa county—A. P. Evans, first premium. Sacramento—C. Foote, first; E. Greer, second. San Luis Obispo—E. A. Atwood, second premium and five points over. Monterey—O. Bulline, 2-5. Ventura—James T. Comstock, 2; J. W. Anderson, 2; G. S. Barnes, 2. San Diego, W. Ober, 2; J. R. Gladstone, 3-8. Tehama—G. H. Flournoy, 3-5; W. E. Conard, 3-5.

FALL PIPPINS.

Shasta county—J. S. Bass, 1. Napa—J. Jones, 2-6. Sacramento—C. Foote, 2-6. Monterey—Mr. Collins, 2.

YELLOW BELFLOWER.

Monterey—R. N. Windsor, 1. Napa—A. P. Evans, 1. San Diego—D. Price, 2-3.

WHITE BELFLOWER.

Monterey—J. McCoy, 2-5. Yolo—D. A. Jackson, 2-5. Ventura—Walker & Durrell, 3-5. San Luis Obispo—J. C. Baker, 3-5.

RHODE ISLAND GREENING.

Mendocino—Carl Purdy, 1-5; Carl Purdy, 1. Shasta—J. S. P. Biss, 1-2. San Diego—John Ryan, 1. Humboldt—B. L. Waite, 2-7.

BALDWIN.

Siskiyou—John Miller, 2-8. Sacramento—E. Green, 2-6. Monterey—A. G. Gland, 2-5. Humboldt—G. E. Steward, 3.

JONATHANS.

Ventura—T. R. Bird, 1-5. Santa Barbara—N. H. Woods, 1-5.

SMITH CIDDERS.

Napa—A. P. Evans, 2-8. San Diego—John Ryan, 2-7. San Luis Obispo—J. C. Baker, 2-5. Monterey—R. N. Windsor, 2; A. G. Gland, 2-5. Mrs. F. Schmidt, 3. Ventura—N. J. Bend, 2.

BEN DAVIS.

Shasta—J. S. P. Biss, 1-3; Herbert Biss, 1-2. Tehama—F. Houghton, 1; G. H. Flournoy, 1-2; Walker & Gurrell, 1-2 and 1; Judge T. Williams, 2-5. San Diego—Wm. Ober, 2-5. San Luis Obispo—Matt Hardie, 2; J. B. Gladstone, 2.

NORTHERN SPY.

Monterey—A. G. Gland, 1-3.

ROME BEAUTY.

San Diego—Chester Gunn, 1-5. Mendocino—Carl Purdy, 2-5.

WALLBRIDGE.

San Diego—John Lehr, 1-2.

NICKAJACK.

Ventura—T. Harwood, 1-2; Walker & Gurrell, 1-2 and 1; Judge T. Williams, 2-5. San Diego—Wm. Ober, 2-5. San Luis Obispo—Matt Hardie, 2; J. B. Gladstone, 2.

YELLOW NEWTOWN PIPPIN.

San Luis Obispo—J. J. Gregory, 1-5; J. C. Baker, 1-5; J. V. N. Young, 1. Monterey—Mr. Collins, 1-5; Taft & Son, 3-5. Ventura—E. P. Foster, 1; W. S. Riley, 2-8. Santa Cruz—Joseph Fowler, 2-8; A. G. Rose, 3-5; Diken & Sons, 3-5. San Benito—Exhibitor's name not known, 3-5. Monterey—A. G. Gland, 1-5.

HOOVER.

Napa—J. Jones, 1. San Luis Obispo—J. V. N. Young, 1-5. Monterey—A. G. Gland, 1-5.

ESOPUS SPITZENBERG.

Shasta—Herbert Bass, special award (over 100 points); G. Loeffer, 1. Tehama—G. H. Flournoy, 1-5; F. Houghton, 1; J. Edwards, 1; Mrs. Bertha Reid, 2. Napa—A. P. Evans, 1-5. Sacramento—C. Foote, 1. San Diego—Chester Gunn, 2. Siskiyou—Charles Hovenden, 3-5.

FLUSHING SPITZENBERG.

Mendocino—Carl Purdy, 1.

DOMINE.

Humboldt—James Hodge, 2-5; G. E. Stewart & Son, 1.

FALA WATER.

Tehama—G. H. Flournoy, 2. Shasta—J. V. P. Bass, 2.

PENNSYLVANIA RED STREAK.

Ventura—B. C. Harter, 1. San Benito—J. Jones, 2-8.

KENTUCKY RED STREAK.

San Luis Obispo—A. M. Hardie, 2.

EUREKA.

San Diego—M. D. Putnam, special award (over 100 points).

WHARTON.

Humboldt—A. Goodale, 2-5.

LANGFORD SEEDLING.

Ventura—T. R. Bird, 1.

MISSION PIPPIN.

Monterey—J. P. Swinding, 1.

VANDERVERE PIPPIN.

San Diego—Chester Gunn, 1.

GRINDSTONE.

Monterey—Mr. Shepard, 1.

WINESAP.

Tehama—G. H. Flournoy, 1-5; Jackson Eby, 1-5. Placer—J. H. Runkel, 1. Sacramento—E. Greer, 2-8. San Diego—W. I. Prout, 2-8. Ventura—Judge B. T. Williams, 2-5. Humboldt—F. W. Oliver, 3.

LAWVER.

San Diego—Chester Gunn, 1. Shasta—H. Bass, 3-5.

LIMBERTWIG.

Santa Barbara—N. H. Wood, 1. San Diego—W. I. Prout, 2-8.

SHEEPNOSE.

Mendocino—Carl Purdy, 2. Napa—A. P. Evans, 2-5.

WESTFIELD.

Napa—A. P. Evans, 1.

LADY WASHINGTON.

Ventura—J. Smith Briggs, 3.

POOR MAN'S FRIEND.

Sacramento—E. Greer, 3. Monterey—R. N. Windsor, 1.

The committee on apples was Prof. George Husmann of Napa, Richard Jones of Colusa, Frank Dalton of San Francisco, and Mr. Branch of southern California.

Disaster to Eastern Fruit Crops.

On page 248 of this issue will be found reports of killing weather at many points at the East and South. Later information is even worse than the first telegrams. As the matter is of such wide significance here, we present the following additional dispatches:

WASHINGTON, March 27.—The Weather Bureau, in its weekly snow chart issued, says: North Dakota and north-west Minnesota are covered with nearly a foot of snow, and over portions of upper Michigan there is more than a foot and a half of snow reported. While the southern limit of area extends southward into Ohio and western Pennsylvania there is but little snow on the ground east of lower Michigan, the greatest depth over the region named being three inches at Pittsburg.

The last half of March has been characterized by the most remarkable temperature, extremes occurring that have never been recorded since the establishment of the Weather Bureau.

OMAHA, March 27.—Another big storm, coming from the northwest, broke on this section this evening. The wind is strong and cold.

LAWRENCE (Kas.), March 27.—Investigation by Professor W. C. Stevens of the Botanical Department of the State University shows that the cold snap has killed the peaches and most of the pears. Cherries are badly injured. Early raspberries were destroyed, but there will be a good crop of late ones. Blackberries and strawberries were not seriously damaged. Apples were not far enough along to be much injured.

MADISON (Ind.), March 27.—Peaches in southern Indiana were entirely killed before the last cold spell. It killed cherries, apples, blackberries and early vegetables.

NASHVILLE (Ill.), March 27.—It is now certain that all the small fruit in this vicinity is killed, and the wheat has been so badly injured that not more than a half crop can be expected.

GREENVILLE (Miss.), March 27.—There was a heavy frost this morning. All vegetation is killed. The fruit crop will be a failure.

CHATTANOOGA, March 27.—The extreme cold weather of the past few days will cost truck farmers and fruit-raisers in Hamilton county alone \$100,000. It will take \$500,000 to cover all the damage to fruit, early vegetables, wheat and oats in the section of northern Georgia, northern Alabama and lower east Tennessee immediately contiguous to Chattanooga.

GUTHRIE (Ok. T.), March 27.—Peach, pear, apricot and plum trees have been in bloom for a week, and the unusual cold weather for the past 48 hours has frozen the buds and ruined the fruit crop of most of the Territory.

DEALIA (Mo.), March 27.—The weather for the past three days has ruined fruit in central Missouri.

DALLAS (Tex.), March 27.—The reports from the fruit crop are conflicting, but it is conceded it has been terribly injured, if not wholly wiped out.

PITTSBURG (Pa.), March 27.—The blizzard which struck western Pennsylvania yesterday and passed eastward last night has ruined vegetables, peaches and early cherries, and great damage has been done to pears, apples, apricots and plums.

NEW YORK, March 27.—Reports from southeastern New York show great damage to fruit and vegetables as a result of the cold wave. Along the Atlantic coast railway lines the damage is estimated at \$1,000,000. In Delaware it is believed the peach crop is totally ruined and prospects of other fruits destroyed. In the grape-growing regions of western New York the buds have been destroyed, and vast losses are feared in consequence.

OTTUMWA, Iowa, March 28.—It is snowing furiously; two inches of snow has fallen and it is getting colder. The small fruits are killed.

FORT SCOTT, Kan., March 28.—The blizzard from the northwest reached this section this morning, the temperature dropping to 20 above. The fruits left by the last snap will be killed by this.

THE plantation of sugar-cane on Union Island by the U. S. Department of Agriculture was successfully made last week, the seed cane having been purchased by the government from J. D. Boyd of Lone Star, Fresno county. Mr. Boyd secured a start of Louisiana cane two or three years ago, and has grown it experimentally between the vines in his vineyard. This situation gave a good growth of cane, though the air and soil seemed rather dry to fully suit the plant. Mr. Boyd contemplated removing his cane to Kings river bottom until he found the government needed seed to begin its work on the tule lands. There is another lot of cane soon to arrive from the government sugar station in Florida, and Dr. H. W. Wiley, chief of the Division of Chemistry, expects to arrive in California to formally inaugurate the work here about April 10th.

ABOUT 1000 carloads of oranges were shipped from Riverside up to March 19. The daily shipments aggregate twenty carloads, with increased orders coming in every day. The fruit exchanges have raised the price of choice fruit to \$1.50 per box and seedlings to \$1.15 per box. The price of the best, or fancy, brands has not been raised, but as the demand is rapidly increasing the figures on these will be put up shortly.

FLORIST AND GARDENER.

The Flower Carnival at Santa Barbara.

The Flower Festival Association announces that the Festival of 1894 will take place on Wednesday, Thursday and Friday, the 25th, 26th and 27th days of April next, closing with the grand festival ball on the evening of Friday, the 27th.

Already the fame of the Santa Barbara Flower Festival has spread far and wide and gained renown the world over for its wondrous display of lovely flowers, combined with rare taste in their use. Little thought the bold navigator, Cabrillo, whose resting place is enshrined in mystery on San Miguel Island, when, three centuries ago, he raised the banner of Spain on this coast, that the day would come when the choicest products of his native land would thrive better on these apparently inhospitable shores than in his own sunny clime. Not only is the flora of Spain transplanted to this favored locality, but side by side with the native flora is also seen that of many other countries, and constitutes one of the wonders of this genial climate. From the moist, low latitudes of New Zealand, and from the arid plateaus of Arabia and Sonora, from the basin of the Amazon and from that of the Volga, plants are to be seen in our gardens, and so well do they thrive here that they seem to feel bound to reward the care bestowed upon them by an unusual profusion of blooming, so much so that many of them bear flowers and fruits twice a year, while others assume, actually, an ever-flowering character, e. g., the orange tree and the sweet-scented Mediterranean broom, which in other countries have well-defined periods of blooming. Here heliotrope perfumes the air in January as in August, and the sweet jasmine adorns the verandas with its fragrant white star. Towering candelabra-like Norfolk Island pines carry on their tops huge cones, and the silver tree from the Cape bears its cones, small, but shining like metal in the sun. Callas, geraniums of all shades, torch-like aloes and tritons enliven the months the calendar calls winter, and in every corner of our gardens humble violets and mignonettes assert their presence by their powerful fragrance; all about town the feathery plumes of the Cocos palm and the spreading fronds of the sea-forthia are lifting their heads among the surrounding trees.

On the mountains and foothills and in the canyons, one is lost in admiration of the beauty of the native flora, where wild flowers of every hue and color gladden the eye after the welcome rains have quickened the seeds. Spreading over the hills and in the canyons are groves of noble live oaks and great sycamores with their grotesque trunks.

Especially attractive, as coloring the landscape, is the soft yellow hue of the wild mustard, covering the rolling foothills, with here and there fields of eschscholtzia, while in the background the mountain sides are tinged with the light blue flowering of the Ceanothus or wild lilac. The Mariposa lilies and the Matilija poppies, each in their season, are found flowering in profusion.

The truce which was signed last year at the termination of the Battle of Flowers has been annulled, and the participants who then fought so valiantly are ready and eager to renew the conflict with each other and with all newcomers who may join their ranks. From hundreds of carriages, hidden in bloom, the missiles of the floral war were flying thick and fast until the wide Corso was carpeted with fragrant crushed flowers. To describe last year's beautiful equipages, in all their perfection of detail, would take so much space that it must suffice to mention them only in a general way. Some idea will have been given of their wealth and profusion when it is stated that many baskets full of flowers were used on a single carriage. One equipage represented a Spanish market wagon covered with wild brocade of the hue of Parma violets, and drawn by white mules with trappings of white and yellow. The occupants wore the Spanish costumes carried out in the same colors. Another turnout was a high tea cart covered with marguerites, drawn and outdriven by fine white horses with pink rose collars and ribbon harness. And so on through the long procession were beautiful color schemes carried out with every variety of wild and cultivated flowers.

As the sun set behind the purple mountain, the combatants, weary with their long contest, retired in disarray, but with banners flying and triumph gleaming from every eye.

To close the festival a grand ball was given, at which the flowers again played the principal part, this time impersonated by young ladies and children in a graceful and swinging dance. Troupes of small boys, dressed as butterflies, hovered around small damsels representing fragrant roses, and claimed, with the bees, the first right to their smiles. The ball room, with its sparkling festoons of innumerable electric lights and the soft gray moss of the live oak draping the pillars and the arches, seemed a dream of fairy-land.

The purpose of the organization called the Flower Festival Association of Santa Barbara is to cultivate the love of flowers and floriculture and to make Santa Barbara attractive by its refining influences. All revenues, whether coming from subscriptions or from sales of tickets, are used in making the festival as beautiful and effective as possible.

The usual competitive prizes will be offered to stimulate emulation, and the association will endeavor to make the Floral Festival of Santa Barbara so delightful that it will always be a pleasant memory to all who have witnessed it.

An additional attraction of this year's festival will be an evening illumination of the Corso and Tribunes, at which the procession of decorated floats, carriages, carts and equipages of every description, hung with Chinese lanterns and colored lamps, will be reviewed on the battle-ground

of the day's conflict. The illuminated parade will be one of the most entertaining features of the festival.

FLOWER FESTIVAL PROGRAMME FOR 1894.

Wednesday, April 25th—Exhibition of fruits and flowers in the pavilion afternoon and evening and forenoon of Thursday, under the auspices of the Floricultural and Horticultural Associations. The display of flowers, and particularly of roses, is always wonderfully attractive.

Thursday P. M., April 26th—Grand floral procession of decorated floats, carriages, carts, equestrians, etc., to be immediately followed by the Battle de Fleurs and the distribution of prizes.

Thursday evening, April 26th—Grand illumination of the Corso and Tribunes and review of the floral procession, on which occasion the floats, carriages, carts and equipages of every description, decorated and illuminated, will again take part.

Friday evening, April 27th—Grand flower festival ball at the pavilion. The famous "Dance of the Flowers" will include some new and very beautiful features. The pavilion itself will be transformed into a bit of fairy-land.

Interesting Climbers.

The most striking climbers in California gardens are bougainvilleas and bignonias. They bloom through the winter months, bewildering Eastern visitors with their size and the wonderful profusion and brilliancy of their flowers.

Bougainvillea spectabilis is of more robust growth than B. glabra. It sends out strong branches in every direction, with thorns an inch long. The foliage is slightly fuzzy with a pinkish tinge on the young branches and the under side of the leaves. It blooms more profusely in the fall and winter months than at any other season. The floral bracts are larger than those of B. glabra and of a more intense magenta—that killing color which has been so fashionable the past season, and which will bear contrast with scarcely anything else. It requires a great deal of room, and should be severely pruned every year to keep it within bounds.

B. glabra is much the prettier of the two climbers. The foliage is a lustrous light green and very handsome. The long branches which are wreathed with the brilliant flowers nearly every month of the year are very beautiful for decorating, as they can be cut from three to five feet long, a solid mass of color from two to three feet in circumference, and are very effective. It is a beautiful climber; and if the flowers could only be persuaded to change their hue to that of a peach-blossom pink, they would simply be exquisite.

Bignonias are of all climbers the most satisfactory. They all have beautiful foliage, and the color of their flowers contrasts well with those of other plants.

Among the most gorgeous is B. venusta, which blooms from January to April. It bears flowers at the axils of the leaves in splendid clusters of buds and blossoms. Its long branches are often wreathed half their entire length with waxy, orange-salmon flowers, in shape resembling those of the coral honeysuckle. The individual flowers measure three inches in length, and the contrast between the foliage and the flowers is very beautiful. For decoration, this vine is invaluable, the color being fine and the blooms keeping well. I would recommend it as one of the most suitable vines for the veranda or house; it is easily managed.

Vines of pliable, woody growth like bignonias can be trimmed without destroying the beauty of the entire plant. They can be drawn away with care without pulling down masses of foliage as with passifloras, and can thus be kept within bounds. Passifloras with their rampant growth become infested with insects and filled with the dead foliage, and generally have to be cut away after three years if planted against a house. Bignonias and vines of like character can be trimmed every season and grow in the same place for years.

B. magnifica has very handsome shining foliage and large gloxinia-shaped violet flowers with dark pencillings in the throat. Its habit of growth is very graceful, the foliage and branches being entirely different from other bignonias. Though not as brilliant as the other varieties, the large flowers are of an exquisite color, and it is a general favorite, though not at all common.

The most wonderful and rampant grower of all is B. siderifolia, with light-colored stems and pretty foliage and gloxinia-shaped flowers slightly flattened at the tube, a creamy yellow faintly shaded with darker yellow at the edges of the flower. The buds are round and resemble velvet. The flowers are in spikes, each spike bearing about seven buds and blossoms. It blooms profusely all the summer and autumn. The flowers are pretty for bouquets, but not for decoration. Its growth is simply marvelous. It is not uncommon for the branches to grow 50 feet in a season. I should never advise planting it with other vines. It is too ambitious. It distances everything else, and would in time choke out others. Its habit is very graceful; and though not as brilliant as venusta, no collection is complete without it.

B. tweediana has very small foliage. It climbs by little tendrils which attach themselves to wood, so that the vine will cover any flat surface in a short time. It grows rapidly, and is particularly valuable for covering rough or unsightly buildings or old trees. The branches hang in graceful festoons, and the flowers, which are also gloxinia-shaped, are of a rich canary-yellow, and so profuse as to seem a solid mass of yellow at a little distance.

Tecoma jasminoides (which is also a bignonia) is a very popular and beautiful climber. The foliage is clean and shining. The flowers are white or pink (there are two varieties) with a maroon throat, and grow in clusters. They are trumpet-shaped and stand out well from the foliage. The handsomest specimens of this climber I have ever seen grow on the Arlington Hotel at Santa Barbara, and are the delight of every passer-by.

T. mackenni, a variety of recent introduction, is of very

rapid growth, with pretty foliage somewhat resembling T. capensis, though its habit is entirely different. Its flowers are the counterpart of B. magnifica except in color, being a charming old pink, penciled with darker pink. Thus far it has proved a very shy bloomer. If it could be made to bloom well, it would be one of the handsomest of climbers.

C. felicefolium is beautiful the entire year, whether it blooms or not. The young foliage is shaded brown, and the leaves shine as if varnished. The vine is always clean and fresh. It grows very rapidly, and always looks healthy and vigorous. The flowers are small, light yellow with brown throat. They grow in clusters and are very dainty. They are so profuse that the entire vine in early spring and summer, when it comes into bloom, looks as if an airy veil of yellow had been thrown over it. Nothing could be more picturesque, and no climber is more admired.

We are very apt to forget that a large vine which looks healthy and grows luxuriantly could ever suffer for want of proper nourishment, yet this is often the case. Because plants grow and seem to take care of themselves so well, they are neglected, and we suddenly discover that insects have taken possession of them, or that they are not growing well. Twice a year the soil should be well mulched, and a month should never pass without a thorough cultivation. When irrigated, the water should go deep into the ground that the roots may seek moisture from below rather than the surface. Once a year they should be trimmed and all the old branches removed, and all insects which may have come through neglect should be gotten rid of. If this is done, the climbers above enumerated will live for years and repay all care given them.—Mrs. T. B. Shepherd in Rural Californian.

Growing Sweet Potato Plants.

We recently gave the experience in growing sweet potatoes which Judge Stout of North Yakima described for the Ranch. In that account no specific mention was made of starting the plants. The following paragraph covers that subject:

The first thing to do is to make a hotbed. Everybody now-a-days knows how to do that. When it is ready and sufficiently warmed up, lay in the potatoes about two inches apart and cover with four inches of soil. I prefer to split the potatoes lengthwise and lay them flat side down. If the round side is down and the sprouts start from beneath, they will pull off less easily and may break.

What is the object of planting so deeply as you recommend? It is done to give a good long stem to the plants.

How long before the sprouts will begin growing? Sweet potato sprouts start slowly. If there is any particular reason for hastening them it is a good idea to spread over the soil in which the potatoes are planted a layer of coarse loose manure three or four inches deep. Once the sprouts are started, which will be in four or five days, remove this covering. In this way, you understand, the warmth is retained and sprouting is hastened. If the hotbed is under glass the manure covering will not be required.

How long before the plants will be large enough to transplant? In three or four weeks they will be long enough to pull. To do this place the left hand flat upon the soil and with the other hand, palm up, take the plants between the fingers and pull. In this way the seed potato is undisturbed and will continue to throw up sprouts for a second or third pulling.

When should the hotbed be prepared? In this latitude (Washington) from middle to last of March. As it is best to delay planting out until about the 10th of May, in ordinary seasons, you see there will be ample time to grow good-sized plants even if the sprouting is not begun before the first of April.

In setting the plants in the ridges how deep do you recommend putting them? I prefer to set them in rather deeply—quite well up to the bud.

About how many plants will a bushel of sweet potatoes produce? I can't tell very accurately, but I should think sufficient for two acres or over.

FORESTRY.

Eucalyptus for Special Conditions.

TO THE EDITOR:—I send you a little pamphlet on tree culture by Walter Gill, F. L. S., F. R. H. S., Conservator of Forests in South Australia, which contains notes of special value to us on account of the similarity of conditions in California to those under his observation. Readers must remember, however, that the seasons in Australia are the opposite of ours; the months for planting mentioned by Mr. Gill must, therefore, be reversed to apply to California.

Mr. Gill, and a number of other Australian tree planters, have promised to send me letters from time to time on the eucalyptus, with permission to publish. This I will do if sufficient interest is manifested in the subject.

There is undoubtedly a large field in California, especially in the coast and southern counties, for the economic planting of species of eucalyptus other than the blue gum, *E. globulus*. The three things lacking to open this field to enterprise are:

- 1st. Lack of reliable information on the value of different species.
 - 2d. Lack of information on soil, climate and condition requisite for success with different species.
 - 3d. Difficulty of obtaining seeds or plants true to name and reliable, after a species has been decided on.
- The work upon which I am now engaged will, I hope, at least partially remedy these difficulties.

In reply to a recent question of mine, Baron F. Von

Mueller writes as follows: "The two largest and best eucalyptus are *E. rostrata* and *E. microtheca*. Seeds of these, correct to name, you could in Melbourne obtain from Messrs. Law, Somner & Co., and in Paris from Messrs. Vilmorin, Andrieux & Co."

From Kew Gardens a memorandum has been sent me, stating that the species of eucalyptus that have withstood the English climate, supporting cold to the extent of 10° over zero, F., are: *Eucalyptus urnigera*, *E. coccifera*, *E. viminalis* and *E. gunnii*. Other varieties, including *E. globulus*, grow freely in the channel islands, but not in England.

We have in this State now *E. postrata* for deserts and heats—that is, extreme heats—and *E. viminalis* for extreme cold. I hope soon to try the others. We have indeed *E. gunnii*, but, as far as my own knowledge goes, it is as yet only a few years old—that is, I know only about those I introduced while chairman of the State Board of Forestry.

ABBOT KINNEY.

Lamanda Park, March 20, 1894.

[Mr. Gill's pamphlet is very interesting, but, as it is now past the planting season, it will be better to present it to our readers in the autumn. We shall be glad to have the correspondence to which Mr. Kinney alludes.—ED.]

THE DAIRY.

The Average Cow and the Average Farmer.

H. C. Adams, of Wisconsin, at the Minnesota Dairywomen's Convention.

There will be more thinking and less working done in this country during the coming year than for the last 36 years. For the last six months we have pulled a financial cat by the tail with no perceptible effect except a loss of credit. Amid the wrecks of banks and the crash of business houses, the American farmer has maintained a tolerable serenity. He is not a pauper, although he has been told so a million times by men who would like to be paid for telling him. The burden of his life has been work. To-day it is the blessing of his life that he can work, while tens of thousands of idle men are supported by public charity, and while hundreds of thousands from closed mines and silent forests and fireless factories stare winter and want in the face. As a rule, he is sure of his home, sure of his fuel, sure of his food. The time has come when this is worth something to the men who labor.

The farmer is generally charged with being a grumbler. He is. He has a right to be sometimes. Any American citizen breathes in a right to kick with every breath of American air. But an animal, a man or a class with heels in the air all the time cannot do good business.

"Laugh, and the world laughs with you;
Weep, and you weep alone"

Is clean-cut wisdom in the melody of rhyme. The average farmer ought to smile. An agricultural meeting would better chase the rainbows of unbounded hope than become a gloom factory to weave agricultural woes in the web of dyspeptic fancies. It is a good thing to hunt around for our blessings and to be on terms of recognition with those which are abundantly with us. The average farmer has reason for cheerfulness because the things that he buys are cheaper than they have been for over 30 years. Hogs bring a pretty fair price. Good steers are not low; butter is high; cheese pays; eggs would hatch fortunes if he had enough; oats will pay expenses and more in my State, and wheat can be given away almost anywhere. Seriously, the low price of wheat is a benefit to the average farmer, if he can live through it and learn the folly of raising more than he is compelled to. You may have a soil up here in Minnesota that is a hundred feet deep where you can raise wheat crops for 30 years in succession without starving the soil and the fellow who raises it; but, if so, it is the only place on the planet of that kind that I know of. It may be and probably is different in some parts of Minnesota, but in our State the only reason for extensive wheat raising upon the average farm is unmitigated laziness. It is a cheap and easy crop—leaves all of the winter and most of the summer open for other business and does not compel the man who raises it to do very much thinking until his crops get so short that he must. The average farmer has a right to be blue about one thing—that he is an average farmer. But he has no right to be blue about it long, because he can change it in nine cases out of ten if he will. If somebody with miraculous power could take the brain of every average farmer in the land, hold it up in front of him, turn on an electric light which would show all its possibilities, we would soon have an average that would be worth reaching. When an average farmer says that he cannot know enough to keep accounts, first-class stock, and get anything out of an agricultural paper, he does something which in politics is called by the opposition press lying, but in his case it is simply an underestimate of his own powers. Thousands of men break into Congress, Legislatures, the profession of the law, who have not as much native talent as the average farmer, with the single exception that they have faith in themselves. I have seen farmers 60 years old grow more mentally in three years and improve their business methods more than in the other 60, under the impulse of some other influence which made them "know themselves." The greatest difference, or rather the most common difference, in men is in will rather than mental capacity. It is a common thing to place the burdens of the world on the average farmer, and scrape all the skies of rhetoric in illuminating the miseries heaped upon him by the other classes. He carries his share—no more. So does the shoemaker, the minister, the editor, the coal-heaver, the board of trade man, the railroad engineer, the men who man ships, and women everywhere. I have seen

farmers whose only consoling thought in life seemed to be that other classes are robbing them night and day, and I have seen other farmers who thanked God for what they had, and tried like men to make it more. The average farmer doesn't make money enough, he doesn't have fun enough, he lacks faith in himself. He will never get justice at the bar of public opinion by unjust attacks on other interests. He will command the respect of every class when he does the best things of which he is capable, and when he does that his average will have more golden hues and his satisfaction will bury his discontents.

The average cow of to-day is made wrong. Her head is too big and her udder too small; her shoulders are too wide and her hips too narrow; her skin is too hard and her butter too soft; she has too much tail and tallow and too little capacity to make milk and butter; her ancestry is seldom either poor or respectable. She beats the farmers of this country out of more money than the sugar trust, the railroads and the patent-medicine men combined. She can do more damage in proportion to her sense than anything else on earth except an average dog which nobody owns. She has two intrinsically good qualities—appetite and constitutional vigor. They will do to graft upon, but immediate dependence upon them for daily bread will make a man earn it in some other way. The average cow is an innocent nuisance. She is the workmanship of the average farmer. She has not been bred right; she has not been fed right; she has not been handled or cared for as should be, and she gets even in wholesale robbery of the man who made her what she is. I do not know the average cow of Minnesota, and I do not care to if she bears the same character that her sister does across the line in Wisconsin. Over there she is better than she was, but even now, with dairy literature flooding the State, Farmers' Institutes everywhere, and the tremendous stirring of agricultural thought from unnumbered sources, she fools away a whole year in making 125 pounds of butter, and the man who waits on her for 365 days gets most of his profit in a richer soil and the pleasure of milking. There are 700,000 in my State. If 250,000 would die this minute, as they ought to, the State would be better off. "But," some listening farmer says, "what shall I do if my cows are all average?" Sell them to some man you don't like, and if you like everybody, eat as many as you can and sell the rest to the butcher; and if you have not the courage to do any of these things, grade up your stock with the introduction of new blood. The latter remedy is too slow, but it is effective. In my State it raised the average butter production per cow from 60 pounds in 1860 to 125 pounds in 1890. Farmers complain that they cannot afford to buy good stock. Does it pay to raise corn with a hoe, harvest grain with a sickle or cut wood with a dull ax? Half the men in Minnesota who think they cannot afford a first-class dairy bull spend enough in tobacco in a year to buy one. The best cow is the cow which makes the most butter fat out of a dollar's worth of feed, without injury to her vital force, and can transmit to her offspring her own excellence. Of all men, a poor man cannot afford a poor cow. The average cow flattens his pocket-book and his ambition.

The possessor of wealth is the only man who can afford the society of the average cow. When I talk about average cows I do not refer to natives alone. There are cows in all breeds that pull down averages as if they had a grudge against them. The Jersey is a butter cow, but you can pick out of almost every herd of this breed cows that kill profits. The Holsteins are noted for milk, but there is a fair per cent of them which give only milk and water, and not much of that. A good portion of the Devons have been so warped from dairy purposes that the average cow can look down on them. The Shorthorns have played smash with dairy averages by the surprising ambition of their owners to make 3 per cent meat and tallow instead of 20 per cent butter. The stamp of breed does not insure entry in the golden book of profit. There are black sheep in all flocks and butterless cows in all breeds. Nevertheless, the breeds which have been handled and bred for generations toward the milk and butter purpose give us the most certain leverage to raise the dairy cows of the country to respectable yields.

The native cow has been terribly mauled by the dairy writers and talkers of the last decade, in spite of the popular saying of the same gentlemen that we should treat a cow as we would a lady. As a rule, she does not pay as a cow should. She has plenty of defenders. Almost every farmer has one or more specimens, and a man is very apt to be in favor of what he owns. So I am not compelled to help her out on the ground of sympathy. I sympathize more with the men who blindly milk cows that do not pay. It is contended that we should stick to the native because of her constitution. Steers have good constitutions, but they are not useful in the dairy. You cannot sell a cow's constitution unless the constitutional power to manufacture milk has been developed. The native cow is commended as being hardy. There was never a first-class dairy cow on earth that was hardy. Is it any advantage to have a cow that can live out in a Minnesota blizzard for three days and give a teacup of milk a day? Occasionally a native cow is found with a splendid dairy performance. Can anybody prophesy what her heifer calves will make if she is bred to native stock? The native is a mixture of warring elements of blood. The well-bred thoroughbred is a union of parallel, potent forces, directed to the one purpose of making the most valuable dairy product out of a dollar's worth of feed and care. We are told that fancy farmers can pamper their cows and break down their constitutions, but the common farmer cannot fuss so much and get so far away from nature. Is it fussing to get a good cow, put her in a warm barn, groom her, give her the best rations possible and work her for all she is worth for the sake of profits? If it is, what the dairy world needs is more fussing. The modern dairy cow in her best form is a long ways from cow nature as it existed in the times of Abraham, no doubt. She is highly artificial. The more artificial she is the better she is. The men who worry and theorize about our getting away from nature, in order to be consistent, never should milk; they should leave that to the calves. We put

shoes on horses and clothes on children, and slap nature in the face every time we shave. The dairy cow has been made over by the hand and brain of man for a perfectly natural purpose—making money. And if she does sometimes have the milk fever and many other diseases unknown to wild cattle, she to-day possesses greater vital force than her unpampered ancestors, who were supposed to be hardy, but all of whom would have died in a week if compelled to exert the vital force necessary to elaborate in their organism milk enough to make 14 pounds of butter in that time. We have not destroyed vital forces; we have changed their currents.

The average cow and the average farmer are being driven from their fields—to better ones. Inherited notions are giving way to the logic of facts. An old farmer in my State says: "Feed makes the cow." Prof. Henry, at the experiment station, says nothing, and feeds a common cow, a grade Jersey and a thoroughbred Jersey a 17-cent ration, each the same, in the same barn, with the same care, for a week, and from the common cow he gets one pound of butter, from the grade one pound and five ounces, and from the thoroughbred one pound and fifteen ounces.

A farmer in New Jersey by grading, without special change of feed, raised his butter average in a large herd, in ten years, from 125 pounds to 275 pounds.

I test the cows in my own herd and find them ranging from six to seventeen pounds of butter per week on the same feed. Does feed make the cow? Good blood lies at the foundation of dairy success. The average farmer has enough of it when electrified by thought; his cows do not. Outside of his often thoughtless disregard of his own business interests, the average farmer commands both our love and our respect. He has made these Western States. Through his modest and sometimes unnoticed toil have come railroads and schools and villages and cities rich in beauty and commercial life, and in his quiet country home he has bred the men who to-day control the business and political destinies of this nation. We may criticize his business methods in order to improve them, but we never forget that the average farmer is more than an average good citizen and more than an average patriot. And in the great contest which is to come between the socialist, anarchist and communistic enemies of all government and this government, he will be the rock upon which this government shall stand.

TRACK AND HARM.

Stay In It Wisely.

The *Breeders' Gazette* does not think it is a good plan to go altogether out of the horse business. It says the man who watches his neighbor and his neighbor's neighbor rush their horses off to market and hears them declare that their mares will not be bred this season, all because horses are low in price, has studied the history of stock or grain production to little advantage if he does not set about to cull his mares and secure the services of the best stallions that are available. It is easy to go with the crowd. A rush to unload makes a current that sweeps along with it all but the strongest. Nothing is so contagious as a panic. The thoughtful man who gives his attention to the material affairs of the universe needs no prophet come from the dead to assure him that there is a future for horse-breeding. The croaker sits and sings about the coming of a time when electricity will make horseflesh lag superfluous upon the stage of action. Old men have heard such fairy tales before. The advent of the railroads, according to the same genius of prophet, were to have utterly wiped out horse-breeding. As a matter of fact, with their development of new territory they created more demand for horses in a day than a decade would have brought about without railroads.

Electricity has supplanted the cheapest and least useful class of horses—except the cayuse—and from that fact these "singing birds" foresee the total destruction of the horse-breeding industry. It may come; we do not make bold to set limits to the progress of science, but men and brethren, the 1895 crop of colts will be raised, broken and marketed a long time before electricity puts an end to the demand for horses, so that there is no occasion for immediate alarm and no occasion for neglecting to mate the mares with the highest-class stallions within reach. Sufficient for the day is its evil. Let us not be crossing imaginary bridges. It is time to give over the raising of street-car horses, anyhow. The thrifty breeder should aim at a higher market and let his misfits go for teams. Because the market for mules little bigger than burros and for nondescript horses which fail of filling a distinct want in any other direction has been weakened by the invention of the cable and trolley street-car systems there is no reason for giving over the breeding of drafters, gentlemen's drivers, high-steppers, carriage horses and saddlers. Let us have an end of nonsense.

Beyond the shadow of a doubt horse-breeding in America has caught the upward trend. In times past anything that wore hide and hoofs, if imported or pedigreed, was good enough to breed to. They do things differently now. They have learned a thing or two. The lessons of the market-place are stern and lasting. Weight without quality and shape without action go begging for bids. Never was there a time when the men who remain in the horse business should look more critically to the character of the sires they patronize. In many localities they can have the services of acceptable sires by the payment of the price, and it will not be a high price, either. In other places it will become necessary to bring in a better class of stallions. Not many men care to invest large money in stallions at this time. Why not imitate the thrifty Scot and hire stallions from the importers and breeders? The plan of stallion-hiring is responsible for the marvelous improvement in the draft stock of Scotland. Let the owner

of the stallion be at the risk of the horse; organize a company and pledge a given number of mares and then set about securing a stallion which will be sent to that community for the season; let the owner send his stallion, and let the patrons bring their mares and pay their fees, and thus get the services of a high-class horse without risk or extra expense to themselves. Why cannot this plan be put in operation on this side? There are stallions in the stables of importers which should now be on the stand. Why not hire their services if you are not prepared to buy them outright? There is a profit in this plan for the stallion owners and much greater profits for the mare owners.

Every fact connected with the industry of horse-breeding, every market report, every thoughtful man's judgment, indicate that the demand of the hour is for skillful mating of the better class of brood mares to stallions of outstanding superiority.

Sport Without Gambling.

An experiment of much interest and moment to trotting-horse breeders is to be tried this season at Hartford, Conn. In the Nutmeg State a very stringent anti-pool-selling law was passed last year, the chief result of which was to cause the abandonment of the great trotting meeting which has been held annually at Hartford for so long a time. It was thought that by 1894 some construction of the law could be had that would make it safe to hold a trotting meeting with the usual betting accompaniment, but this phase of the matter has not eventuated satisfactorily, and now it is proposed to try the experiment of a great trotting meeting without betting. Naturally the announcement has occasioned much comment. The almost universal opinion of those familiar with trotting is that speculation on the result is an inevitable and necessary feature of such meetings, but, viewed from some standpoints, this contention is not by any means an invulnerable one. The facts are that at State and county fairs trotting races are given every year at which betting of every sort is tabooed, and yet it is not claimed that these races are poorly attended or that they lose money.

It would be a great thing for trotting—the best thing that could possibly happen it—if a big meeting without betting could be given, without the added attraction of a fair, and show a balance on the right side of the ledger. That this is possible of accomplishment in a town like Hartford is not by any means remarkable, but it will never be done in large cities like Chicago and New York. Everybody who has not a financial interest in keeping it alive must admit that gambling is the bane of racing. It is true that among the trotters it has not yet grown to be a positive evil, as on the running turf, for in the latter case there is absolutely nothing to uphold the so-called sport except the gambling concessions, and if they were taken away the whole fabric of running racing would collapse in less than a week. It is only for the gambling attendant thereon that the continuous running meetings are given, and winter racing, the curse of horseflesh, has no other possible excuse or reason for existence. The trotter is the horse of the gentleman. He is a useful animal for other purposes than racing, and if he could be freed from gambling he would be a still greater object of national pride. Baseball, a truly national sport, does not need gambling attachments—in fact, gets along better without—and trotting should be raised to the same level.

What Two Men Did with Government Land.

April 19, 1887, Samuel Lynn and his son James came to the U. S. Land Office in this city and each made an entry under the provisions of the homestead laws of 160 acres of land, the same being near Nimshaw, in Butte county, about 12 miles from Chico. These tracts are adjoining, both being in Section 10, making a farm of 320 acres of fair foothill land. The only payment required then was the entry fee of \$22 each, which withdrew the land from the public domain, giving them the right to occupy it and make homes. Under the provisions of the homestead law the entrymen had five years in which to earn the land by residence and improving it so as to make a home, and they must make the necessary proof of such residence and cultivation after the five years have expired and before the end of seven years.

Monday last, nearly six years after making the entry, they came to the land office with two witnesses and made final proof and payment of \$12 each, for the two tracts of land. They proved by two witnesses and by their own affidavit that they have continued to reside on and cultivate the land since they made the first entry in 1887, the land and improvements being worth over \$4000 at a low estimate.

They have house, barns, outhouses, fence, fruit trees, chickens, and many conveniences such as go to make a home for a family. They had but little means when they made the homestead entry and were obliged to economize during the first year, each going out to work for others when the opportunity offered. They are now in fairly easy circumstances and have a foundation laid for a competence in a few years more, because they own the land, the improvements, the growing fruit trees, and have facilities that cannot be found in the cities waiting for work.

From personal knowledge this writer can name more than one hundred instances similar to these, some of them far better.

The men who have done this are well off in worldly goods compared to those who have stuck to the cities and continued to labor for wages, having little to show for the year's work when figuring up. What these men have done others can do and are doing, and there is room for hundreds more, there being vacant Government land to be had in every district of the State.

Only a few days ago two men made an entry of 320 acres of land in this county, the tracts being adjoining, and they intend to plant fruit trees, raise chickens and pigs, cut wood and make a home.—Marysville Democrat.

HORTICULTURE.

Root Disease of Lemons in Corsica.

In view of the extensive plantations of lemons that are being set out in California, the following extracts from the report of Prof. Vallery-Mayet of the Normal School of Agriculture of Montpellier, France, may be of interest to those concerned in the planting or care of citrus fruits in California. For the translation and notes we are indebted to Arthur P. Hayne, assistant in charge of viticulture and olive culture at the University Experiment Station.

The report was made by the distinguished professor by order of the Minister of Agriculture of France, and was published in 1892.

It seems that one of the chief industries of the island of Corsica is that of citrus fruits. Recently many of the old as well as the new plantations of lemon trees died off in an erratic way, causing not only great actual damage, but grave apprehension on the part of the inhabitants. In order to discover the cause of the trouble, and to indicate remedies, the French Government sent a special commission to Corsica. The report deals with various insect pests and cryptogamic troubles. We make extract only from that part dealing with the root diseases, as the others are too well known in this State to require comment:

The trouble actually found in Corsica in 1890, while taking the form of gummy exudations, cancerous spots on the stems, and decay or rot of the roots, seems to us to be due to one and the same cause. The symptoms are as follows: The most vigorous tree in the plantation, cared for in the most thorough and painstaking manner, is sometimes suddenly stricken and dies within a few months; but ordinarily the tree becomes feeble the first year, and dies the second; the leaves turn yellow; a few branches dry out at their ends; sometimes a flow of sap is noted from one or more cancers at the root-crown. The second year the partially dried branches do not start at all. As is the case with all fruit trees when first stricken with disease, the yield of fruit is exceptionally large, but the size of the fruit seldom passes that of a walnut. At the same time the cancers at the root-crown grow larger, continue to exude gum and eat into the bark and liber, leaving the wood bare. These cancers dry out, but generally begin with gummy exudations. In spite of numerous incisions practiced on the edges of these cancers, we were unable to detect the presence of any fungous disease. In examining the roots of a tree just manifesting the disease, it will be found that some are sound while others are soft, spongy and, in some cases, decomposing, exhaling a peculiar odor. When the tree is near its end, the leaves and fruit dry up, and the cancers at the root-crown enlarge to such an extent as to encircle completely the trunk. If, however, the tree dies before this, almost all the roots are found to be decomposed. Hence we have called this the "Root Disease."

Causes of the Disease.—We have said that the diseased roots exhaled a special odor. This odor we have even noticed before the ground near the roots was broken. Sometimes it is simply a putrid odor, sometimes acid, and sometimes even alcoholic.

I am convinced that in the majority of cases we are in the presence of a disease analogous to that which has been observed by Van Tieghem in Normandy, on the roots of the apple trees. * * * "After one or two rainy seasons, the roots of these apple trees, plunged in a soil constantly deprived of air by being saturated with water, perish either from asphyxia or a certain quantity of alcohol in their tissues. Probably they are killed by the two causes." The cells of these roots, according to Van Tieghem, not finding the quantity of air at hand for respiration, draw upon their sugar reserve for the oxygen necessary for their growth. This they transform in their tissues into alcohol by means of a true fermentation without the intervention of yeast. The experiments of Lecartier and Bellamy, and later those of Pasteur, are recommended to those interested in fermentation of this nature. These experiments were confirmed the day Muntz proved that a healthy plant suddenly deprived of all air produced alcohol in both roots and branches. In a word, all vegetable cells containing sugar, when withdrawn from contact with the air, destroy the sugar in taking from it oxygen, and that the result of this decomposition of the sugar is carbonic acid and alcohol, which brings about the death of the plant. Alcoholic fermentation due to yeast has the same origin; and that which occurs in the wine or beer vat takes place similarly in a soil saturated with water, in which are the roots of the apple trees of Normandy, the lemon trees of South France, Italy, Portugal or Corsica. It is the case also with the roots of the grape vine all over the world.

It has been said that man has irrigated his plantations for thousands of years. We answer that diseases have always existed, and that this special disease is not at all new in the history of lemon culture; and that we can affirm that the greatest mortality among the citrus fruits of the countries just enumerated coincides with too abundant floodings and manuring in badly drained soils.

In noting the same symptoms among the lemon trees of Corsica, etc., as Van Tieghem did on the apple trees of Normandy, we think we have put our finger on the true cause of the disease, and we think we have found the true explanation of the great mortality in Corsica.

It remains to call attention to one more cause of mortality in Corsica, *i. e.*, the imprudent application of undecomposed stable manure to the roots themselves.

The fermentation of stable manure generates heat sufficient to destroy the vitality of all roots exposed too much to it.

The following summary is given: 1. Care should be taken not to plant in ill-drained, compact soils, or in soils over an impermeable subsoil.

2. The trouble in plantations already attacked can be stopped by (a) diminution of the quantity of water applied in irrigating; (b) by proper drainage.

3. The reconstitution of plantations already destroyed in rich, wet soils should be made on *resistant roots*. The best resistant roots thus far found are those of the "Brigardier," or wild sour orange.

A Discussion on Orchard Cultivation.

Methods of working orchard ground are reasonable topics for discussion now, and we are pleased to find some very interesting accounts of practice in the *Farmer's* account of a meeting of the Sutter County Horticultural Society's meeting last week:

G. W. Hutchins opened the discussion. He thought the kind of cultivation necessary varied in different localities. On his land he found it best to plow at least twice a year, and then cultivate and use a weed-cutter. This will keep morning glory down on land infested with that pest. It was not expensive. He had just finished plowing a 16-acre peach orchard in four days, with one man and two horses. He thought it absolutely necessary to plow the ground.

B. F. Walton had noticed that each orchardist had a different way of plowing or cultivating. He would like to have explained the philosophy of the different methods. He thought it was economy to plow and to throw the dirt away from the trees the first plowing. Then he would spade the ground left around the trees. He would then let it rest until time to harrow, and in May he would plow again, throwing the dirt to the trees.

Mr. Hutchins always plowed away from the trees first. If a man wants to keep the trees back from early blooming, he should not plow until late.

R. C. Kells agreed with Mr. Walton with regard to methods of cultivation. He preferred to plow early and again in April. He had thought he would plow only once this year, but he had finally concluded that two plowings would be better. He would plow away from the trees the first time. He thought this had a tendency to prevent curl leaf. It was also harder to plow away from the trees after the foliage has started out. He thought the use of a clod-masher in the orchard should be prohibited unless the ground is immediately stirred again to prevent crusting of the soil. He used a chisel-tooth cultivator last year with excellent results. He had watched Mr. Hatch's method of cultivation and found it brought good results. Mr. Hatch always plowed and then kept up thorough cultivation through the summer. Mr. Kells said he always cross-plowed. He used the New Deal gang.

C. E. Williams had a great variety of soil at his Butte orchard. On his sandy soil he thought one plowing a year was enough if followed by cultivation. A great deal depended upon the season. He thought the rolling cutter would assume a more and more important place in orchard cultivation. The expense of cultivation depended upon a great variety of circumstances. On sandy soil the cutter will go deeper than in clay soil, and therefore less plowing is necessary.

H. P. Stabler agreed with Mr. Kells except that this year he intended to plow only once. He thought the rolling cutter would do away with one plowing. He did not believe that in this section plowing could be dispensed with. With a New Deal the expense was not great, though he had not segregated the expense of plowing from other expenses.

Mr. Kells thought if the duck-foot cultivator was used the ground would be thoroughly broken up, if worked both ways.

F. Hauss had plowed three times and harrowed or cultivated six times, to get three-inch peaches. He had plowed 100 acres of orchard in four days with eleven horses and four men. It cost about \$2 an acre every year to cultivate his land.

G. W. Hutchins said it would not cost to exceed \$5 an acre to give all the plowing and cultivating necessary. In his Colusa orchard he had plowed seven to nine inches deep and then used clod-crushers. He thought the smoother the ground could be made, the better.

Mr. Williams told about a very cloddy spot in his Muscatel vineyard. When planted in 1883 not over 15 per cent of the cuttings lived except in this cloddy spot, where at least 50 per cent lived.

Mr. Hutchins had found that neither peaches nor any other fruit would do as well on sandy upland as on a stiff, clay soil.

B. F. Walton thought there was a good deal of unnecessary expense incurred in cultivating.

B. F. Frisbie advocated cultivating with the cutaway and the disc harrow. He would use the cutaway first and run the whole disc right after it. One throws the dirt away from the vines and the other toward them. He had not plowed last year and should not this. He cultivated to a depth of eight inches. Plowing makes a crust right at the bottom of the plowing, which cannot be broken up except when the ground is wet. He did not believe plowing was necessary in a vineyard.

Dr. Jackson said he understood that land had a circulation. The crust spoken of was full of little capillary holes, and moisture would pour through these more rapidly than through soil that was pulverized. The pulverized portion on top acted as a mulch to keep the moisture from evaporating. He believed in plowing up roughly and letting it lay until the rains cease.

Mr. Frisbie had found that where the surface was well cultivated and pulverized there was moisture in September, while upon the same kind of land that had been plowed once and left rough, it was about two feet to moisture.

A number of members stated that since the late frost they had examined their apricot trees and found from one-third to five-sixths were killed. Some varieties had suffered more severely than others.

Mr. Kells thought there would be plenty of apricots, and the frost would save thinning. He had only examined the peach-apricot. Others had made examination and found their trees all right.

Serious Injury to Fruit Crops on the Atlantic Slope.

Eastern fruit-growers can command the fullest sympathy from their compeers on the Pacific slope. Early reports seem to indicate that there will be a very serious shortage in the local fruit product all over the Atlantic slope. Apparently California will be largely called upon to supply the Eastern demand. This should stimulate our canning interest to a full product, and it indicates also that the demand for shipping and for the dried product later on will make away with all we can supply this year. The following are the details as furnished by dispatches to the Associated Press:

WASHINGTON, March 26.—The following special bulletin was issued by the Weather Bureau: The period of extremely warm weather noted by the special bulletin of the 23d inst. has been followed Sunday and this morning by one of extreme cold, which extends over almost the entire country east of the Rocky mountains, minimum temperatures of freezing and below being reported this morning over all the region except on the immediate coast of the South Atlantic and Gulf States and Florida. Throughout northern Minnesota and the Dakotas the temperature this morning was below zero. In Georgia, Tennessee, Louisiana, Texas, Arkansas and southern Missouri the weather is the coldest of which the service has a record for this season of the year. General frosts occurred on Monday morning throughout the Gulf States and the middle and northern portions of the South Atlantic States, and the temperature will probably fall till Tuesday morning in the Middle and South Atlantic States, with frosts as far south as northern Florida.

MEMPHIS, March 26.—Reports received by the Associated Press from Enterprise, Macon, Utica, Columbus, Brookhaven, Yazoo City, Madison, Canton, Oxford and Corinth, Miss.; Monroe, Gibbs' Landing, Alexandria, Clinton and Bayou Sara, La., and Pensacola, Fla., are to the effect that a severe frost visited these sections this morning, destroying early vegetables, strawberries and the fruit crop. In some places early corn, oats and peas were damaged. The cold weather continues to-night.

VERSAILES (Ky.), March 26.—Last night's freeze killed all the tobacco plants, early gardens and much of the fruit. Early wheat is also damaged.

MARYSVILLE (Ky.), March 26.—The thermometer dropped to 14 degrees below freezing last night, and unmercifully slaughtered the peaches and plums.

CATLETTSBURG (Ky.), March 26.—A severe blizzard and windstorm struck this section last night, followed by a light snow. A great many fruit trees were in bloom. They are undoubtedly killed. The thermometer registered 19 degrees above this morning.

LEBANON (Ky.), March 26.—The thermometer registered 16 degrees here this morning. All farmers coming into town bring the report that wheat is dead from freezing.

CINCINNATI (O.), March 26.—Captain Bassler, the government observer of the Weather Bureau, says to-night that the cold wave will effectually kill the fruit buds over a very large extent of territory, and that this is the severest weather at this time of year that has been seen for years. The thermometer last night fell to 16 degrees. The fruit and berries are killed, but the damage to other crops is not serious although they are further advanced than usual.

INDIANAPOLIS, March 26.—The cold wave which is now sweeping over the country has put the chances for a fruit crop in this State down to a very low degree. For several weeks past the weather has been unusually warm for the season, and the result was that when the cold snap came it caught the fruit trees just ready to burst the swelling buds. It is thought peaches were to a large extent killed by the severe weather in January, but peaches that escaped are now certainly gone. Cherries, plums and apples are almost totally destroyed in the central and northern parts of the State, but there is hope that the hills in the southern part (the great apple section) have saved the staple fruit.

ENGLISH (Ind.), March 26.—The last two nights' frost has doubtless destroyed the apple crop, the buds of which were well advanced. All small fruit and peaches were destroyed weeks ago.

CHICAGO, March 26.—The cold wave has reached this point, bringing with it a decided drop in the temperature and a snowfall varying from occasional light flurries to heavy storms.

In Michigan the thermometer began to drop early and continued to below freezing point. Many thousands of dollars of damage is done to early peaches, grapes and blackberries. Strawberries are frozen up solid. Many growers will be unable to raise more than a small sum because of the hard times.

CAIRO (Ill.), March 26.—It is thought the cold weather of the last two days has killed the strawberries in this section. Peaches were nearly all killed by the extreme cold of January. The berries were well advanced by last week's sunshine, but the weather is now freezing cold.

COLUMBIA (Mo.), March 26.—The peach crop is destroyed and apples and other fruits are greatly damaged.

St. JOSEPH (Mo.), March 26.—The temperature this morning is only six degrees above zero. The Missouri river is frozen across. Freezing weather is general in this part of the country. It is believed the apple crop here is injured.

ATLANTA (Ga.), March 26.—Rump & Moon, the largest peach-growers in the peach district of Georgia, say that 90 per cent of the fruit crop was killed by last night's freeze, and they think the remainder will go to-night. All vegetation is killed around here. The melon crop throughout Georgia is also probably killed.

OMAHA, March 26.—So far as has been reported very

little damage will result from the cold snap in this State. The season was not far enough advanced to make fruit liable to damage from frost. Winter wheat had sprouted, but the snow covered it up enough to save it from the cold. Stockmen will lose heavily, but nothing definite can be told of their losses until the round-up, which will not be completed before the middle of June.

DALLAS (Tex.), March 26.—Reports show killing frosts from the Red river south to a line drawn east and west through Waco. The fruit section around Tyler suffered severely. The fruit crop is cut short, and in many places destroyed.

DENISON (Tex.), March 26.—A serious freeze visited this section last night. The fruit crop is believed to be ruined. Crops and gardens are seriously injured.

THE IRRIGATIONIST.

Irrigation by Pumping.

That the results of timely and intelligent irrigation are a rich blessing no well informed person will either doubt or deny.

It might be of interest to many to state the exact distance that their pumps carried this water before discharging the same into reservoirs, as well as how many hours during the average day or week their wells can furnish the water and their mills perform the work. These are vital questions in determining the cost and feasibility of an irrigating plant, and to me it seems that a mill and pump of the capacity stated would exhaust a much better well than the average in a very short space of time.

On this cost there are many thousands of first-class mills that are used for raising water which is devoted to stock, household, and other purposes, and I venture to assert that 98 per cent of them cannot preform or accomplish the results claimed. Neither do we claim to possess any ordinary wells that are capable of furnishing a stream of water equal five or six miner's inches. Now a miner's inch of water in 24 hours will fill a tank of the capacity of 13,000 gallons. Reduce this to minutes and we have a flow of water equal to a fraction over nine gallons. The product of the miner's inch of water when properly stored and used is deemed sufficient to irrigate ten acres of fruit-bearing trees. The value of an inch of water, perpetual flow, is rated from a \$100 to a \$1,000, according to the locality where situated and the use to which it is put. In most cases the plants are owned and managed by corporations, who deliver water at points contiguous to these pipe lines, charging therefore from \$5 to \$10 per acre for the season. On this coast, of the water used for irrigating purposes, not one-tenth of one per cent of the whole amount is produced through the agency of windmill power. But will it pay a person living within the arid belts of Nebraska to invest in an irrigation plant where water is to be raised by one or more windmills? To answer this question in its varied ramifications would require the intelligence of an oracle, as well considerable time and space. Wind, like rain, is an uncertain element, and a good supply of the former you must have if you would obtain good results from your investment and labor. Consider (1) the supply of water that your well is capable of furnishing, (2) the force and reliability of the motive power to be used, (3) the total cost of your plant, and (4) your market advantages. In other words, charge to expense account a liberal amount for interest on the whole cost of your plant, as well as a reasonable amount for wear and tear. Charge also the amount your labor would bring if sold to a thrifty farmer. In brief, charge up all outgoes. On the other hand, carry to your credit page the market value of your whole yield of products, and if it happens to have been a dry year, also credit your plant what the rainfall (which you do not receive) would have been worth to you. Add up your two columns of figures and the difference between your two amounts will determine how much you will be able to *blow in* for some of the comforts of life that are not of frequent occurrence when looked for through the benign influence of old Jupiter Pluvius.

To those who design building irrigating plants, I would say: First, ascertain if the necessary amount of water can be obtained and at what cost. If the cost does not blacken the eye of the looked for advantages, it will be well to contract with responsible parties for whatever you may require, paying for the same only on *delivery of the goods*. Talk is cheap, and the amount of wind contained within the lungs of a windmill man is sometimes adequate to the turning of his mill, but the water still remains in the bottom of the well.

By means of a walking-beam attachment I am enabled to employ the services of two mills that work two 4-inch pumps, and lift water from the bottom of a never-failing well that is 100 feet in depth. One mill is 12 feet in diameter and the other 8 feet, and both work independently of each other. My storage facilities are ample. First tank fills second tank, thence to the reservoir, which is 300 feet distant from the tank house. I irrigate about three acres of vines and trees, and conduct water to three different households. With a greater supply of water returns would be more satisfactory.

Had I occasion to put in another plant, before commencing to do so I would first fully investigate the virtues and adaptability of gasoline engines. I am led to believe that in many respects and under certain circumstances they are the better of the two systems. In my case there is no consolation in knowing that the water which I need is 100 feet below me, my mills stationary above me, and sportive wind-king Aeolus killing time ogling sea nymphs at Santa Monica or some other festive water resort.

It is said that "there is no cheaper power on earth than windmills." Under certain circumstances and conditions, and up to a certain limit, this claim and statement is seasoned with a morsel of truth. What looks like reasonable and intelligent theory will, when reduced to a partial application, oftentimes prove to be more chimerical than real. Therefore, "Look before you leap."—B. D. White in Irrigation Age.

CEREAL CROPS.

Wheat Growing in Argentina.

The new country—the Argentine Republic of South America—is now so frequently mentioned in connection with the world's wheat supply regions, that information of the country will be of interest to our grain-growers. We find in a report of the British Foreign Office, 1893, on the "Agricultural Condition of the Argentine Republic," the following paragraphs:

Wheat is becoming a most important product, not only for this Republic, but also for European nations which now consume a large portion of its total yield. This continually spreading cultivation of wheat and other cereals opens large and new fields to unemployed capital and labor; and, as both have chiefly to be provided from abroad, it is of interest to Europeans to consider what is the present position of this important branch of export in the Argentine Republic, as also its probable future.

Until lately the Argentine Republic was essentially a pastoral country, and its riches were almost entirely derived from stock raising. For many years past, however, agriculture has been growing more important, and in the last ten years has assumed immense proportions. Many years ago wheat was imported; large quantities of flour also in quite recent years. Now agriculture covers millions of acres of land, and furnishes not only food for the home markets, but for many foreign ones as well, and in considerable quantities. The increase of agriculture has provided many native raw materials formerly imported, and caused numerous new industries to arise all over the country.

Exports in recent years have included some articles which, even 15 years ago, figured among the imports. Other imports have so largely diminished as to show graphically, in the annual returns, the remarkable progress of agriculture and of native industries.

The great rise of the gold premium in the last few years, the result of financial and economic mismanagement, acted as a large bounty on native production. Formerly almost every elaborated or manufactured article was imported. The Argentine Republic produced only certain raw materials, such as wool, hides, bones, meat, etc.; and such portions of them as would bear the freight were exported to be returned later, converted into some article of consumption. Little was elaborated locally, and that only to a very primitive and limited extent. Gradually, however, owing partly to heavy duties on every imported article, certain native industries arose to employ locally-produced raw material. Agriculture spread rapidly, and Argentine industries then started also to convert its produce into the form required for consumption. Flour, oil, sugar and other mills were built, of which there is now a large number in the Republic. After satisfying the local consumption, the surplus of agricultural produce, which soon became considerable, was sent abroad. The export of wheat was stimulated by the high prices in Europe in 1891; and, during the last five years, the continually rising gold premium made wheat growing unusually remunerative. Wheat, whether sold locally or for export, naturally fetched a price based on its gold value in European markets, which price meant a great deal in depreciated paper currency, in which the wheat-grower paid all his outlay, except for agricultural instruments and a few other articles, which were paid for at gold rates. His wages and expenditure being consequently so much less when converted to gold, his profits were therefore considerably higher than in former years. Again, the high gold premium enabled persons having gold to buy wheat lands cheaply, for their value in depreciated paper dollars remained much the same. A great impetus was thus given to wheat cultivation, and a demand created for labor and capital to still further increase its area. An additional supply of labor necessarily means immigration, and more capital certainly implies foreign capital, and therefore probably largely British, in the event of the Argentine Republic inspiring its already many creditors with sufficient confidence to obtain from them more funds. The large amounts of foreign capital in Europe seeking investment naturally find their way to new and younger countries, if these offer reasonable security. To the Argentine Republic it should be of paramount interest to secure that confidence abroad, which is so essential to its material prosperity. New labor and new capital are two things which it cannot do without in its natural economic development.

The large number of Italians, who form the chief immigration here and are the most suited to the country, have been chiefly instrumental in increasing agriculture, especially wheat growing. They sometimes bring small capitals of their own, and even without succeed remarkably well, both as agriculturists, as ordinary laborers, and as workmen of every kind. One may say that by far the greatest and best part of labor in this Republic is supplied by these Italians, without whose aid this country would not have made half the progress that it undoubtedly has.

The Argentine Republic enjoys three remarkable advantages over many other countries for the production of all agricultural and other produce:

1. A good climate and its being able, from its great variety of climate, to produce all known kinds of products within its limits, which comprise tropical regions in the north, temperate in the center and cold in the south.
2. Cheap suitable lands and abundance of cattle and horses, which, owing to their enormous numbers, are extraordinarily cheap for all purposes.
3. An almost perfectly level surface over nearly its whole area, making transport, whether by rail or otherwise, easy and comparatively inexpensive.

Another temporary and great advantage has been and is the above-mentioned premium on gold, which enables a wheat-producer to sell his wheat at gold values, and pay all his current expenses and labor at a very low rate in depreciated paper currency.

List of U. S. Patents for Pacific Coast Inventors.

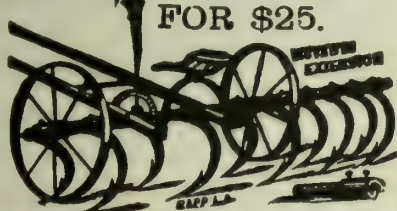
Reported by Dewey & Co., Pioneer Patent Solicitors for Pacific Coast.

FOR THE WEEK ENDING MARCH 18, 1893.

- 516,292.—VOTING BOOTH—E. E. Barry, Elk Grove, Cal.
 516,426.—EASEL—Hattie F. Beecher, Port Townsend, Wash.
 516,426.—FERN WATER HEATER—J. Bell, Troutdale, Or.
 516,428.—WASHING MACHINE—J. S. Blood, Houghton, Wash.
 516,261.—PROPPELLER—A. H. Carpenter, Stockton, Cal.
 516,564.—DIRT WAGON—Coats & Bartlett, Ukiah, Cal.
 516,298.—DYNAMO—F. J. Crouch, Junction City, Or.
 516,592.—DOOR LOCK—W. T. W. Ourl, Los Angeles, Cal.
 516,301.—PROGRAMME HOLDER—E. E. Douglas, Hanford, Cal.
 516,303.—TOBACCO JAR—M. Goldwater, Prescott, A. T.
 516,437.—FRUIT CARRIER—W. E. Howell, Los Angeles, Cal.
 516,308.—CAN SOLDERING MACHINE—M. Jensen, Astoria, Or.
 516,440.—SEPARATOR—R. W. Jessup, Los Angeles, Cal.
 516,442.—BLOWING ENGINE—C. A. Klotz, Vallejo, Cal.
 516,450.—JAILS—Salfeld & Kolberg, S. F.
 516,467.—CAR COUPLING—D. J. Stevenson, Bakersfield, Cal.
 516,557.—DISH WASHING—M. Stone, San Diego, Cal.
 516,239.—SAFETY PROTECTOR—C. F. A. Sturte, S. F.
 516,240.—WINDOW PROTECTOR—C. F. A. Sturte, S. F.
 516,320.—KEY HOLDER—J. F. Walsch, Los Angeles, Cal.
 516,324.—TYPE WRITER—Leonie Welspiel, S. F.

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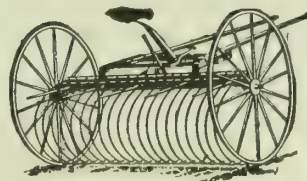
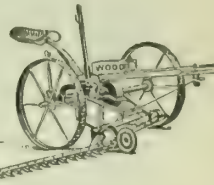
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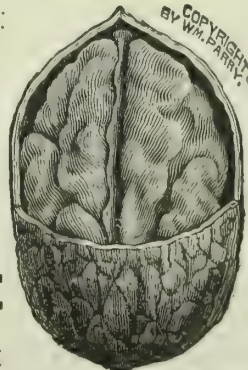
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THE HOME CIRCLE.

Home Love.

'Tis such a little thing to do—
To give a loving kiss or two
To husband at the door,
But you'll be happier all the day,
And work will almost seem but play,
Though it never did before.

'Tis such a little thing to do—
To press her in your strong arms, too,
Ye husbands everywhere,
And you will all the happier be,
For all day long her face you'll see,
By your love, freed from care.

'Tis such a little thing to do—
To say "good-bye" and "I love you,"
When parting for the day;
But all day long your hearts, I know,
With joy and love will overflow,
And bright will seem the day.

Ah, love! thou art a holy thing,
Descended straight from Heaven,
God knew no dearer gift than thine
To mankind could be given;
For, where thou enterest at the door,
Though joy were never known before,
Home, then, is home forevermore,
And grief from sad hearts driven.

—Womankind.

The Captain's Secret.

There was bay upon his forehead,
There was glory in his name;
He had led the country's cohorts
Through the crimson field of flame.
Yet from his breast at midnight,
When the throng had ceased to cheer,
He took a faded blossom
And kissed it with a tear.
A little faded violet,
A bloom of withered hue;
But more than fame
Or loud acclaim
He prized its faded blue.

We have all a hidden story
Of a day more bright and dear;
We may hide it with our laughter,
It will haunt us with a tear.
And we've all some little keepsake
Where no eye can ever mark;
And, like the great commander,
We kiss it in the dark.
A little faded violet,
Perchance a loop of gold,
A gift of love
We prize above
All that the earth can hold.

—Samuel Minturn Peck.

The Champion Whale.



ATELY, with a friend who had been a purser aboard an exploring bark, I was looking at some engravings of sea monsters when we came upon the picture of a sawfish.

This set my friend describing an exciting scene once witnessed by him off the southeast coast of Greenland. Said he: It was the morning watch, and our bark having been made snug and trim aloft and aloft, officers and men had leisure for the time. We were becalmed, and our sails hung motionless. Off the port beam the starboard quarter and ahead were icebergs, some of them 20 feet high and not more than 30 fathoms distant. The sun, like a red-hot globe of steel, had loomed above the cold waters, its radiance bathing us all and everything around us in a flood of crimson light. I was watching the brilliant red, amber and emerald-green lines gilding the edges of the floating bergs, when suddenly the water near one of them broke into bubbles, then rolled back, foaming and hissing, as a large whale rose to the surface.

The monster swam in zigzag directions, seeming much frightened, frequently sending up the vapory jets from its two spout holes with a sort of metallic roar, like steam from a boiler, and rolling from side to side its great barnacle-covered hump, which in the sunlight looked like a big, rough lump of gold. Presently, under the water, close to the bark, we saw a dim form slowly rising. When it reached the surface it proved to be a little calf whale, and what a beauty it was! It measured about 15 feet in length, the skin being smooth, shiny and of a pale blue tint, the fins as yet imperfectly shaped, and the slabs of whalebone attached to its upper jaw not more than seven inches long. Softly tinkled the ripples it made around its sportive young head as it gambolled, vainly trying to lash the water to foam with its partly formed flukes, that could only scatter the spray in gem-like drops. No wonder its mother—the cow whale, as the larger of the two proved to be—was so fond of it, and that she now so lovingly urged her bulky form toward it. But, strange to say, though she had found her calf, of which she had probably been in search, she now seemed more concerned than ever, booming

along, spouting furiously, and fairly hugging her little one to her side. We soon discovered the cause of her alarm; slowly and stealthily, from under a berg not far off, arose a long beak or snout with teeth attached to both sides, as to a double-edged saw.

How greedily shown the two little eyes, set so close together in the bony head just back of the snout, as the ferocious creature to which this deadly saw belonged rapidly cut the water toward its prey!

The monster, in fact, was a sawfish—that formidable enemy and destroyer of the whale. The cow had evidently espied the terrible foe a long way off, and her first concern was for her offspring.

Away she went, heading for an inlet that extended from the base of one of the bergs. The inlet was bordered on each side by pointed hummocks eight and ten feet high, and we could see that an icy shaft or platform sloped under its waters. Swimming to this inlet, with her calf still sheltered by her fin, the whale forced herself into the space as far as she could—two-thirds of her length, with her under part probably resting on the frozen floor beneath. Thus, in a measure protected by her position, she commenced to ply her nimble flukes against the attempts of the sawfish to reach her. One blow from that ponderous tail swinging in every direction, and beating the sea with thundering strokes, would have dashed the life out of her tormentor in an instant.

Obliged to dodge, and unable to overleap the pointed hummocks, the sawfish was the very embodiment of baffled rage. Darting and bounding to and fro, its small eyes flashing with wrath, it vainly strove to fasten itself on that part of the whale's body projecting outside the inlet. Every time the fish leaped in the air, we could see its form through the flying spray twisting and bending almost double, with its fins above and below bristling and its beak quivering convulsively. It was about eight feet long, the upper part of its body very thick, but it tapered to slender proportions toward the tail, and it was provided with four triangular fins. The evil head, the long, bony, double-edged snout, with which it cuts and tears its victims to death, gave it a truly diabolical aspect. As the cow whale still fought against it, we fancied we could perceive in the plaintive roars of her spoutings an expression of the blended concern and distress she felt for her offspring.

One of our lieutenants suggested the lowering of a boat or the firing of a gun to drive away the sawfish, but the captain said this would frighten off the poor mother also, and the foe afterward would find a chance to reach her.

Suddenly a cry of regret escaped us. The calf, either from alarm or from being tired of its constrained position, had left its mother, and now came up about 20 fathoms to the left of the enemy.

No sooner did the savage monster behold that pale-blue form than he darted toward it. But the cow whale, quickly backing from the inlet, kept the creature from her "little one" by interposing those ponderous swinging flukes, again diverting to herself the attacks of the foe.

Having the whale now before him in an open space, the sawfish avoiding her strokes was about taking advantage of a chance to pounce upon her, and we all expected to see her become his victim when another combatant appeared upon the scene.

With a rippling rush and roar the waters suddenly opened between the intended prey and her assailant, and shooting up from the sea, grim and terrible, arose the form of an enormous bull whale.

Slantingly upward nearly his full length he leaped, and, for a moment, as the crimson sunbeams lighted his broad sides, flashing like gold, he hung as if suspended in air, with only the tips of his flukes touching the water, we had a full view of that huge body with its wide outstretched fins, its great rock-like hump, seared and scarred with many wounds, and its hundreds of slabs of halcy whalebone, drooping, arch-like, from its upper jaw. Thus poised for an instant, down came that tremendous form, falling back upon the sea with an echoing crash and in a cloud of spray.

The bull had endeavored to fall upon the sawfish so as to crush it with his mighty weight, but the enemy avoided him by darting to one side. Then the bull wheeled and felt for the foe with his thrashing flukes; but, dodging these, the sawfish made a flank attack upon his new opponent. With a side sheer the latter escaped him, then struck at him edgewise with his tremendous tail. So quick was the stroke that the sawfish barely escaped this blow, which would have cut him nearly in two had it reached him.

Nor was the cow idle all this time. She also took part in the conflict, assisting her consort, and both their flukes were soon be-

ing so skillfully worked that for a while the sawfish had a lively time of it.

The whizzing and the crashing of the thrashers, the roars of the spoutings, the rush of the water, the hissing of the foam, and the whistling noise—almost a shriek—made by the sawfish, created a din such as I had never before heard. So thick was the spray that only at intervals could we see the beaked enemy, as he bounded to and fro, striving to get at the bull.

Manœuvring skillfully, he saw his chance at last. One quick leap brought him upon the whale just forward of the spout holes. Then you would have shuddered to see how he went to work, hanging there over his intended victim's head, and sawing away like a carpenter at the bull's thick blubber with his long, double-edged toothed snout. To and fro did he ply his death saw directly over that most tender part of the whale, termed the "life spot," his big tapering back and sides throbbing and puffing horribly with his exertions.

The bull vainly strove to throw him off. He had thrust his saw under the skin, and the toothed edges enabled him to hold on. Rolling, tossing, plunging, and now and then breaching his full length from the sea, the maddened whale still struggled to free himself. The cannon-like reports of his flukes and the roars of his spouting set all the icebergs to trembling. The cow, in her anxiety for her consort, added to the din, swimming wildly and lashing the waters furiously, while the little calf, trying to imitate her, tumbled about, working its small, stumpy flukes and sending tiny fountains of vapor from its spout holes.

It seemed as if the doom of the bull whale was certain. Streaks of blood now flecked the sides of his head, showing that the toothed beak of his enemy was fast making its way to the center of the "life spot," and still, as he vainly struggled to free himself, did his awful foe swiftly yet with a fiendish sort of cool regularity, saw away at his intended victim.

We had, in fact, given up all hope for that whale, when suddenly we were puzzled, not at first divining his purpose, to see him lower his enormous front and dash toward the wall of a perpendicular iceberg a few fathoms off. He went through the roaring waters like a thunderbolt, until at length, with a force ten-fold greater than that of a battering ram, he drove his head, over which the sawfish still hung, straight against the icy wall.

There was a far-resounding crash as the frozen mass reeled before the stroke and split asunder above; a huge fragment dropped into the sea.

Recoiling from the force of the shock, the whale seemed half stunned for some moments, while his late tormentor, the sawfish, jammed to death by that tremendous blow against the iceberg, fell from him, with its useless broken saw projecting from the water.

The bull whale soon appeared to recover himself, and side by side he and his consort, the latter with the little calf under her fin, swam triumphantly away, to dive into the ocean's depths as the voices of the bark's sailors cheering the brave champion rang upon the air.—Roger Starbuck, in Harper's Young People.

Pleasantries.

"Is your husband fond of outdoor sports?"
"Dear me, no! It nearly makes him sick to talk about beating a carpet."

Workman: "Is the boss at home?"
New Father: "No; the nurse has her out for an airing."—Chicago Inter-Ocean.

Grandma: "Bobby, what are you doing in the pantry?" Bobby: "Oh, I'm just putting a few things away, gran'ma."

The Very Image.—"You look so much like your brother," said Dennis to Phelim, "that I could tell yes was brothers if I'd never seen either an yez."

Beauty.—"Ye call that a beauty?" said Pat; "faith, I can see twinty handsome women on Washington Street every day, wid me eyes shut."—Boston Transcript.

Jap Miller.

Jap Miller, down at Martinsville, is the blam'dest feller yit, When he starts in a-talking, other folks is apt to quit, 'Pears like that mouth o' hisn wasn't made fer nothin else But jes' to argify 'em down and gether in their pelts. He'll talk you down on tariff, or he'll talk you down on tax And prove the pore man pays 'em all, and them's the solid fac's. Religion, law or politics, prize-fighting or baseball—Jes' tetch up Jap a little, and he'll post you on 'em all. He's the comicalist feller ever tilted back a cheer And tuck a chaw of tobacco kinder like he didn't keer. Thar's whar the feller's strength lays—so common-like and plain, Thar hain't no dude about old Jap, you bet you, narry grain.

They 'lected him to council, and it never turned his hed, And didn't make no difference what ennybody sed; He didn't dress enny finer or rig out in fancy close, But his voice in council meetin's a terror to his foes. He's for the pore man ev'ry time, and in the last campaign He stumped old Morgan county through the sun-shine and the rain, And held the banner up'ards from a-trailin in the dust, And cut loose on monopolies, and cuss'd and cuss'd and cuss'd. He'd tell some funny story ev'ry now and then, you know, Till, blame it, it was better'n a jack-o'-lantern show, And I'd go furdur yit to-day to hear old Jap norate Than enny high-toned orator that ever stumped the State.

Why, that 'ere blam'd Jap Miller, with his keen, sarkastic fun, Hez got more friends than enny candidate that ever run, Don't matter what his views are, when he states the same to you, They allus coincide with yourn, same as two and two. You can't take issue with him, or at least thar ain't no sense In startin in to down him, so you better not com-mence. The best way's jes' to lissen, like yer humble servant duz, And jes' concede Jap Miller's the best man ever wuz.

James Whitcomb Riley.

Meeting Emergencies.

People who are too inattentive, indolent and thoughtless to know or care what is going on about them often profess to be greatly amazed and impressed by the doings of some level-headed acquaintance, who seems to be able to do whatever comes along and do it without any fuss and feathers, and in a matter-of-course fashion that, to careless eyes, seems extremely easy and simple. They do not realize, even if they ever take the trouble to think about it, that all this deftness and capability means hard work, hard study and exercise of will-power that their experience does not enable them to understand.

It is worth while to begin early with the children, both boys and girls, and teach them to be ready to meet emergencies wherever they may encounter them. There is no individual in the world more useful than the one who can take up almost any thread of thought or line of business and keep matters going until the proper person comes to the rescue.

A man who now stands at the head of one of the larger establishments in the country got his start in life by being able, for the moment, to take the place of one of the most valuable members of the concern. A man who filled an important place, was, indeed, an expert in his line, met with an accident and was, for some days, laid up. It was necessary to continue his work in order that other branches of the business might not come to a standstill. It so happened that this youth had become deeply interested in this specialty, and, knowing it to be of great importance, had devoted all his spare time to it. Having a natural aptitude in that direction, he got on finely, and at the moment of the accident, when the proprietor was bewailing the fact that the works must stop until a supply man could be engaged,

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at once offered his service, with the remark that he could at least try to fill the place. So well did he perform his duties, that when the regular man returned he was kept as an assistant, and not long after stepped into the shoes of his predecessor at a big salary.

It is a curious and amusing fact that an industrious and deserving boy got an excellent position by being able to mark boxes rapidly and in an artistic fashion. Passing along the streets of a city, he halted a moment to watch a man who was making extremely awkward lettering on a packing box. A moment later, and one of the drivers, in assisting to load the box, crushed the marker's hand. Another man tried to address the parcel, but made wretched work of it. The boy stepped forward and offered to help them out. The proprietor of the establishment was standing by the window watching the loading. With the practiced hand of an expert, the boy put on the addresses, doing three boxes in the time usually occupied by the regular man for one. When he had finished, he carefully gathered all the articles he had been using, put them in order and placed them out of harm's way, near the door of the warehouse. He was about to pass on, when the man who had been watching him sent for him, and, upon learning that he was out of a job, employed him to do the marking. With the same faculty, the boy watched for opportunities to make himself useful, and is now the junior partner in a flourishing business. Some day he will be one of the leading men in his line. His house is a model of neatness, order and thoroughness. He is ever on the alert for young men who are good to fill spaces, and when one of this class gets into his establishment, it is his own fault if he does not steadily advance. This man says that he can afford to pay much larger salaries to men of this sort than to those he calls tramway men—people who can only run on one special line, and who are as helpless as a street car in the mud whenever anything unusual comes along. Out of a large force of employees, but very few are kept who are merely routine men.

It is worth while for boys to study all branches of the business in which they see fit to engage. If a young man can mark a box as well as he can handle a difficult customer; if he can make out a bill of lading and engineer a case through the custom-house as well as he can keep his stock in order, he is worth just so many more dollars, and it is only a question of time when he will be able to command them.

The Wisdom of Balzac.

In a well-organized man passions borne in the brain always survive those that emanate from the heart.

Next to the pleasure of admiring the woman we love is that of seeing her admired by others.

When a rascal is loved by an honest woman she either becomes a criminal or he an honest man.

Society, more a stepmother than a mother, adores the children who flatter her vanity.

He who does not bestride success and grasp it firmly by the mane lets fortune escape.

Women are liable to see chiefly the defects of a man of talent and the merits of a fool.

The old critic is always kind and more considerate; the young critic is implacable.

We never lack money for our whims, but we dispute the prices of necessities.

Love, after giving more than it has, ends by giving less than it receives.

In the medical profession a carriage is often more essential than skill.

There is nothing like the exercise of power for teaching you politics.

There are some men who are always polite—they have gloved souls.

A man is strong when he admits to himself his own weaknesses.

Money matters can always be settled, but feelings are pitiless.

A hobby is the medium between a passion and a monomania.

There are few moral wounds that solitude does not cure.

Mediocrity wages incessant warfare against superior men.

"As you please" is the wife's first word of indifference.

Talent, like the gout, sometimes skips two generations.

Man, be he mediocre enough, can arrive at anything.

Woman lives by sentiment where man lives by action.

All persons esteem those who scorn them.

The Honest Old Toad.

Oh, a queer little chap is the honest old toad,
A funny old fellow is he;
Living under the stone by the side of the road,
'Neath the shade of the old willow tree,
He is dressed all in brown from his toe to his crown,
Save his vest that is silvery white.
He takes a long nap in the heat of the day,
And walks in the cool, dewy night.
"Raup, yaup!" says the frog
From his home in the bog,
But the toad he says never a word;
He tries to be good, like the children who should
Be seen, but never be heard.

When winter draws near, Mr. Toad goes to bed,
And he sleeps as sound as a top.
But when May blossoms follow soft April showers,
He comes out with a skip, jump and hop;
He changes his dress only once, I confess—
Every spring; and his old worn-out coat,
With trousers and waistcoat, he rolls like a ball
And stuffs the whole thing down his throat.
"K-rruk, k-rruk!" says the frog.
From his home in the bog,
But the toad he says never a word;
He tries to be good, like the children who should
Be seen, but never be heard. —Selected.

Mismatched Couples.

In Ohio a divorce was recently granted because "the defendant pulled the plaintiff out of bed by the whiskers."

In Illinois a decree was obtained by a long-suffering husband because "during the past year the defendant struck this plaintiff repeatedly with pokers, flat-irons, and other hard substances."

A New Jersey wife got a divorce because "the defendant, the husband, sleeps with a razor under his pillow to frighten this plaintiff."

A Virginia wife was set free because "the defendant does not come home until 10 P. M., and then keeps this plaintiff awake talking."

A Tennessee court liberated a wife because "the defendant does not wash himself, thereby causing the plaintiff great mental anguish."

A Connecticut man got a divorce because "the defendant would not get up in the morning, nor call the plaintiff, nor do anything she was told."

A Michigan wife was released because the husband did not provide the necessities of life, saying "he would not work his toenails off for any woman."

A New York wife was granted a divorce because her husband threw the baby at her when she hit him with the coal bucket for spitting on the stove.

A Missouri divorce was once granted because "the defendant goes gadding about, leaving this plaintiff supperless; or if he gets any he has to cook it himself."

In Pennsylvania a hen-pecked husband was relieved from the yoke of matrimony because "the defendant struck this plaintiff a violent blow with her bustle."

A Wisconsin man got a divorce because his wife kept a servant girl who spit on the frying-pan to see if it was hot enough to fry.

In California a defendant husband was adjudged guilty of cruelty because he did not provide water at his house, neither would he repair the house to make it comfortable.

A decree was granted in Massachusetts because "the defendant keeps this plaintiff awake most of the night quarreling."

An Indiana applicant testified that "my wife would not walk with me on Sundays and pulled a tuft of hair out of my head."

A Minnesota decree was given to the wife because "the defendant never cuts his toenails, and, being restless in his sleep, scratches the plaintiff severely."

An Indiana divorce was some years ago granted because "the defendant pulled all the covering off of this plaintiff's bed and she likewise ran a knitting needle four inches into his arm."

In Kentucky a divorce was granted because "the defendant came into the bedroom the morning after the marriage and beat this plaintiff on the head with her shoe heel."

A Kansas wife was released from her husband because, as she stated in her petition, "the defendant pinched the nose of this plaintiff, causing it to become very red, thereby giving the plaintiff great pain and anguish of mind."

A New York man, in petitioning for divorce, pleaded that "the defendant would not sew on this plaintiff's buttons, neither would she allow him to go to fires at night," a species of oppression decided by the court to be cruel and inhuman, and therefore entitling the plaintiff to a decree.

Titles are valuable; they make us acquainted with many persons who otherwise would be lost among the rubbish.—H. W. Shaw.

Never put tea leaves on a light-colored carpet; they will surely leave a stain.

DOMESTIC ECONOMY.

A Codfish Dinner.

The salt-fish dinner of New England is known in its perfection in the seaport towns on the coast, and when properly prepared of the best materials of their kind it is an excellent as well as a very economical meal.

In recent years it has been difficult to get genuine codfish, strange as this may seem to those who have believed that codfish is the cheapest fish of the sea. Such is not the case. There are many coarse, greasy fish taken in the nets with the cod that are now generally believed to be cured along with it. The best cod is that which is sold entire, when there is very little if any chance, owing to size and general appearance, of substituting another fish. This is also the cheapest way to buy cod. In spite of the immense catches of fish along the New England and Newfoundland coasts still larger quantities are caught off Norway, while the fisheries of the Pacific coast are growing in importance and value. New England housekeepers prefer the dun-colored cod to the pure white fish, because the method of curing it, which turns it dark, makes it richer. A whole fish is always used in this New England dinner.

Scrub the fish thoroughly the night before, using a scrubbing-brush such as is used to scrub ham or potatoes that are cooked in their jackets. Trim the tail and fins off the fish and lay it in a fish-kettle over night, putting the skin side up and covering it with cold water. In the morning take out the fish, pour off the water, wash off all traces of salt in the pan and rinse off the fish. Cover it with fresh cold water and let it come slowly to the boiling point, but do not let it boil. Keep it at the boiling point without boiling for one hour. If it is cooked in this way it will be soft and flaky. Serve it with egg sauce and a garnish of pork scraps.

To make the egg sauce beat two heaping tablespoonfuls of butter with a tablespoon of flour over the fire. When they have melted add slowly a cup of boiling water and stir the mixture slowly until it boils. Then add half a teaspoonful of salt, a little pepper and two hard-boiled eggs chopped fine. The pork scraps are prepared by cutting the fat of clear salt pork into little cubes about half an inch square. Let them stand in a frying-pan at the back of the stove for about 25 minutes until they are perfectly clear. Then bring them forward to the hottest part of the fire and let them fry until they are brown and crisp. A cupful will be required for a fish. Beets, onions and potatoes are usually served with this salt-fish dinner. At this season of the year these root vegetables will be greatly improved by soaking them two hours in cold water, and it will do them no harm to soak them longer. Winter beets, it should be remembered, should be cooked a long time. At least two hours' slow cooking will be none too much. Do not put in salt until the last half hour. Pork scraps are sometimes served as a sort of sauce to take the place of the egg sauce.

Curious Egg Tricks.

Some curious tricks can be performed with eggs prepared in the following way: Pierce an egg with a pin and empty the contents of the shell. When the interior is quite dry, pour into it some fine sand until a fourth of the shell is filled. Then seal the hole with a drop of white wax. You can then place the egg on the edge of a knife or the margin of a decanter, and it will stay where you put it. Take care to shake the egg well before placing it in any of these positions, and thus bring the center of gravity to the place where you desire it to be. To make a disobedient egg, introduce into an empty egg shell some grains of shot and sealing wax. Close the hole and hold the shell over a flame until the wax inside has melted. The shot and wax will then adhere at the bottom of the egg. When cool, place the egg on the table and it will stand upright. The egg will be a source of mystery to your friends, as it will refuse to assume any other position.

Bread and cake bowls, or any dishes in which flour and eggs have been used, are more easily cleaned if placed in cold water after using.

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NOTICE.

The Annual Meeting of the Stockholders of the GRANGERS' BUSINESS ASSOCIATION, a corporation, for the election of a Board of Directors, and for the transaction of such other business as may properly come before it, will be held at No. 108 Davis Street, San Francisco, at 10 o'clock, A. M., Wednesday, April 11, 1894.

CHARLES WOOD, Secretary.

I. C. STEELE, President.

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PATRONS OF HUSBANDRY.

Random Thoughts.

By A. P. ROACHE, W. M. S. G. of California.

Hurry and worry ruins the life
Of the strongest man or the sweetest wife.

Worthy State Lecturer Goodenough has issued his annual circular to subordinate granges. It is brimful of broad and progressive thoughts which should crystallize into practical enactments. Let every grange seriously consider the full import of the thoughts and plans therein expressed, as applied to the present and the possible condition of the farmer.

The efforts of the National Grange legislative committee have had the effect of awakening an interest in saving the experiment stations from death at the hands of those who should be the most active in guarding them. This is not the first time the committee has interposed its unanswerable arguments in behalf of some vital interest to agriculture. The stations, or the laws which created them, were enacted almost wholly through grange influence; yet there are many who claim that the grange has never done anything. Truly, it takes the combined power of both time and truth to conquer prejudice.

The general who would secure the best results from his army must know the position of every brigade and regiment on the field. He can then mass his forces where most needed, strengthen his line of battle or disconcert a flank attack. Just so with the grange; and if those light brigades (those eight granges) which have not yet reported the names of their commanders will do so at once, the uncertainty of their whereabouts will no longer detain the main army for marching orders.

The swiftly moving hands of time
But mark the dial on the chime
That peals the knell to earthly thought,
Where ere our labors may be wrought.

Fanaticism is certainly increasing, and the number of those who have been educated in the fatal principle that "the world owes them a living," has augmented to dangerous proportions, as exemplified in the advance of the industrial army (industrial in what?) toward Washington. Every man in that army who is a voter is equally as responsible for the position he occupies as are those whom he, with only apparent justice, blames for all his ills, and that army should know, if it knows anything, that two wrongs never yet made one right.

But a few days intervene before the time for holding the Congress. Brighten up your thoughts and faces, sisters and brothers, and forget your cares and sorrows for a little time amid the songs, the sights and the pleasures of the Congress at the fair.

A Proclamation.

OFFICE OF THE MASTER,
WATSONVILLE, CAL., March 24, 1894.

Whereas I have been officially notified that the following amendments to the Constitution have been adopted by the constitutional majority of State Granges, hence by the National Grange:

Resolved, That Article I, under the head of "District and County Granges," be amended as follows: By inserting after the word "wives," where it occurs in the third line, the words "or husbands;" and strike out the word "matron" in said line and insert instead "fourth degree members."

Article I, Section 1: By inserting after the word "wives" in the second line "or husbands," and by striking out the word "matrons" in the third line and inserting the words "fourth degree members in good standing;" and adding after the word "wives" in the third line "or husbands," and striking out in the same line the word "matron" and inserting the words "fourth degree members in good standing."

Article I, Section 2: After the word "wives" in the first line insert "or husbands," and strike out the word "matron" in the second line and insert "fourth degree members in good standing."

Article I, Section 3: After the word "master" in the fourth line insert "or his wife or her husband."

NATIONAL GRANGE.

In the second line after the word "wives" insert "or husbands," if fourth degree members in good standing." In sixth line strike out "who are matrons" and insert "or husbands," if fourth degree members in good standing." In seventh line after the word "wives" add "or husband, if fourth degree member in good standing."

I therefore promulgate the same and declare said amendments to be component parts of the Constitution of California State Grange.

In testimony whereof, I have hereto subscribed my name and affixed the seal of the California State Grange this 24th day of March in the year of our Lord one thousand eight hundred and ninety-four.

A. P. ROACHE,
Master of California State Grange.

From Mr. Ohleyer.

YUBA CITY, March 25, 1894.

TO THE EDITOR:—I daresay my silence for some time has added tranquility to your temper, peace to your compositors and rest to your large family of readers. Nevertheless, having had a good week's rest from a rush of visiting and travel, I feel like venturing once again on your whilom indulgence. In one sense there is not much to chronicle from these parts because our fairly prosperous and peaceable community seems to be moving along leisurely in its accustomed groove. In another sense there is much to be said by one having been absent two months at this season of the year when east of the Sierras to the shores of the Atlantic winter is loth to give way to early spring and buds and flowers are yet hidden deep down below the frost line. I remarked that in this sense much might be said, but I did not mean that I could say it. It will indeed require a much more facile pen and romantic mind to even approach the subject as it deserves.

THE EASTERN WINTER

Was a mild one as those winters go; and, while many thousands were out of employment and many subsisting on diminished rations, there was very little suffering from the rigors of winter—a most fortunate circumstance. Cold weather began earlier than usual, as the California delegation to the National Grange at Syracuse early last November doubtless well remember; but all will be surprised to learn that that was about the worst experienced during the entire winter. I think I wrote you that on January 25th I saw plows at work in Pennsylvania and I afterward learned that more or less of the same was practiced in Ohio and other central States. This mild weather continued up to my departure from Chicago on March 15th, when plowing and spring work was well under way. Of course, this long mild weather was interrupted more or less by spirits of snow and frost and icy coldness, but these were moderate and in widely separated localities, and were often exaggerated by the wires, and were always of short duration.

Thus the returning Californian as well as the newcomer is in a placid state of mind concerning the East. He has fared well, and is thankful, and is prepared to fare as well in the Sunset State. At last he drops into the State as from the clouds.

HE CLOSES HIS EYES UPON WINTER SCENES

And opens them on scenes of spring and summer. Yesterday's invisible vegetation is to-day rank with growth and luxuriance; yesterday, grain too short to be visible is to-day from six to twelve inches in height and yet somewhat backward; yesterday no blossoms or swelling buds, to-day the air is fragrant with blooming trees and shrubs and bursting buds. These, dear editor, are the things that always impress themselves on the Californian as he wanders homeward during the vernal season. Frequent repetitions do not serve to lessen the charm, but they always enhance to his mind the wonders of the State of his choice.

When this is true of those who have been here, what shall be said of him or her who first glides down the mountain and almost imperceptibly passes from fall to spring or from winter to summer.

EXPRESSIONS OF DELIGHT

Come with every turn and view, and no eulogy ever written conveyed an adequate description of the scenes now unfolding to the strange beholder, and he is ever ready to exclaim, "The half had never been told."

And do you know, Mr. Editor, that Californians, with all their boasting propensities, hardly realize the wonderful merit of their State and the glorious future in store for it. There are to-day more eyes turned toward California than at any time in 30 years, and, were it not for the hard times, the transportation lines or facilities would require to be quadrupled to carry the people.

CALIFORNIA'S EXHIBIT AT CHICAGO

Was worth more as an educator than all the books ever written. We are told that our stories were doubted until the products were seen and tested. No question was raised as to their origin because no country or State dare claim California's wondrous production as her own. At least one very intelligent lady in my hearing, after rapturously describing those wonderful California peaches in glass jars, wound up by saying, "but of course those were painted," saying they could not have grown with such pure and brilliant colors. I turned away and smiled over this compliment paid to art and nature of our State. Of course they were not painted and can be duplicated a thousand-

fold in Sutter county during the peach season.

Well, I reached home on the 19th inst. in excellent health, and found all well and glad to add a plate for the wanderer. Grain, though somewhat backward, is looking well and has a good stand. Fruits promise well, but the season is also late. The last horticultural meeting discussed the subject of orchard cultivation with profit to the members. "Co-operative Fruit Drying" was also discussed, and will be continued at the meeting next month. Thus you will see our people are moving bravely onward toward the goal of perfection in their chosen lines.

Our grange meets again April 7th, and I understand will execute the usual monthly programme of literary good things. Come all and see us. I am woefully behind in grange matters and California news generally. I have perused with interest late copies of the RURAL and the letter of Bro. Adams on

THE PROPOSED TAX ON INCOMES

In your last issue. I am pleased to remark that I find myself very nearly in accord with the sentiments of Mr. Adams, except that I fail to grasp the object of his shot at "that hideous monster, Free Trade." I judge Mr. Adams is about my own age, and I am quite convinced that the hideous monster cannot under any circumstances catch us on top of the soil, and never will so long as it requires \$500,000,000 to run the Government a year, and which must be raised by import duties. My own mind is not clear, and I cannot afford to attempt to solve a problem so far in advance of its requirement, and I don't care to alarm generations yet unborn. Very truly yours,

GEORGE OHLEYER.

San Jose Grange.

TO THE EDITOR:—The resolution recommending manual training in our public schools elicited speeches from a large number of members and was unanimously passed.

The following preamble and resolutions (introduced by the writer) were thoroughly discussed and passed without a dissenting voice:

WHEREAS, It is reported that the Secretary of Agriculture omitted to recommend an appropriation for the continuance of the Agricultural Experiment Stations in California, and

Whereas, If the annual and necessary appropriations are withheld an incalculable amount of injury would be done, not only in the loss of property at the several stations in the State, but in stopping experiments now in progress which are and have been of great benefit to all branches of agricultural industry in California; therefore be it

Resolved, That our Member in Congress be and they are hereby respectfully requested to use all honorable means to have the usual appropriations by Congress continued.

Resolved, That a committee consisting of R. P. McGlinchey, master; G. W. Worthen, overseer, and M. Wingate, steward, officers of San Jose Grange, are hereby appointed to forward a copy of this preamble and resolutions to our Members in Congress.

Resolved, That the thanks of San Jose Grange are hereby tendered to the Hon. W. W. Bowers, Representative in Congress, for his able appeal to that body for continuing the appropriation for the Agricultural Experiment Stations.

The committee appointed to forward the above to our Members in Congress reported that they had performed that duty. We refer to this report to show that San Jose Grange is not satisfied to pass resolutions and let them lie on the secretary's desk, but they send them where they will do most good.

To-day, the 24th, we had six accessions to our grange—four initiations and two by card.

A very devout brother at our elbow says, "If there is no Providential hindrance," there will be a class of 12 to receive the fourth degree at the meeting of the grange April 7th, to be followed by a harvest feast, to which all grangers are invited. San Jose Grange has long since ceased feeding the hungry at their harvest feasts, who are not members of the order, making these occasions, as it were, a family reunion of congenial spirits of those having a common object in view. After the feast the young ladies, under the leadership of Miss Wells, will give their usual monthly entertainment of reading, recitations, vocal and instrumental music.

When the class of 12 is converted into matrons and husbandmen it will give San Jose Grange a membership of 196, and when it reaches 200 it is the intention of the grange to give a grand jubilee, to which all the big guns among the speakers in the order will be invited. A special invitation will be extended to all who are not speakers, of which due notice will be given.

A resolution was adopted requesting the executive committee to voice the sentiment of the State Grange in favor of further ap-

propriations for Agricultural Experiment Stations. By invitation, Prof. Hilgard will deliver an address before the San Jose Grange Saturday, March 31st, at 2 P. M. (subject, "Fertilizers"), to which all farmers are invited. AMOS ADAMS.

San Jose, March 24th, 1894.

The Secretary's Column.

A letter from the Worthy Lecturer of the National Grange states that he will leave Boston on the 27th and arrive in San Francisco before the 12th of April. We will hear from him from Los Angeles.

Bro. Messer says the grange is on a boom in nearly all sections in his part of the country. The time is at hand for aggressive work, and I am confident that California will be in the front rank, to which he tenders his best efforts.

Bro. John R. Denman of Sonoma county and Sister S. E. Wood of Contra Costa county, who were appointed county deputies of their respective counties by the worthy master of State Grange, have tendered their resignation on account of not having the time to spare that the importance of the position demands.

Selma Grange reports that they will try and have something for the programme for Grange Congress.

Bro. Geo. Ohleyer Sr. returned from the East on the 19th. He will make a special effort to meet with the Committee on Mr. D. Lubin's Novel Plan on Transportation on the 12th. Bro. Ohleyer has been absent from the State two months on public matters, but hopes to soon have leisure to consider California questions independent of personal affairs.

Two Rock Grange will discuss at their next meeting "Good Roads, How to Build Them, How to Maintain Them, and How to Pay for Them."

Millville Grange installed the following officers March 17th: Master, J. S. Edington; Overseer, C. P. Dunham; Lecturer, Mrs. M. W. Webb; Steward, Spencer Hackler; Assistant Steward, J. C. Campbell; Chaplain, Sister Draper; Treasurer, Mrs. M. J. Nichols; Secretary, Miss Katie Webb; Gate Keeper, D. R. Hawes; Pomona, Miss Lena Overmyer; Flora, Miss Nissie Karr; Ceres, Miss Etta Crews; Lady Assistant Steward, Miss Clara Geer. The worthy secretary of this grange reports that they are doing well and increasing in membership all the time. They held a public installation and literary entertainment, and had a good turnout of members and farmers, and think they are on sure footing for another year. This grange is so far from all others that they do not get the assistance that many granges do.

The following granges report members for the reception committee for Grange Congress:

Eden—Bro. H. V. Monsen and Sister Josie Sharai.

Independent—Sister N. A. Fine and Bro. J. A. Drace.

American River—Bro. and Sister G. R. Rodman.

Are you getting ready for the Grange Congress on the 13th and 14th of April, 1894? A good time is assured.

Hon. M. H. de Young, director general, has accepted the invitation to deliver the address of welcome.

I have not as yet received the "Grange Melodies" ordered from the East some time since, but as soon as they arrive will immediately fill the orders now awaiting.

Pennsylvania is one of the leading grange States, with nearly 30,000 members.

There are 614 granges in New York State, with 35,000 members. Net gain in membership during 1893 was 1509.

The grange is in a prosperous condition in all the Eastern and Northern and in some of the Western and Southern States.

There are at present more than 1000 granges in the New England States, with 60,000 members; also 300 Pomona Granges, with a total of 35,000 members.

The Grange Visitor says the legislative committee of the National Grange, in pursuance of their duties, have been to Washington, and have had hearings, and have been respectfully listened to by committees before which they appeared and in whose hands were being considered various subjects of deep interest to the farmers of the United States. What influence they had in shaping legislation remains to be seen. The farmers may be sure of this, however; that such earnest and candid men as Col. Brigham and Leonard Rhone would not fail to place the true facts before committees so that they need not act blindly, and the grange may feel proud of the fact that it is

(Continued on page 258.)

Breeders' Directory.

Six lines or less in this directory at 50c per line per month.

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F. H. BURKE, 628 Market St., S. F. A1 Prize Holsteins; Grade Milch Cows. Fine Pigs.

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R. H. ORANF, Petaluma, Cal. Breeder and Importer. South Down Sheep; also Fox Hounds from Missouri.

SWINE.

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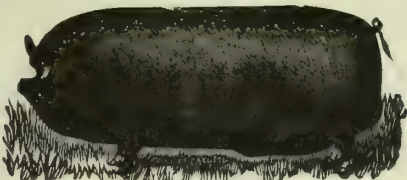
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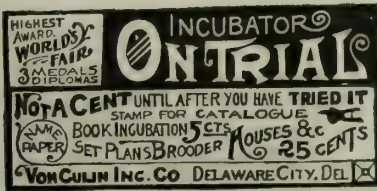
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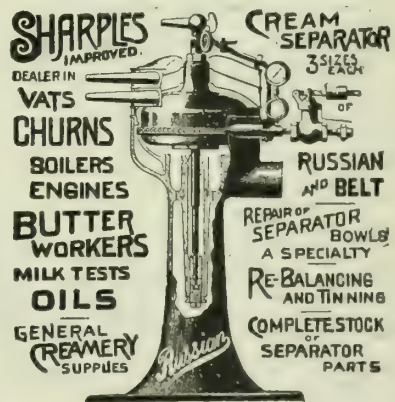
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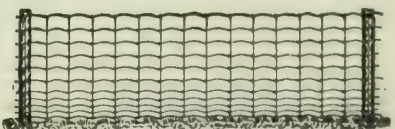
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AGRICULTURAL NOTES.

CALIFORNIA.

Butte.

The Sutter Farmer thus reports a recent meeting of fruit-growers at Biggs, Butte county: Last Saturday there was an enthusiastic meeting of fruit-growers at Biggs, called for the purpose of discussing a local fruit exchange. Representatives from the principal fruit districts of Butte county were present, and all were unanimous for an exchange. Sutter county was represented by C. E. Williams and B. F. Walton. From the sentiment expressed the growers favored establishing one exchange, for the present at least, in this part of the State, to be known as the Sacramento Valley Fruit Exchange, with the principal place of business at this place. To perfect all arrangements another meeting will be held in Yuba City on Saturday, the 31st inst., at which time the organization will be made. In the vicinity of Biggs, Chico, Gridley and Rio Bonito, there will be a large number of shares taken, and if the present idea is carried out the exchange will represent in the neighborhood of 5000 acres of bearing fruit trees. This exchange will work in unison with the State Exchange, and will probably have local drying associations, etc., in connection with the organization.

Colusa.

The Colusa Sun says: Thursday evening we were shown samples of wheat from the Bedell tulle ranch that is the finest we have seen this year. It is of the Pride of Butte variety. The Bedell Bros. have 320 acres of this wheat, which will no doubt yield 30 or more sacks to the acre. It stands three feet in height.

Contra Costa.

Contra Costa Gazette: A sprout from a two-year-old cherry tree of the Royal Ann variety is on exhibition in W. R. Matthew's real estate office, the growth of one year, which measures seven feet six inches in length. It takes climate and soil to do that.

Fresno.

Sanger Herald: A thrifty foothill rancher was in Sanger on Friday last with a four-horse wagon load of Winesap, Ben Davis and other varieties of apples. The whole load was disposed of in a short time at three cents per pound, and he went home with a pocketful of coin. The best apples are grown on the mountain ranches, and their good keeping qualities bring them into market at a time when other fruits are scarce; consequently, top prices are obtained.

Kern.

Bakersfield Californian: The season of 1884-85 promised to be a very dry one, and those who talked about raising wheat on unirrigated land were looked upon as visionary. An amusing incident occurred to a farmer on the north side. He had decided to sow 100 acres to wheat, and did so early in January on dry land. When talking about it to a friend the latter said: "If I had my way you should have neither land nor seed, for you will waste your substance." "I don't want your land. I won't have your seed. I will gang my ain gait and it will be me and nature for it." So he went ahead. In the middle of February light rains having fallen and the wheat having grown to four or five inches high, he sowed alfalfa seed, 12 pounds to the acre, dragging it in with a heavy harrow. Favoring rains fell in February and April, and in June he harvested 207½ tons of wheat hay. Then he irrigated and in July cut 196 tons of alfalfa. Furthermore, in the last of October he sold the growing crop for \$4 an acre for pasturage purposes. He sold the entire product, and his total receipts from 100 acres of unirrigated land, right in the face of an expected dry season, were \$4943, or \$49 43 per acre.

Los Angeles.

Ontario Record: The Pomona Progress is trying to figure out how the Earl Fruit Company can offer to pay \$1.10 for Ontario Navel in the orchard, grade and pack the fruit and then sell it in the Eastern market for \$1.25, f. o. b., with a discount of 25 cents per box for off sizes. The problem is too deep for us, but the only rational explanation seems to be that Earl is willing to sell fruit at less than cost in order to break up the associations. It takes a long purse to keep up that sort of business any length of time. And the fruit-growers who furnish oranges for that purpose don't look far into the future. Once let the commission men get control of the market again and there won't be any \$1.10 offered or anything else; the growers will simply be asked to consign.

Pasadena letter in Los Angeles Times: The Pasadena Fruit Association has made plain its plans and purposes in full by publishing a list of the central exchanges and the articles of incorporation and by-laws of the local association. Commenting upon the subject, Dr. Lyman Allen, secretary of the Pasadena association, states that this system is to serve its members, and its objects are to find profitable markets for their fruits, and, in order to do this, to make suitable arrangements for gathering, curing, packing and shipping the same; to establish uniformity in grading and packing so as to build up a reputation for our fruit in distant markets; to keep informed of the condition of the markets so that we may know and fix the valuation of our products; to properly distribute our products so that there shall be no glut at some points and lack of supply at others; to become acquainted with reliable dealers in all principal cities; to so manage that none of our fruit shall be consigned, but that it be sold f. o. b. at prices fixed by us; to deal with stockholders justly, so that each shall have equal opportunity to sell and shall receive the same prices for like products, quality and grade considered; to secure the lowest freight rates possible; to reduce the cost of handling and packing by proper appliances and by economy of management and to reduce to a minimum the cost of getting the fruit from our orchards to the distant consumers. The f. o. b. sales are made mostly on 30 days; auction sales are for cash. The grower gets most of his pay in about 30 days from date of shipment, a small balance to be paid at the close of the season for the kind of fruit sold.

Napa.

Napa Register: A large acreage has been set to fruit trees in this county this season. Mr. Coates, of the Napa Valley Nurseries, has planted out three

orchards for new settlers—one of 25, another of 15 and another of 40 acres—also 20 acres of the Veterans' Home Farm. The prune is the variety most drawn upon. Pears and olives are next in favor.

Orange.

Anaheim Gazette: At a meeting of the Orange County Fruit Exchange at Orange last Tuesday, which was probably the most important meeting of orange-growers ever held in the county, the Tustin association reported that it had sold its crop, estimated at something above 200 cars, to the Earl Fruit Company at association figures and subject to the rules of the Exchange. The association pays five cents per box into the Exchange in accordance with the rules, which brings the Exchange \$3000 as a pro rata of the Tustin assessment for maintaining the unity of the orange-growers. The boxes will bear the association brand and will go out as Exchange fruit. There are not lacking rumors, moreover, to the effect that Earl will be entirely satisfied to deal with the associations after this, and that he is quite content to end his fight against them, acknowledging them to be heavier than he thought they were, and to call it square. That the associations have done good work is evidenced by the fact that three or four commission houses are eager to purchase all the remaining fruit in Orange county. The Exchange has appointed a committee of five to receive their bids and report at the next meeting to be held next week. As indicative of the prices that are likely to prevail, we might mention that Earl offered \$1.25 for Mediterranean Sweets on the tree at Villa Park the other day, when Thacker immediately raised him to \$1.50. The price of oranges is on the up-grade, and we have the assurance of one of the best posted growers in the county that prices will raise 50 or 60 cents, and in cases as high as 75 cents per box over the present figure in the next two weeks.

Orange county letter in Los Angeles Times: The sale of the orange crop in bulk of the several local fruit associations is still hanging fire. The Orange County Exchange met in regular session Tuesday morning, and behind barred doors proceeded to transact the business that was brought before it in regular order. The session continued throughout the day, and is unofficially reported as being a very interesting one. No decision, however, was reached as to the disposal of the fruit in bulk to the fruit companies, although a number of bids are known to have been made upon it. At the present time the demand for Orange county oranges is greater than the supply, although several of the local associations are picking, packing and shipping as rapidly as possible. From present indications, it looks as though all the local associations will sell their crops in bulk to the fruit companies at fair prices. At the present time, prices are increasing.

Placer.

The Argus says that the recent cold snap did not harm the fruit districts.

Riverside.

The Los Angeles Times says: It is a common thing just now to hear people talk as if orange-growing in southern California was no longer a remunerative business. For the past two or three years many growers have been telling us that the industry would not pay expenses. The Earl Fruit Company has prepared the following statement, showing the actual net amount per acre after deducting freight and packing, commissions, etc., realized by the principal Riverside shippers last season:

Name.	Net average per acre.
G. B. Norton.....	\$299
J. Vande Grift.....	307
J. J. Hewitt.....	609
P. T. Evans.....	257
Mrs. J. E. Evans.....	143
S. C. Evans, Sr.....	165
S. J. Ford.....	155
J. M. Olenford.....	441
Frank Edwards.....	189
F. V. Gilbert.....	393
S. C. Evans, Jr.....	138
J. Walters.....	179
C. G. Atwood.....	331
J. and S. A. Crawford.....	200
E. I. Scarborough.....	181
George Crawford.....	207
G. H. Dole.....	232
Halstead Bros.....	280
DuBois & Carter.....	136
Mrs. M. A. Ball.....	279
L. F. Darling.....	647
Backus & Shepard.....	389
Hutson & Butcher.....	282
E. and J. Copley.....	302
M. H. Crawford.....	240
Hill Bros.....	79
Roswell Hart.....	270
R. D. Osborne.....	383
Mrs. C. Bettner.....	240
H. Redfield.....	173
J. E. Todd.....	457
Mrs. L. S. Gilliland.....	217
G. W. Garcelon.....	306
Mrs. J. K. Magee.....	157
M. Hoover.....	301
J. Allen.....	262
Mrs. J. Brethour.....	310
L. E. Lee.....	355
S. R. Kearne.....	171
J. W. Holling.....	266

The general average of these figures is \$234 net per acre, or about 23 per cent on a valuation of \$1000 per acre. This exhibit shows that the growers netted \$78,000 for the oranges grown upon 330 acres (about half a section) of land at Riverside last season. This is a statement with "names given." The names are mostly of prominent persons in that section, and it will be easy to verify the accuracy of the figures. It should be remembered that these results were attained when there was a universal growth among growers at the demoralized condition of the market, a growth which resulted in the formation of the Orange-Growers' Association. Surely such net returns as these ought to be considered good, and if the organized growers can increase them, so much the better. The fact should set at rest the idle talk about the orange industry in this section being played out. Such talk has already done much harm to this section among Eastern people, many of whom have been diverted from southern California to other sections, as there is a widespread idea among Eastern people that oranges are about all we grow here to any extent, and that if oranges no longer pay there is nothing left. Of course this is not true. There are many profitable crops raised here besides oranges. Neither is it true, as we have shown, that orange-growing is no longer profitable. The best way to counteract these damaging reports

is to publish the facts and figures in the case, as we do here.

San Bernardino.

Ontario Record: The San Antonio Exchange has advanced the price on Navel 25 cents a box, and the officers are much encouraged over the outlook for the balance of the season. The fruit is moving well and at prices as satisfactory as could have been expected. The Ontario Exchange is making heavy shipments, and the fruit is winning favor wherever it goes. The growers must remember that all Exchange fruit that goes from here is marked Ontario in big, plain letters. Looking to the future, it is of the highest importance that we establish a reputation as a locality under our own brand. . . . The Lemon-Growers' Exchange shipped two carloads of lemons East last week, and the outlook for sales is good. . . . Some unscrupulous commission firm has shipped a carload of frozen oranges to Hartford, Conn., under an Ontario brand. No shipments have been made by the Exchange to that point, and steps have been taken to learn the name of the concern that has given Ontario a black eye in that important city.

San Diego.

Frank Ennis of Petaluma writes as follows to the San Jacinto Register: There is some difference of opinion among successful poultry-raisers as to the amount of land required for 100 fowls. Some say one acre and others two. I incline to two acres as little enough. This thing of trying to raise 200 head of poultry on one acre of land is a great mistake, for the soil soon becomes foul and the poultry gets sick. Then troubles begin. Give them plenty of range and there is no question about them paying, all things being equal. One dollar a head per year is a good profit from a hen, compared with the profit of farming these days. One man can take care of 500 head, provided he will work ten hours every day. There is nothing that needs more care and attention than it does to raise poultry successfully.

Santa Cruz.

Watsonville Pajaronian: It is expected that the beet factory campaign will commence this year before August 1st. With the acreage guaranteed, the aggregate crop, even with but an average season, should not be less than 100,000 tons.

Solano.

A Morning Light correspondent writes as follows to the Solano Republican: Summer-fallowed grain looks well, but winter-sown grain is somewhat spotted. The long cold spell has had its effect in low places and has injured the late grain to a considerable extent.

Tulare.

Visalia Times: Johnson grass or evergreen millet when once established in a field is very likely to become a nuisance. Here is a recipe given that is warranted to kill out the grass for good: Take one pound arsenic and three pounds soda. Dissolve thoroughly in ten gallons of water and then sprinkle about over the grass like a heavy dew. If not too bad, the second application will kill every bit of the grass. The worst cases may require a third sprinkling. Bermuda grass may be killed in the same way.

Tulare Register: The sheep men on the west side of the valley are nearly ruined and their flocks are dying. There is almost no feed at all for them on the ranges and they have no money with which to buy feed, so their case is really desperate. They have lost nearly all their lambs, and when they resort to their old-time predatory methods and undertake to forage on the alfalfa fields of civilization they are hauled up with a short turn and made to pay ruinous damages. Those who have alfalfa fields can make a pretty turn now by getting sheep to keep on shares, or buying low and keeping the sheep until a better market follows the defeat of the Wilson bill.

Tulare Times: J. J. Cairns of Lindsay has reduced his acreage of wheat to about 12,000 acres this season compared to about 19,000 acres last season. His neighbor, G. S. Berry, has made a slight increase this year, having 4000 acres, to 3500 acres last year.

Ventura.

We have been requested to ascertain the cost to a tenant paying one-fourth crop rent of raising barley in this valley and delivering same at Hueneme, says the Herald. The several figures obtained vary but little, the average being about as follows:

Cost of seed, 80 lbs., at 60c.....	.48
Plowing and seeding.....	1.50
Threshing, 15 cents, ad 120.....	.60
Sacking, 14 at 7c.....	1.90
Hauling at \$1 per ton.....	.75

Total cost of one acre, yielding 1500 lbs.....\$6.18

Out of this the tenant pays 3½ cents for rent, leaving him 11½ cents, costing \$6.18, or 55 cents per cental at Hueneme. The land-owner would have to get a pretty big price for his rental to pay him any sort of interest, all of which goes to prove that there is no money in raising barley at the present figures, and unless barley prices improve there is sure to be a large increase in the acreage planted to beans.

Yolo.

A Capay correspondent writes to the Woodland Democrat that young orchards are in a very thrifty condition and many new ones come into bearing this season. The trees planted this season appear to be doing well. The older fruit trees promise to be heavily laden with fruit. Especially is this true of apricot trees. Another tract of 220 acres is to be cut up into five-acre lots and sold to actual settlers.

Mr. B. Griffin of Winters reports to the Democrat that prospects in his section were never so promising for an immense yield of fruit.

Woodland Mail: H. C. Howard of this place has been in communication with Philo Hersey, of San Jose, manager of the Fruit Exchange, with a view to getting him here for the purpose of explaining the workings of this highly successful organization. Mr. Hersey has replied that he will be unable to be present owing to a press of private and public work. Mr. Hersey suggests that Mr. E. F. Adams, manager of the State Fruit Exchange, be invited to meet the Yolo county fruit men. Mr. Howard has not heard directly from Mr. Adams, but he will undoubtedly accept the invitation and will in the near future be in Woodland to explain to local growers the advantages of co-operation.

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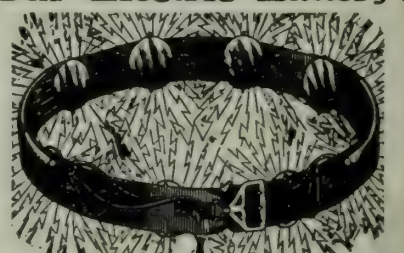
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- 12 Roses,
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- 15 Heliotropes,



- 20 Assorted Summer Flowering Plants,
- 12 Dahlias,
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- 10 Oleanders,
- 24 Pansies,

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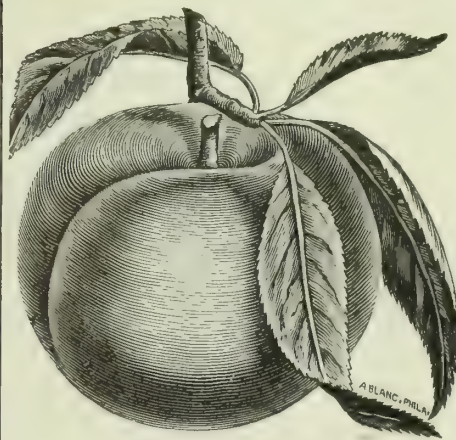
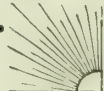
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LEMON TREES FOR SALE.

I have some 15,000 Lisbon and Eureka Lemon trees,
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NATHAN W. BLANCHARD, Santa Paula, Cal.

—Representative Wilson of Washington is making inquiries as to the contract which the Treasury Department is said to have made with the British Coal Company for supplying \$100,000 worth of coal to United States vessels which will patrol Behring sea. Wilson regards the contract as a discrimination favorable to British interests. He says it is specially objectionable in view of America's contention with Great Britain over the Behring sea. Wilson has unofficial information that the contract was made with the Comox mines on Vancouver island, although there are abundant coal supplies in the Puget sound country.

—A census bulletin shows that there are in California 7923 manufacturing establishments. The aggregate capital invested is \$146,797,162, live assets \$66,792,498, averaging number of employes 83,642, total wages \$51,538,780. Operatives, skilled and unskilled—Males above 16 years 50,569, wages \$32,913,974; females above 15 years 6978, wages \$2,130,192; children 1513, wages \$216,478; piece-workers—Males above 16 years 8496, wages \$4,674,798; females above 15 years 4806, wages \$1,158,850; children 344, wages \$33,626. Cost of material used, \$120,241,025; value of products, including receipts from custom work and repairing, \$213,404,091.

—Representative Loud has been making a strong effort to secure an appropriation of \$5000 for the survey of the harbor of San Francisco. Chairman Sayers of the Appropriation Committee was unwilling to grant this amount of money, but now he has made a proposition to Loud that he will direct the superintendent of the Geodetic Survey to make this survey and this would do away with the necessity of any special appropriation. Loud immediately acceded to this proposition and the survey will be made. Loud has also succeeded in getting the promise of \$10,000 for a coast and pilot chart of the whole Pacific Coast, to be issued monthly. Many petitions have been sent to Congress from California to secure the publication of this chart.

—A dispatch from San Diego says that Herbert L. Emery has sold his ranch in Pine Valley to the Pine Valley Consolidated Water and Land Company, together with the well-known Pine Valley reservoir site and water rights, where surveyors have reported that a perfect title exists for a dam that is capable of impounding eight billion gallons of water, two billions more than the Sweetwater reservoir. The Pine Valley Company, which is composed of Emery, his brother, General Eli H. Murray and others, is about to make arrangements to develop water rights on the land and to take advantage of the reservoir site. The dam as proposed to be built will be 125 feet in height, but it can be extended to 150 feet if desirable. The reservoir site is an oval valley containing eight miles of land, ending in a narrow canyon with steep sides, and level and continuous bedrock, so far as inspected.

—An important contract was recently entered into by the San Carlos Coal Company of Pittsburg and the Southern Pacific Railroad Company, by the terms of which the former, owning extensive coal lands in Texas, is to furnish the railway company with 115,000 tons annually, 315 tons per day. The transaction also embraces the building of a railroad twenty-six miles in length, at a cost of \$300,000. The property on which the company is now operating consists of 1280 acres of land in Presidio county, Tex., acquired by purchase in fee from the State of Texas, all of which is underlaid with coal, and 55,120 acres held by the company under a lease from private owners in fee for the term of thirty years from May 16, 1892. In addition to this, the company has a lease for twenty-five years on 2,000,000 acres of land situate in the district of Iturbide, Republic of Mexico, on the Rio Grande. Prospecting has been carried on in the Mexican property sufficiently to determine that it contains a bed of coal about fifty miles in length, and from ten to fifteen miles in width. The vein is forty-one inches thick, and of good quality and semi-bituminous in character. It is said that at the mines now open the San Carlos Company can get \$2.50 per ton for coal on the car, and the profit will be about \$1 per ton.

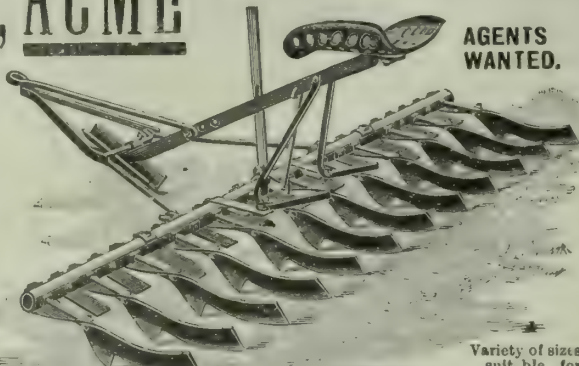
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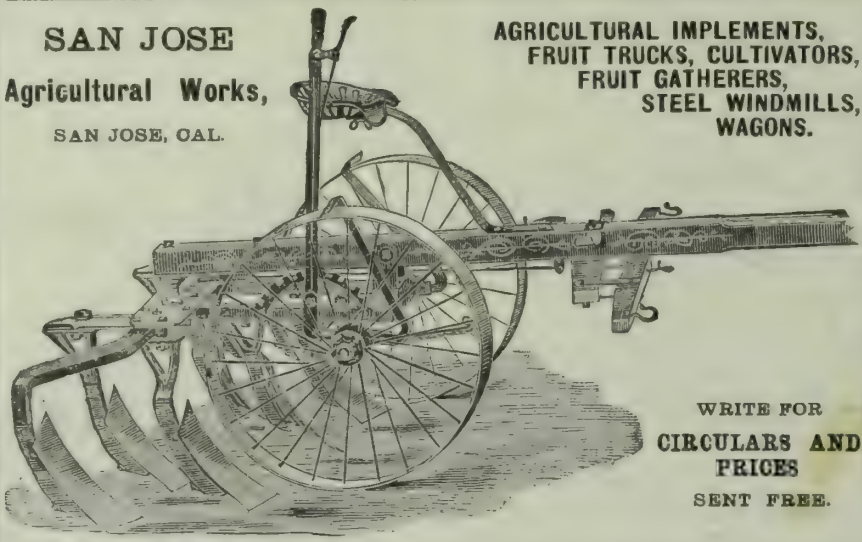
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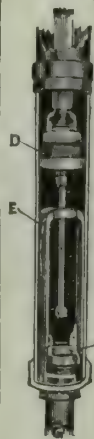
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Assaying of Ores, \$25; Bullion and Chlorination Assay, \$25; Blow pipe Assay, \$10. Full course of assaying, \$50. ESTABLISHED 1864. Send for circular.

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OLIVE DIP.**

**"Greenbank" Powdered Caustic
Soda and Pure Potash.**

T. W. JACKSON & CO.,

Sole Agents,

N 5 Market Street, San Francisco, Cal.

S. H. MARKET REPORT

Market Review.

SAN FRANCISCO, March 28, 1894.

In the local wheat market during the past week interest has settled in a controversy in the Call Board, of little value save to speculators. Quotations are altogether nominal, in the absence of any shipping business of consequence. Valued from the Call Board standpoint Shipping Wheat is worth 92½¢ @ 95¢ # ctl, but exporters claim that 90¢ @ 91½¢ would be nearer the shipping price, compared with rates ruling at Liverpool. Milling grades are offering at a range of 97½¢ @ \$1.05 # ctl.

Jump in Chicago Market.

Just as we go to to press on Wednesday evening comes the following dispatch, which should have a harp effect for the better on the local market:

CHICAGO, March 28.—Wheat jumped 3 cents o-day on the prospects of the cold wave. The care started a wild rush to cover among the shorts, and with heavy trading the pit was a scene of wild confusion. May started only ¼ higher than last night's close at 58½¢, but the cold wave scare took possession of the crowd almost at once, and the price went up by long jumps till it touched 51¼¢. At that point the longs began to take profits in droves, and the offerings soon caused the price to sag off to 50½¢, the market becoming quiet and steady at about those figures.

Barley.

Offerings are rather slim at the moment, while prices are developing stronger tone. The want of rain in many growing sections is causing uneasy feeling and holders of stock are more tenacious in regard to asking prices. It is possible that a parcel of feed might be picked up at 75¢ # ctl, but it would be poor quality, as 77½¢ to 80¢ was the asking range this morning for anything that was desirable. Brewing descriptions are not in urgent request, though prices keep firm, in sympathy with the general market. We quote: Feed, 75¢ @ 77½¢ # ctl. for fair to good quality and 78½¢ @ 80¢ for choice bright; brewing, 87½¢ @ 92½¢ # ctl.

Dried Fruits.

The weather conditions in Eastern fruit districts, reported and commented upon elsewhere, must very soon affect values of dried fruits for the better. Unless the reports shall prove to be exaggerated (and that is not expected) there is bound to be better demand and better prices for California dried fruits of last season still unsold.

More attention is being given to Prunes, and there is promise of stocks being steadily reduced. We quote as follows: Apples, 5¼¢ @ 6¢ # lb for quartered, 5¼¢ @ 6¢ for sliced, and 8¢ @ 9¢ for evaporated; Pears, 4¢ @ 8¢ # lb for bleached halves, and 3¢ @ 5¢ for quarters; bleached Peaches, 7¢ @ 9¢; sun-dried Peaches, 5¢ @ 6¢; Apricots, Moorpark, 11½¢ @ 12½¢; do Royals, 10¢ @ 12¢ for bleached and 6¢ @ 7¢ for sun-dried; Prunes, 4¢ @ 4½¢ # lb for the four sizes, 4½¢ @ 5¢ for the five sizes, and 2¼¢ @ 2½¢ for small; Plums, 4¢ @ 4½¢ for pitted and 1½¢ to 2¢ for unpitted; Figs, 3¢ to 4¢ for pressed and 1½¢ to 2¢ for unpressed; White Nectarines, 7¢ to 8¢; Red Nectarines, 6¢ to 7¢ # lb.

RAISINS—Supplies more than enough to meet all demands. We quote as follows: London Layers, 75¢ to \$1.15; loose Muscates, in boxes, 50¢ @ 75¢; clusters, \$1.50 to \$1.75; loose Muscates, in sacks, 2¼¢ to 2½¢ per pound for 3 crown, and 2¢ for 2 crown; Dried Grapes, 1½¢ to 1¾¢ per pound.

General Produce Market.

OATS—The market is rather bountifully supplied, while custom does not develop in proportion to the receipts. As a consequence, stocks continue to accumulate, to the disadvantage of sellers. We quote: Milling, \$1.00 @ \$1.10; Surprise, \$1.17½¢ @ \$1.25; fancy feed, \$1.12½¢ @ \$1.15; good to choice, \$1.02½¢ @ \$1.10; poor to fair, 80¢ @ 95¢; Black, nominal; Red, nominal; Gray, 95¢ @ \$1.05 # ctl.

CORN—Receipts for a time have been rather slim, while the demand has been steady, causing the market to clean up pretty well and giving more tone to values. In fact, it is a long while since sellers had the situation so much in their favor as it is just now. Quotable at \$1 @ \$1.05 # ctl, for Large Yellow, \$1 @ \$1.05 for Small Yellow and \$1.15 @ \$1.25 for White.

CRACKED CORN—Is higher. Quotable at \$22.50 @ \$23.50 per ton.

CORNMEAL—Millers quote feed at \$22 to \$23 per ton; fine kinds for the table, in large and small packages, 2¼¢ @ 3¼¢ per pound.

OILCAKE MEAL—Quotable at \$37.50 per ton from the mill.

SEEDS—Alfalfa is scarce and higher. Offerings of Mustard are light. Prices are steady. We quote: Mustard, brown, \$2 to \$2.25; Yellow, \$2.65 @ 2.90; Trieste, \$2.25 @ 2.50; Canary, imported, \$4 @ 4.25; do, California, —; Hemp, 3¼¢ # lb; Rape, 1¼¢ @ 2¼¢; Timothy, 6¼¢ per lb; Alfalfa, 9¼¢ @ 11¢; Flax, \$3 @ 3.25 per ctl.

MIDDLINGS—In large supply at the moment. Quotable at \$16 @ \$18 per ton.

MILLSTUFFS—We quote: Rye Flour, 3¼¢; Rye Meal, 3¢; Graham Flour, 3¢; Oatmeal, 4¼¢; Out Groats, 5¢; Cracked Wheat, 3¼¢; Buckwheat Flour, 5¢ @ 5¼¢; Pearl Barley, 4¢ @ 4¼¢ per lb; Normal Nutrient, \$3 per case of 1 doz'n cans; Breakfast Delight, \$3.25 per case of 2 dozen packages.

BRAN—Nearly 7000 sacks came down from Oregon and Washington yesterday. Quotable at \$13.50 @ \$14.50 per ton.

HAY—First-class Wheat and strictly choice Oat descriptions are in demand at full figures, while there is fair demand for all other offerings. Receipts are none too heavy and the market is considered by dealers to be in good shape. Following are wholesale city prices for rope-bound hay: Wheat, \$9 @ 13½¢; Wheat and Oat, \$9½ @ 13¢; Wild Oat, \$9 @ 12¢; Alfalfa, \$8 @ 10.50¢; Barley, \$9 @ 11¢; Compressed, \$8½ @ 12¢; Stock, \$7 @ 8¢ per ton.

STRAW—Quotable at 65¢ @ 75¢ per bale.

HOPS—Quiet at 14¢ @ 16¢ per lb.

RYE—Quotable at 92½¢ @ 97½¢ # ctl.

BUCKWHEAT—Quotable at \$1.15 @ \$1.20 # ctl.

GROUND BARLEY—Quotable at \$17 @ \$18 per ton.

POTATOES—Liberal supplies. We quote: Sweets, 50¢ @ \$1.50 # ctl; Early Rose, 30¢ @ 50¢; River Burbanks, 30¢ @ 40¢; River Red, 20¢ @ 30¢; Salinas Burbanks, 75¢ @ 90¢; Oregon Burbanks, 50¢ @ 80¢; Oregon Garnet Chiles, 50¢ @ 75¢ # ctl.

ONIONS—Quotable at \$1.50 @ 2¢ # ctl for California, with higher figures for choice Oregon, say, \$2.25 @ 2.40.

DRIED PEAS—We quote: Green, \$1.25; Blackeye, \$1.60 @ 1.70; Niles, \$1.50 @ 1.75 # ctl.

BEANS—Prices show buoyant tendency, owing to continued dry weather in growing sections. We quote as follows: Bayos, \$1.90 @ 2¢; Butter, \$1.75 @ 1.90 for small and \$2 @ 2.20 for large; Pink, \$1.40 @ 1.65; Red, \$1.95 @ 2¢; Lima, \$2.40 @ 2.50; Pea, \$2.25 @ 2.35; Small White, \$2.10 @ 2.25; Large White, \$2.05 @ 2.15 # ctl.

VEGETABLES—The market was deluged with Asparagus yesterday. Receipts footed up 464 boxes, while 150 boxes were carried over from the day before. Prices further softened in consequence. Rhubarb now sells by the box, owing to increasing supplies. Arrivals yesterday were 429 boxes. Green Peas hold up fairly well. Cucumbers are in slim offering, selling at a wide range, as to quality. Tomatoes now on the market are mostly inferior. String Beans are neglected, not being attractive. Choice consignments would likely sell at an advance on the quoted figures. We quote as follows: Cucumbers, 50¢ @ 60¢ per dozen for common and 75¢ @ \$1.50 for good to choice; Asparagus, 3¢ @ 5¢ # lb for the ordinary run and 6¢ @ 8¢ for fancy; Mushrooms, 10¢ @ 15¢ # lb; Rhubarb, \$1 @ 1.25 # box; Green Peas, 5¢ @ 7¢ # lb; String Beans, 20¢ @ 30¢ # lb; Marrowfat Squash, — # ton; Hubbard Squash, \$10 @ 15 # ton; Green Peppers, 25¢ @ 30¢ # lb; Tomatoes, \$1 @ \$1.50 # box for poor to fair and \$2 @ 2.50 for good to choice; Turnips, 75¢ # ctl; Beets, 75¢ # sack; Parsnips, \$1.25 # ctl; Carrots, 35¢ @ 40¢; Cabbage, 35¢ @ 40¢; Garlic, 1¼¢ @ 2¼¢ # lb; Cauliflower, 60¢ @ 70¢ # dozen; Dry Peppers, 10¢ @ 12¢ # lb; Dry Okra, 15¢ @ 20¢ # lb.

FRESH FRUIT—Stocks of really good Apples are cleaning up, the demand being active and steady. We quote: 50¢ @ 75¢ # box for common, 85¢ @ \$1.25 for fair to good, and \$1.50 @ 2¢ for choice to fancy.

CITRUS FRUIT—Prices have steadier tone, especially for an article that is sound. Frosted and scaly offerings are neglected. We quote lots as follows: Fair to choice Navel Oranges, \$1.50 @ 2.35 per box; Seedlings, \$1.10 @ 1.75; Mexican Limes, \$3.50 @ 4¢ # box; California Limes, 50¢ @ 60¢ for small box and 75¢ @ \$1 for large; Lemons, Sicily, \$4 @ 5; California Lemons, 75¢ @ \$1 for common and \$1.25 @ 2¢ for good to choice; Bananas, \$1.50 @ 2.50 per bunch; Hawaiian Pineapples, \$2.50 @ 3; Mexican Pineapples, \$3 @ 3.50 per dozen.

NUTS—Slow business. Prices vary but little. We quote as follows: Chestnuts, 6¢ @ 8¢ # lb; Walnuts, 6¢ @ 7½¢ for hard shell, 8¢ @ 9¢ for soft shell and 8¢ @ 9¢ for paper shell; Chile Walnuts, — @ —; California Almonds, 10¢ @ 11¢ for soft shell, 6¢ @ 7¢ for hard shell and 11½¢ @ 12½¢ for paper shell; Peanuts, 3¢ @ 4¢; Hickory Nuts, 5¢ @ 6¢; Filberts, 10¢ @ 10½¢; Pecans, 5¢ @ 8¢ for rough and 8¢ @ 10¢ for polished; Brazil Nuts, 10¢ @ 11¢; Cocoanuts, \$5 @ \$5.50 # 100.

HONEY—Comb is steady under moderate offerings. The dry weather is expected to soon have influence on the market favorable to sellers. We quote: Comb, 10¢ @ 11¢ # lb for bright and 8¢ @ 9¢ for dark to light amber; water white extracted, 4¼¢ @ 5¢; amber extracted, 4¼¢; dark, 4¼¢ # lb.

BEEWAX—Quotable at 26¢ @ 28¢ # lb.

BUTTER—Prices are soft, the receipts still being in excess of market wants. Any immediate change in favor of sellers is not anticipated. We quote: Fancy Creamery, 19¢ @ 20¢; fancy dairy, 17¢ @ 17½¢; good to choice, 15¢ @ 16½¢; common grades, 14¢ @ 14½¢ # lb; store lots, 12¢ @ 13¢ per lb.

CHEESE—The tendency of the market continues favorable to buyers. We quote: Choice to fancy, 10¢ @ 11¢; fair to good, 9¢ @ 9½¢; Eastern, ordinary to fine, 13¢ @ 14½¢ # lb.

EGGS—Prices have again declined, receipts continuing large. We quote: California ranch, 14¢ @ 15¢; store lots, 12¢ @ 13¢ # dozen.

POULTRY—The market took a change yesterday in favor of sellers and several descriptions were marked up in price. We quote: Live Turkeys—Gobblers, 11¢ @ 12¢; Hens, 12¢ @ 14¢; dressed Turkeys, 12½¢ @ 14¢ # lb for Gobblers and 16¢ @ 17¢ for Hens; Roosters, \$4 @ 4.50 for old and \$6 @ 7 for young; Broilers, 3¼¢ @ 5¢; Hens, \$4½ @ 6¢; Ducks, \$4.50 @ 6¢; Geese, \$1.50 @ 2¢ pair; Pigeons, \$2 @ 2.25 # dozen.

GAME—Trade drags. We quote as follows: Gray Geese, \$1.50 @ 2¢; White Geese, 75¢; Brant, 50¢ @ \$1; Honkers, \$2.50 @ 3¢; Hare, 75¢ @ \$1; Rabbits, 75¢ @ \$1.25 # doz.

WOOL—Some new Wools are reaching here and attract little or no attention, as the demand is so limited at the Eastern centers that our usual operators have no incentive to do business. The weekly report of Thos. D. Migan, Son & Co. says: "One or two scourers are doing some business, but not sufficient to take up any very large quantity of stock. Last year at this time the outlook was very hopeful. Receipts were large, and we had a large number of shippers, while every scouring mill here was employed. To-day there are no shippers. Only a couple of scourers out of half a dozen are running. Wool is dull at about half the range of prices ruling a year ago, and prospects look bad for the Wool trade for some time to come. Sales for the week of 75,000 lbs." We quote spring: Year's fleece, per lb., 6¢ @ 7¢; Six to eight months, 7¢ @ 10¢; We quote fall: Free Mountain, 5¢ @ 7¢; Northern defective, 5¢ @ 6¢; Southern and San Joaquin, 3¢ @ 4¢.

San Francisco Meat Market.

The several descriptions are in liberal supply and the outlook is promising for steady receipts for a while. Following are the rates for whole carcasses from slaughterers to dealers:

BEEF—First quality, 5¼¢; second quality, 4¼¢ @ 5¢; third quality, 3¼¢ @ 4¼¢ # lb.

CALVES—Quotable at 4¢ @ 5¢ for large, and 5¢ @ 8¢ # lb for small.

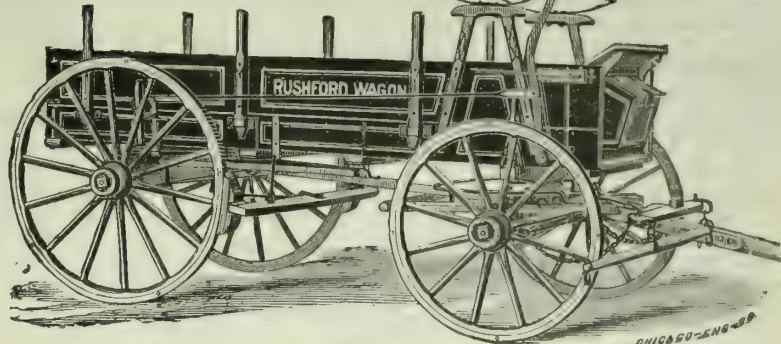
MUTTON—Quotable at 5¼¢ @ 6¼¢ # lb.

LAMB—Spring, 10¢ @ 12¢ # lb.

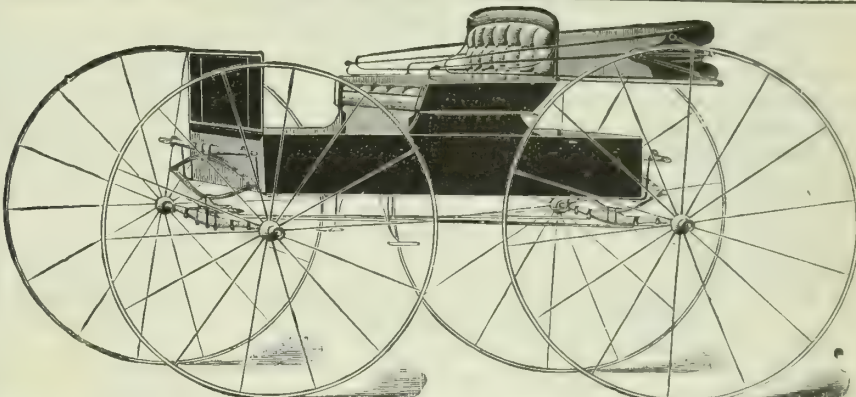
PORK—Live Hogs, on foot, grain fed, heavy and medium, 4¼¢; small Hogs, 5¼¢; stock Hogs, 4¼¢; dressed Hogs, 7¢ @ 7½¢ # lb.

HOOKER & CO., 16 and 18 DRUMM ST., SAN FRANCISCO.

EVERY AXLE GUARANTEED
AGAINST BREAKAGE.



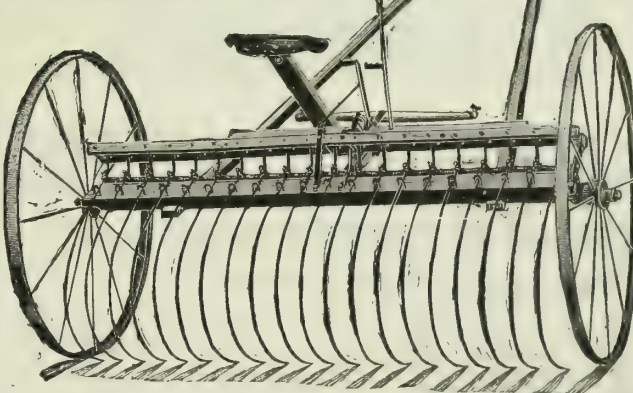
RUSHFORD HOLLOW STEEL AXLE WAGON.
The Best is the Cheapest in the End.



No 2 1/2—World Beater Buggy, End Springs, Shafts—\$82.50
The Best Buggy on Earth for the Money.

Hollingsworth Rakes

Highest Quality
RAKE
In the Market.



HAND DUMP.

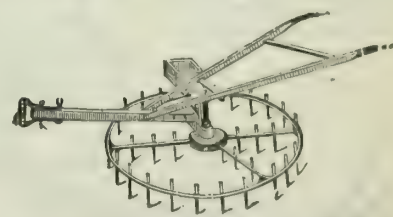
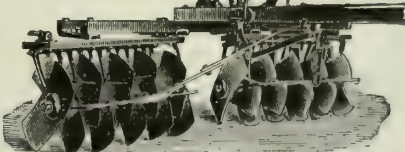
No. 8..... 8 Feet.
No. 10..... 10 Feet.
No. 12..... 12 Feet.

SELF-DUMP.

No. 16..... 8 Feet.
No. 20..... 10 Feet.

PACIFIC SPADER
This Machine
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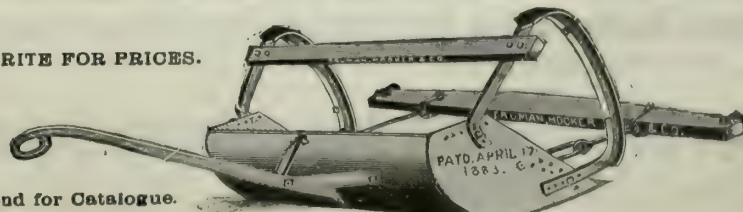
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Showing the
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CALIFORNIA CIRCULAR ORCHARD
OR VINEYARD HARROW.
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THE FRESNO IMPROVED
Leveling and Railroad Scraper.
WE DON'T DEPEND ON THE CROSSBAR FOR DUMPING.

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IRON AGE CULTIVATORS,
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—WRITE FOR PRICES.—

WIRE NETTING,
BARB WIRE,
BALE TIES.

HOOKER & CO., 16 and 18 DRUMM ST., SAN FRANCISCO.

The Secretary's Column.

Continued from page 252.

the only farmers' organization, so far as heard from, that has its working capacity and practical business management reduced to a system sufficient to permit looking after these important questions at the seat of government, whereat the welfare of the great interests of our country are considered, and action taken in accordance with facts as they appear before our representatives and their (sometimes biased) judgment will permit.

Politics in this State will soon agitate the minds of the farmers. Let us hope that they will do their own thinking and attend their own primaries.

The attention of members of the order is again called to the law as now existing in this State, that all county officers chosen in November, 1894, shall serve for a period of four years from and after the date of qualification [See Statutes of California, page 367, Acts of 1893].

Regular meeting of Executive Committee on Tuesday, April 3, 1894.

Address all communications for State Grange to Don Mills, Santa Rosa, Cal.

The Grange Congress.

The Executive Committee of the State Grange announces the following programme for the Grange Congress to be held at the Midwinter Fair in this city April 13th and 14th:

- FRIDAY, 2 P. M., APRIL 13, 1894.
- 1—Opening Chorus.....Choir
 - 2—Prayer.....A. T. Perkins, Temescal
 - 3—Instrumental Music.
 - 4—Address of Welcome.....Hon. M. H. De Young
 - 5—Response.....Master California State Grange
A. P. Roache.
 - 6—Song.....Grange Choir
 - 7—Address.....Lecturer of National Grange
Hon. Alpha Messer.
 - 8—Recitation.....Watsonville Grange
 - 9—Grange Chorus.
 - 10—Extra.
- 7:30 P. M., FRIDAY, APRIL 13, 1894.
- 1—Grange Chorus.
 - 2—Address....."Women as Horticulturists,"
Mrs. E. L. Watson.
 - 3—Solo.....Sacramento Grange
 - 4—"Progress and Future of the Dairy Interest,"
E. W. Steele, San Luis Obispo.
 - 5—Paper.....B. F. Walton, Yuba City,
President State Fruit Exchange.
 - 6—Instrumental Music.....Stockton Grange

- 7—"Education in Its Relation to Agriculture,"
Frank S. Chapin, Tulare Grange.
- 8—Music.
- 9—Extra.

2 P. M., SATURDAY, APRIL 14, 1894.

- 1—Grange Chorus.
 - 2—"Agriculture in Relation to National Progress,"
Hon. E. W. Davis.
 - 3—Quartette.....Stockton Grange
 - 4—"Horticulture in Its Relation to California
Agriculture".....Hon. N. P. Chipman
 - 5—Vocal Solo with piano and flute.....San Jose Grange
 - 6—Extra.
- 7:30 P. M., SATURDAY, APRIL 14, 1894.
- 1—Grange Chorus.
 - 2—Address.....State Lecturer
S. S. Goodenough, Temescal.
 - 3—Song.....Eden Grange
 - 4—Essay.....Mrs. R. Taylor, Pescadero
 - 5—Extra.....American River Grange
 - 6—Instrumental Solo.....San Jose Grange
 - 7—Address.....Sacramento Grange
 - 8—Grand Closing Ode.....By the Choir
 - 9—Extra.

This programme is subject to change by the Executive Committee.

From Watsonville.

TO THE EDITOR:—Watsonville initiated a class of five in the Third and Fourth degrees on March 17th, the sixth candidate being unable to attend.

At the close of the ceremonies the newly elected members, with many others, enjoyed a delicious lunch. At the meeting previous, the grange decided to have the Harvest Feast when the lecturer of the National Grange comes, which we are all in hopes will be soon.

Under the head of good of the order, we listened to a short but interesting programme prepared by the lecturer.

At our next meeting, on April 7th, we will discuss the income tax. It is a subject that needs careful study. A large attendance is expected.

PROGRESS.

March 19, 1894.

Complimentary Samples.

Persons receiving this paper marked are requested to examine its contents, terms of subscription, and give it their own patronage, and as far as practicable, aid in circulating the journal, and making its value more widely known to others, and extending its influence in the cause it faithfully serves. Subscription, paid in advance, 5 mos., \$1. 10 mos., \$2; 15 mos., \$3. Extra copies mailed for 10 cents, if ordered soon enough. If already a subscriber, please show the paper to others.

Ventilation.

An address was given before the Yorkshire Engineering Society recently by Prof. Ernest H. Jacob, M. D., on the subject of "Ventilation of Buildings." The lecturer stated that six parts of carbonic acid gas were not obnoxious, but 12 parts in 10,000 gave rise to objectionable odor. He showed by means of transparencies the course of fresh air entering hot rooms; that the greater part of the air in supposed circulation is really stagnant, and that this stagnation very usually extends beyond the limits of the breathing line. Consequently the admission of cold air at the base of walls, with exit from the ceiling line, does not necessarily ventilate the room. Touching upon the propulsion and suction systems, he remarked that there are objections to the long air passages of the former system, and showed how the useful area of such passages may be considerably reduced by sharp bends. In pipes with elbows at right angles the reduction of available area is as much as 25 per cent. Some of the best ventilated buildings are those fitted with both propulsion and suction fans. For efficient means of ventilating and heating, he urged that heating radiators should be arranged, so that the incoming cold air could be drawn over the radiators if necessary, or deflected partly over the coils or not at all. It was thought to be better to arrange the heating coils in sections, so that part could be cut off from the heating supply. If the temperature of the air on passing over the coils was greater than that of the air in the room, then it would rise, and in order to promote its circulation it should be drawn away from the base of the opposite wall, to which it enters. If, on the other hand, the air was colder when entering the room, it should be drawn away from the ceiling line of the room. These differences occurred in summer and winter, and air valves should be arranged accordingly.

RUDY'S PILE SUPPOSITORY is guaranteed to cure Piles and Constipation, or money refunded. 80 cents per box. Send stamp for circular and Free Sample to MARTIN RUDY, Lancaster, Pa. For sale by all first-class druggists.

CALIFORNIA If you want to know about California and the Pacific States, send for the **PACIFIC RURAL PRESS**, the best illustrated and leading Farming and Horticultural Weekly of the Far West. Trial, 50c for 3 mos. Two sample copies, 10 cents. Established 1870. DEWEY PUBLISHING CO., 220 Market St., San Francisco

Hay Baling.

We notice our friend Mr. I. J. Truman, whose name has been seen in the advertising columns of the RURAL every year since 1867, has gone into the banking business and is president of the Columbian Banking Co., No. 236 Bush St., Mills Building, San Francisco. He also has an office with Hooker & Co., No. 18 Drumm St., for the sale of all kinds of baling presses. He retired from the firm of Truman, Hooker & Co. February 1st, his former partner and one of their trusted employees carrying on the same line of business under the firm name of Hooker & Co. We bespeak for Mr. Truman the confidence of the RURAL readers, and he would be pleased to see them when they come to the city, either at the bank or store.

FARMERS. CHEESE!! MONEY!!!



All who have two or more cows can make Cream Cheese by a new and simple process.
Cost of apparatus saved in twenty days with two cows.

W. T. ARMSTRONG, Patentee,
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BUSINESS COLLEGE.

24 POST STREET.....SAN FRANCISCO.

FOR SEVENTY-FIVE DOLLARS

This College instructs in Shorthand, Type-Writing, Book-keeping, Telegraphy, Penmanship, Drawing, all the English branches, and everything pertaining to business, for full six months. We have sixteen teachers and give individual instruction to all our pupils. Our school has its graduates in every part of the State. SEND FOR CIRCULAR. E. P. HEALD, Pres. C. S. HALEY, Sec.

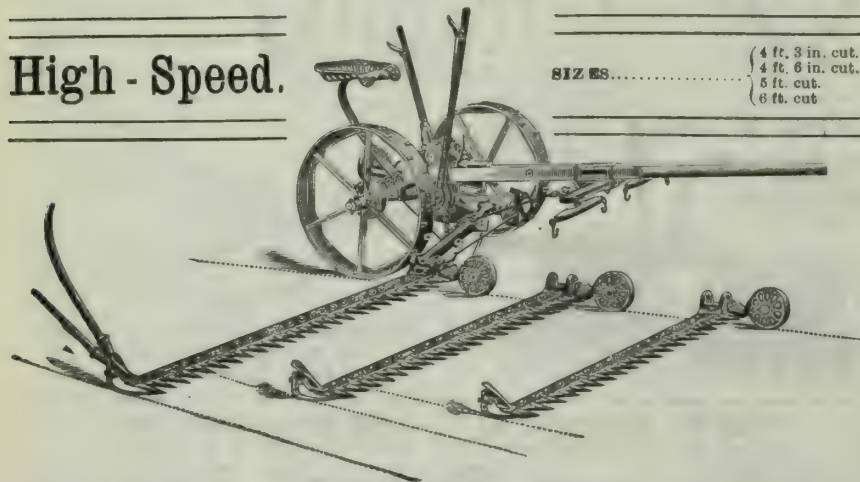
BACK FILES of the PACIFIC RURAL PRESS (unbound) can be had for \$3.50 per volume of six months. Per year (two volumes) \$4. Inserted in Dewey's patent binder 50 cents additional per volume.

BUCKEYE MOWERS

This is the GENUINE and ONLY ORIGINAL Buckeye Mower.

All Claims to the Contrary are False.

High - Speed.



A Buckeye Machine made in the Buckeye State of Ohio.

How can a Buckeye come from any other State?—?

Perhaps this Mower is not the Cheapest. BUT IT IS THE BEST.

High Speed, Noiseless Action, Great Strength, Light Draft and Durable.

Competitors having Inferior Machines may make Lower Prices.

Buckeye Mowers, Buckeye Reapers, Buckeye Binders.

WE HAVE THE FINEST AND LARGEST CARRIAGE REPOSITORY ON THE PACIFIC COAST.

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16 & 18 DRUMM ST., NEAR MARKET,
SAN FRANCISCO.RANDOLPH STEEL FRAME HEADER,
— AND —
CRAVER ALL STEEL HEADER.

The RANDOLPH HEADER Excels Any Header in the Market, Except the CRAVER.

IT IS LIGHT, SIMPLE, STRONG AND OF GREAT CAPACITY.

More RANDOLPH and CRAVER Headers Sold Than All Others Combined. Sizes 10, 12, 14 Feet.

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SOLE AGENTS FOR CALIFORNIA AND NEVADA FOR

"ADRIANCE BUCKEYE"
Only GENUINE "Buckeye."

SOLD ON THIS COAST FOR THE LAST THIRTY YEARS BY

BAKER & HAMILTON, and HAWLEY BROS. HARDWARE CO.,
SACRAMENTO. SAN FRANCISCO.**More ADRIANCE BUCKEYES Sold on this Coast than all others Combined.**

ASK FOR THE LATEST STYLE "H" WITH FOOT LEVER.

▷ FOOT LEVER AND HAND LEVER FOR LIFTING BOTH ENDS OF FINGER BAR. ◁

WHICH IS THE ORIGINAL AND GENUINE
"Buckeye" Mower?

In order that intending purchasers of "BUCKEYE" mowers may not be deceived by any false representations as to which is the ORIGINAL and GENUINE "BUCKEYE," we offer the following CONVINCING evidence in the shape of SWORN TESTIMONY and Testimonials in proof of our assertion that the ADRIANCE BUCKEYE MOWER, as manufactured by Adriance, Platt & Co., Poughkeepsie, New York, is the only Original and Genuine "BUCKEYE" manufactured:

The Trade-Mark "BUCKEYE" was registered in Washington, D. C., in the name of Adriance, Platt & Co. on the passage of the FIRST Trade-Mark law by Congress. This statement we can verify by the official and original documents, if necessary.

Extracts from SWORN TESTIMONY of Cornelius Aultman, used in suit brought by ADRIANCE, PLATT & CO., to maintain their Trade-Mark "BUCKEYE:"

"STATE OF PENNSYLVANIA, }
"COUNTY OF PHILADELPHIA. } ss.

"CORNELIUS AULTMAN, being duly sworn, deposes and says:

"He * * * * * resides in Canton, Ohio; is the same Aultman * * * * * who founded * * * * * the firm of Aultman, Miller & Co., of Akron, Ohio, manufac-

"turers of Reaping and Mowing Machines. * * * * *

"That in the fall of 1857, JOHN P. ADRIANCE, of New York, visited deponent in the office of Ball, Aultman & Co., at Canton, Ohio. * * * * * That, before

"leaving Canton, the said ADRIANCE informed deponent or his associates * * * * * that he had named his machine, and intended calling it the 'BUCKEYE;' and that

"thereafter the said ADRIANCE did adopt the word 'BUCKEYE' as his Trade-Mark, and stenciled upon, advertised, and sold his machines as the 'BUCKEYE.' * * * * *

"That to deponent's" (said Cornelius Aultman's) "knowledge, the said ADRIANCE was the first to adopt the Trade-Mark 'BUCKEYE' and apply it to mowing and

"reaping machines.

"That he had never KNOWN, HEARD OF, OR SEEN, PRIOR THERETO, MOWING or REAPING MACHINES CALLED, MARKED, ADVERTISED, or

"SOLD as the 'BUCKEYE.'

"Subscribed and sworn to before me, this 19th day of May, 1884.

"(Signed) CORNELIUS AULTMAN.

"(L. S.) (Signed) LISLE STOKES, Notary Public."

The above-mentioned firm of "Aultman, Miller & Co." manufacture the Buckeye which is now being offered on this Coast in competition with the Genuine ADRIANCE BUCKEYE.

To those who are not aware of the facts we will say here, that the Akron so-called Buckeye has had nothing to do whatever with the high reputation earned by the "ADRIANCE BUCKEYE," as the Akron *has not been sold* in the San Francisco market until within the last two or three years.

CAUTION! Be sure that the "BUCKEYE" mower you purchase is branded "ADRIANCE BUCKEYE." Insist upon having it. Take no other. It will not fail to give you satisfaction.

SAN FRANCISCO

BAKER & HAMILTON

SACRAMENTO

SOLE AGENTS FOR CALIFORNIA AND NEVADA.

The Situation as to Horse-Breeding.

Before giving up the breeding of horses and declaring the business dead, will it not be well to take a candid practical view of the case, and before throwing away an advantage already gained, consider well what has brought on present conditions, whether the causes are likely to continue indefinitely, and if not, how best to take advantage of the change when it comes. Nearly every kind of business has had its boom and reaction during the last twenty years, and the horse business has been one of them. Its effects have been and are felt over a wider extent of country than almost any other business, because it is so intimately connected with every other. Many breeders attribute the present condition of the horse market to over-production, and the introduction of electricity. The over-production has been entirely of the cheaper grades, and this class is what is being displaced by electricity. Electricity can never take the place of the heavy draft or fine coach horse. General business depression has had more to do with the fall in the horse market than anything else. Nearly every one is economizing and doing without or making the best of what they have. That this condition will last long no one believes. A renewed demand is among the certainties of the future. When this fresh demand comes there will be a short supply to meet it, because of the falling off in breeding for the past three years and the probable continuance of it for a year or two to come. Horses, as a rule, are short-lived animals. The visible supply is being used up at a very rapid rate, and the fact that it takes five years to produce a horse ready for market is lost sight of by the croakers who are now and have been for three years crying the horse business down. Another fact is that the best time to engage in the production of any staple commodity is when it is down and not when it is booming. So many farmers have learned by sad experience that they cannot produce salable horses from ordinary stallions and have given up the attempt, that the chance for those who can and do raise first-class horses in the future will be greatly improved. Taking past experience and a candid view of the future of this country, it would seem that now is the right time for those farmers who are favorably situated to take hold of high-class horse breeding in earnest. They can now secure a choice selection of mares at moderate cost and buy first-class stallions at "rock-bottom" prices. The latter can now be bought cheaper than they are likely to be again for years, for the reason that this year will about use up the stock of imported stallions on hand and good ones cannot be imported to sell at prevailing prices. Think on these things. Should not, under the circumstances, the owners of mares be more particular than ever in their choice of stallions and breed more judiciously than ever for the inevitable future market? The present conditions are simply the result of bursting boom bubbles. This country is not going to destruction; business is settling down to a sound basis, and a healthy reaction is sure to follow. A revival in general business will bring a quick and strong demand for horses, and the man who then has good ones can name his own price for them. Of course, the main point in breeding is the choice of a stallion, and care should be taken to buy only the best and from a reputable importer.

There has been lately landed in San Francisco the finest lot of imported Percheron and French Coach stallions ever brought to the Pacific Coast. This stock ranges in age from two to six years, and was selected in France by the veteran importer, Leonard Johnson, who for many years was foreign buyer for M. W. Dunham, of Wayne, Ill. Mr. Johnson has personally selected and brought to this country over Two Thousand Horses, and is universally acknowledged to be the best judge of Draft Horses in America. Each animal in this lot is a good one, not only individually, but of the best possible breeding, as is attested by the certificates of registry in both the Percheron stud-books of France and America. A satisfactory guarantee given that each stallion will get sixty per cent of colts. This is a rare chance to get a first-class stallion, as no such stock as this has ever been offered for sale here at as low figures as this will be sold for. Time given on approved paper. STABLES—Close to Midwinter Fair, on Fifth avenue, opposite Race Track, next door to Scott & McCord's Feed Store, San Francisco, Cal. Take Geary street car. For further information and catalogues, address the Secretary of the American Percheron Horse Breeders' Association, S. D. THOMPSON, OCCIDENTAL HOTEL, SAN FRANCISCO.

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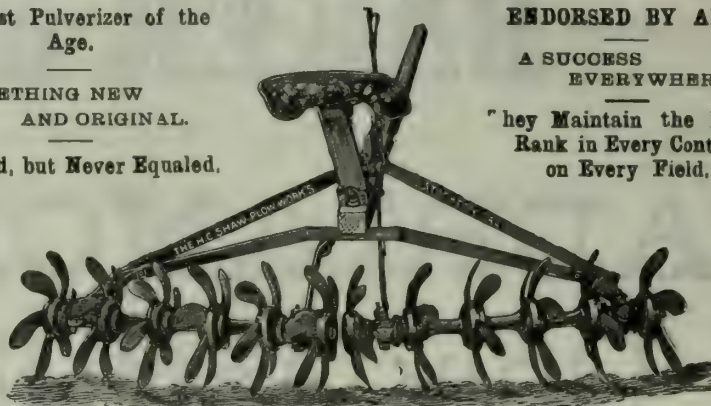
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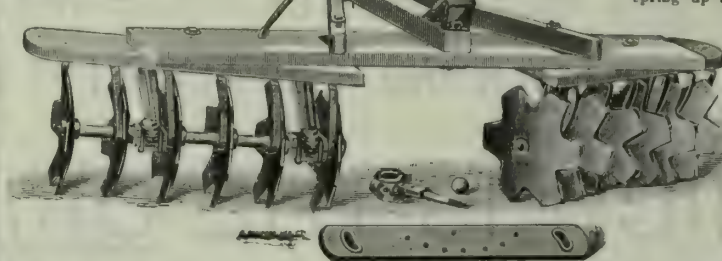
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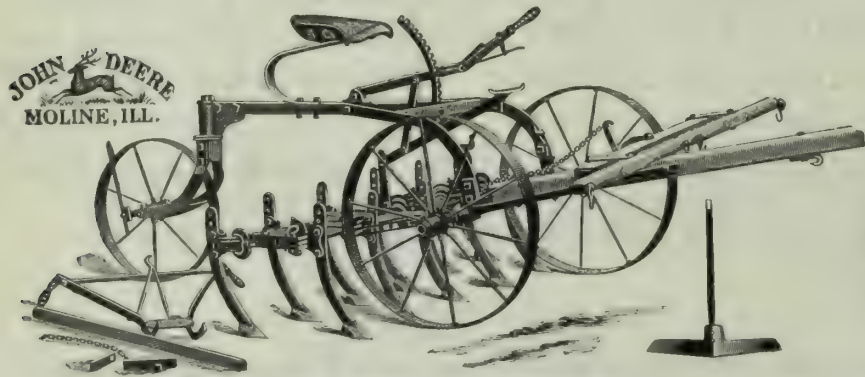
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The above Sensible Expressions have the Endorsement of the Successful Fruit Raisers of this State. Turning Damp Soil up to the Sun's Rays will not keep it Damp, but the Air will make the Moisture.

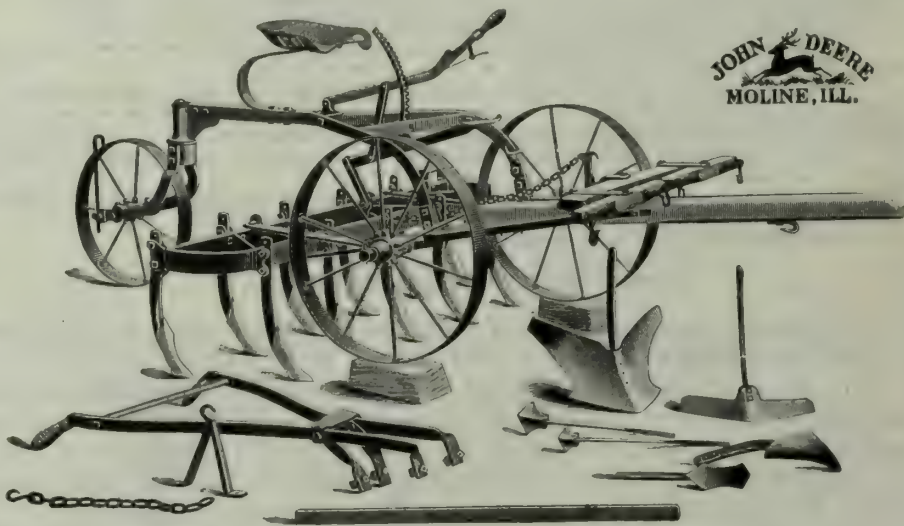
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PACIFIC RURAL PRESS

Vol. XLVII. No. 14.

SAN FRANCISCO, SATURDAY, APRIL 7, 1894.

TWENTY-FOURTH YEAR.
Office, 220 Market Street.

Hawaiians at the Fair.

The Midwinter Fair is giving the average Californian the chance to see more outlandish people in a day than he might otherwise behold in the course of his natural life. These distinguished foreigners are variously engaged at the fair, but they are not there for their health; they are on hand to sell something, or a sight of something. This does not, apparently, diminish their popularity, and

from these monsters, and his prayer has thus far been answered, for he makes a dive, strikes out toward a great shark, moves around him, plays with him and has complete control of the situation. He is dark and muscular, and wears, when the weather permits, only a malo, or short apron made of grass. The great secret of course, in his skill, lies in his expertness as a swimmer and diver, encouraged no doubt by the faith in his father—and the gods. But how a man-eating shark can maintain any appetite

THE new pomologist of the Department of Agriculture, Mr. S. B. Heiges, is now engaged in a very important undertaking, viz., to ascertain accurately what harm was actually done to fruit crops by the low temperature of March 24th. He has issued blank circulars upon which orchardists are invited to report frost injuries, etc. It will be of much advantage to our fruit shippers and producers generally to have as soon as possible a correct statement of the amount of damage done to the local Eastern fruit



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INTERIOR VIEW OF THE HAWAIIAN VILLAGE AT THE MIDWINTER EXPOSITION.

really they add much to the entertainment features of the fair and something to the educational features as well, for they teach foreign customs, habits, dress and dwellings as well as they can be learned anywhere outside of a school geography.

The engraving on this page shows a portion of the interior of the Hawaiian village, which is supposed to illustrate native life and manners. There are really many curious things displayed, ranging all the way from idols to industries. One of the most interesting parts of the exhibit is the pond and its appurtenances, which are shown in the engraving. In the foreground is a native in a native war canoe, with the peculiar outrigger which prevents the canoe from rolling over. In this pond the native now posing in the canoe is supposed to play with the man-eating shark, when the shark arrives from Honolulu. It is said that this native Hawaiian is absolutely not afraid of sharks, for his father before him prayed to the shark gods that they would always protect his son

for anything after soaking for a while in the Hawaiian village pond, passes our comprehension.

THOSE who hold that our fruit-growers do not need protection are advised that official reports from the City of Mexico cite statistics bearing on the cultivation and shipment of Mexican oranges and show that a big trade is being built up in the United States in the product. During last January and February there were 300 carloads of oranges shipped to the United States from the State of Sonora alone. A large number of carloads of the fruit were also shipped from Nueva Leon and Tamaulipas to Chicago and other markets in the United States.

THE Southern Pacific Company has made new rates on wool over its Nevada and Utah lines, as follows: Wool, compressed, in 20,000-pound lots, reduced from \$1.40 to \$1.15 per 100 pounds; wool, loose in sacks, in 10,000-pound lots, reduced from \$1.65 to \$1.37 per 100 pounds.

crop. Fortunately, California has to report very little injury to deciduous fruits so far, and little danger of any injury except to grapes. We shall probably have as much fruit as buyers are willing to pay good prices for, but growers are convinced that they are entitled to good prices this year.

IN the interest of the raisin industry of California, Mr. A. A. Hibbard of the State Board of Trade will soon open an exhibit of foods at the Midwinter Fair prepared wholly or partly of California raisins. The samples will be distributed free to visitors, together with receipts for preparing the same. The object is to teach the economy and value of raisins as an article of every-day food. At present, Americans do not use over one-fifth the amount of raisins as food per capita that Europeans do.

KANSAS CITY, which has one of the finest horse markets in the country, is going to have a mule market of equal beauty and proportions.

PACIFIC RURAL PRESS.

Office, 220 Market St.; Elevator, 12 Front St., San Francisco, Cal.

All subscribers paying \$3 in advance will receive 15 months' (one year and 13 months) credit. For \$2 in advance, 10 months. For \$1 in advance, five months.

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Half inch (1 square)	1.00	2.50	6.50	22.00
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Large advertisements at favorable rates. Special or reading notices, legal advertisements, notices appearing in extraordinary type, or in particular parts of the paper, at special rates. Four insertions are rated in a month.

Registered at S. F. Post Office as second-class mail matter.

Our latest forms go to press Wednesday evening.

ANY subscriber sending an inquiry on any subject to the RURAL PRESS, with a postage stamp, will receive a reply, either through the columns of the paper or by personal letter. The answer will be given as promptly as practicable.

ALFRED HOLMAN Editor
J. F. HALLORAN General Manager
E. J. WICKSON Special Contributor

San Francisco, April 7, 1894.

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The Week.

There has been a succession of bright and dry days, from which a change had been anticipated ere this. The dispatches which we publish on another page, descriptive of local crop and weather conditions in many counties, show how close to the borders of failure some important regions are treading. Fortunately for the State at large the rainfall is not so short everywhere, and it is fortunate, too, that the irrigated area and the area sub-irrigated by underflow from ditches on higher levels have both been multiplied many times since we had a very dry year before. We understand that the mountain snow supply over the upper part of the State at least, is ample, so that irrigation ditches will not fail.

This week's dispatches confirm all that has been reported about the injury to fruits and early vegetables in the Eastern and Southern States. Surely all these sensational weather doings, and the sensational features which are constantly arising in public affairs, should keep the public blood from coagulating. However, these things are like all other sensations; their reaction is in weariness and vexation. We have no doubt there are many who are longing for a return of the good years of the last quarter of a century, when peace, prosperity and quiet prevailed, when the rains came regularly, the frosts were regularly absent, and only once in four years did the people care about great issues.

Against Produce Gambling.

The anti-option movement in Congress has been still proceeding quietly and is now about ready to make another attempt to restrict sales of futures to transactions where actual transfer of commodities is contemplated. The agricultural committee of the House has a bill upon which it is substantially agreed, and soon expects to report. The plan is to bring all transactions in futures under Government stamp, as follows: For every 10,000 pounds of cotton, hops, pork, lard, bacon, dried, salt and pickled meats, 1 cent; every 1000 bushels of wheat or other grains, 1 cent. On every cancellation of such contract otherwise than by actual sale and delivery there shall have affixed the following stamps: Every pound of cotton, pork, lard and bacon, 1 cent per pound; every bushel of wheat, 3 cents; every bushel of corn, oats, rye and barley,

2 cents. Every bill of sale executed at the termination of the contract is to have affixed thereto a 2-cent internal revenue stamp. The special tax on dealers in options and futures is fixed at \$12 instead of \$24, as originally proposed, and the penal bond required to be furnished is fixed at \$3000 instead of \$10,000.

The bill is, of course, explicit upon all the details necessary for its execution by the revenue department of the Government. The philosophy of the treatment seems to be to bring all transactions in futures under regulation and to make the cancellation, except by transfer of goods, so expensive that the general style of dealing will be abandoned. Besides this, persons violating the law will be imprisoned as well as taxed as provided above.

This would seem on the face of it an effective way to reach this fictitious traffic in food supplies. Events constantly occurring in all trade centers show how unreal, cruel and industrially destructive is the traffic which the proposed law is calculated to abolish, while it need not necessarily embarrass legitimate future dealing.

What to Do in a Dry Year.

It seems to be a foregone conclusion that a portion of the State must face the experience of a dry year. Over a greater portion of the area south of Tehachipi and along the coast and the San Joaquin valley northward nearly to the central line of the State, the rainfall has been less than is necessary to make a crop on ordinary dry lands. The amount in inches at different points ranges from one-quarter to one-half of the seasonal average up to April 1, and a large part even of this scant amount fell early in the season on dry soil and was speedily lost by evaporation. Inches of rain, when they do not amount to a thorough wetting down of the soil, leave a very small residuum when they fall before Christmas and are followed by drouth of long duration. Sun and wind do not leave the farmer anything like the amount of water which the rainfall table charges him with. The result is, as unfortunately it now can be seen, that grain makes no satisfactory growth, pastures start only to stop and go backward, tall wild flowers assume almost a creeping growth and the face of the landscape holds all winter the bareness of the autumn. Such a deplorable aspect now greets the eyes of the farmers over a considerable portion of the south half of the State. Almost everywhere, outside of irrigated areas and moist bottoms, the outlook is arid and depressing. Can this be yet turned to cheering verdure? That is the pressing question of the time. Undoubtedly much of the land is hopelessly gone for this year. Part of it may yet be reclaimed by exceptionally heavy spring rains. Of course these are not likely to come, but in some localities the record of the past shows that they are possible.

Considerable areas of the northern California valleys, which have received a respectable rainfall thus far, are, of course, dependent upon the spring rain to carry their field crops to decent yields. These rains are more likely to come as one goes northward, and the coast and coast valleys almost always receive enough. To a candid observer it must therefore be evident that nearly all field farming by natural water supply in California is now in a seriously dangerous condition. That relief may come, all will most devoutly hope and pray.

But while we would counsel courage and hope, it is clearly the part of wisdom to look the situation squarely in the face, and prepare to make the best of it. Do not let precious time be lost by idle indulgence in the hope of rain. Hope and work is the combination which is now imperative. What can be done in a dry year? It is seventeen years since such a year has afflicted California. This year is not nearly as bad as 1877, because that year was almost universally dry; and yet, for some parts of the State, it is as bad as '77. There were lessons learned in that year which many will not be slow to apply; but there are thousands, and possibly hundreds of thousands, who were not residents of California at that date. For the benefit of these readers we propose to enter systematically upon a dry year campaign in the columns of the RURAL PRESS, and in this important work we invite the help of all readers who have succeeded in conquering drouth in any way, on large scale or small, and have produced a ton of any kind of food, for man or beast, which could not have been secured without special and timely effort on the part of the grower. We hope to show that there are many ways to produce value or sustenance by prompt and energetic action and by small investment even in a year when the great plains and uplands are parched and sere. Such an effort will naturally shape itself as the season advances. If there comes rain enough to wash away the whole undertaking, none will be so glad as we.

Now, in a general way, what can be done in a dry year if one begins at once?

First. Every rood of moist land can be made to produce immense weights of produce. Lands which in ordinary

years yield only coarse grasses, and even lands which still need some clearing of wet-land trash, can be brought under the plow and planted to summer crops successfully if the land is worked before the present moisture is baked out of it. Many men with outfits of tools and teams should turn at once to rented lowlands, if they do not own such, and put in crops which can well endure summer heat if their roots find moist lodgement. Such a venture will yield forage at least and carry the farm stock through the summer and fall without assuming debt for grain and high-priced hay. It may do much more than this; there may be a surplus which the needs of the year will fix good prices for. It is still too early because of frost dangers to plant or sow some of these crops, but it is just the time to get such land thoroughly worked to check evaporation and to retain such spring showers as may come. In many places it may be possible to make hay on low, moist land out of the common grains, but we shall describe other plants, well tried but not so widely grown, which will yield immensely and quickly in such soil during such a year as this.

Nor is it alone to such great ventures as seeking large areas of moist lands and working them on a considerable scale that we refer. We mean that every single acre in moist spots here and there on many farms shall be immediately put under tribute. It is fairly astonishing how much feed can be grown on a moist acre if one begins in time and works aright. Do not let a wet spot down by a water course, or a miry place above where the flow from some hidden spring percolates downward, fail of doing what it can this year.

Second. Let every possible acre of dry land that can be made moist receive the water this year. It may need that the underground flow from some hidden spring be intercepted and turned out upon the surface. Such water has already been pretty generally captured in the irrigated districts of the south, but there are hundreds and thousands of places where irrigation is not practiced where such water is still waiting for the plow and scraper, spade and dynamite. With a small outlay for help and materials, and a decent supply of ingenuity, excellent results can be reached in a very short time, and the few acres reclaimed from drouth will possibly hold the ranch against the sheriff until rains come again.

But suppose there are no hillsides and springs within reach, let artesian well or common well and pump bring forth at once the last drop of water that can be economically raised from below. Here again will be a revelation to many men, how much stuff can be grown on the ground that a well will moisten. It ought to be a glorious year for well-borers and casing-makers, for windmill men and vapor-engine builders, for horse-power and current-wheel manufacturers, and for deep and shallow pumps of all good and effective patterns. And it is a comforting reflection that the more business all these men honestly and conscientiously do the greater will be the prosperity and comfort of the people right in the face of a dry and dismal year.

Third. There should be immediately made generally known what crops will yield best results for different uses during a quick summer's growth. How shall these crops be sown or planted? How shall they be harvested and fed? On this feature of the situation we propose to do our best work with the experience of nearly a quarter of a century in this region, and we shall welcome aid from every quarter. In this matter there will be no consideration so impressive as that the things urged have actually been done. Therefore we want to hear from every reader who has grown a summer crop satisfactorily to furnish a brief account of the nature of the crop, how he grew it, and what use he made of it. Let us know, too, where seeds of such plants can be obtained. If our seedsmen would now make a special feature of seeds of the kinds indicated, we believe they would do themselves and the public a great benefit.

And now let us all take hold together to pull each other through a dry year. If it rains so hard that we shall all have to run in out of the wet, so much the better. We shall all have felt the thrill of energetic co-operative effort toward specific and desirable purposes; and if California farmers could only possess themselves of that, neither dry years nor other adverse affairs could prevail against them.

J. D. CUNNINGHAM of Marietta, Georgia, one of the Cunningham Bros., who have upward of 110,000 fruit trees in six orchards, writes as follows: "California fruit-growers should reap a rich harvest this season, as the freeze of last night undoubtedly destroyed our peach and plum crop." This is the fearful March weather of which extended telegraphic reports were given in last week's RURAL.

ACCORDING to the London *Caterer* it is estimated that the fruit imported annually into the United Kingdom costs the country \$50,000,000.

From an Independent Standpoint.

The Coxe movement is developing unexpected vitality. The original division, with Coxe and Carl Browne in command, has more than doubled its numbers in a week's march, and is now at Pittsburg. The other division, which left Los Angeles three weeks ago and which, at the time of last week's report, was stranded in a Texan desert, has gotten as far as Arkansas and is gaining accessions to its ranks. Encouraged by this success, new companies are springing up all over the country. A second division, of 125 men, left Los Angeles on Monday, and a division 600 strong left San Francisco on Tuesday of this week. These several divisions expect to meet at Washington about May 1st, and it really looks as if they would make a crowd formidable in its numbers. Coxe declares that the army will camp before Washington 250,000 strong, while dispassionate judges admit that perhaps one-fourth of that number may get there.

As this curious army increases in numbers it improves in quality. The pioneers in the movement, both in California and Ohio, were mere tramps, but the recruits are of better character. A good number of respectable farm laborers and mechanics have joined Coxe; and of the company which left Los Angeles on Monday about twenty per cent were heads of families, and nearly all were of a respectable sort. The accessions to the first California detachment since it reached Texas are said to be superior to the original rank and file. At various points in the East, unemployed and striking mechanics are forming into companies and will join the forward march when the column reaches them. A very notable fact in connection with this strange movement is the reception accorded the "Commonwealers" by the public. In many places they are entertained as public guests, and everywhere they are liberally provided for. The novelty of the thing must largely account for this, but when reduced to the last analysis, there appears an element of sympathy for the movement in spite of its absurdity.

In a statement put forth by "General" Coxe we have a fuller explanation of the purposes of the "army" than we were able to give last week. Coxe, it appears, is a man of some property, who believes that the prevailing hard times are due to contraction of the currency; and who further believes that no possible harm can come of an indefinite inflation of the currency. He wants a law authorizing every municipal corporation in the country to issue or receive paper money up to one-half of the value of the taxable property it contains. This money he proposes that the municipal authorities shall spend in the employment of labor upon public works. As only Congress can enact the laws necessary to carry out this scheme, he proposes that the unemployed shall march to Washington and demand relief. "A quarter of a million men clamoring for work," he says, "is a petition that cannot be thrown into the waste-basket."

Of course, the folly of all this is beyond words. The march to Washington is a crazy movement in support of a crazy scheme; and yet as we see in the incidents of the movement above outlined, it has a definite and increasing strength and commands a species of sympathy from the public. It is easy to denounce and to rail and to threaten, but it is better worth while to inquire into the sources of this strength and sympathy; and to the *RURAL* it appears not unlikely that they will be found to lie in the hardship and injustice of a financial system against which the Commonwealers are in an instinctive though grotesque revolt.

Hawaii again commands public attention on the basis of two reports which have become current during the past week. The first is to the effect that a scheme is on foot to restore the Queen with the help of the British Government. The plan, it is said, is to have Liliuokalani proclaim her sovereignty and then to proceed to the British Legation, immediately across the street from the palace in which she now resides, and there apply for protection on the pretense that her life is in danger. Mr. Woodhouse, the British Minister, will recognize her as Queen, and give her the protection she desires. This story does not seem in itself unreasonable when it is remembered that the consummation proposed is one that would be very agreeable to both parties. That England has kept hands off during the confusions of the past year is due, not to indifference, but to unwillingness to come into discordant relations with the United States; and if a way should offer itself by which she might easily and naturally slip into the protectorate of the island kingdom, it would without doubt be accepted gladly. Our Government takes this report seriously and has dispatched Admiral Walker to Honolulu to take command of the American fleet. Secretary Gresham, when asked the motive for the Walker order, replied that dispatches had been received from

Minister Willis, which it was not considered expedient to send to Congress, indicating that an outbreak might occur in Honolulu at any time which would require the presence of a cool, shrewd and determined man to look after the interests of the United States. Of course, there is not the smallest chance for the success of any scheme of British dominion over the islands; and yet, in view of our vacillating course, it would not be surprising if the British authorities should cherish hopes in that regard. Judged by British analogies, it must look as if a Government so whimsical and uncertain as ours has appeared in this whole Hawaiian business, must lack strength to enforce a policy of resistance no matter how aggressive the British policy might be. To reason in this way, however, is to be forgetful of the essential character of the American people. Nothing is more certain than that a movement on the part of England to take a hand in the Hawaiian matter would rouse the country to united councils and to arms; and England would have to back down.

Another report is to the effect that the Hawaiian royalists, including the ex-Queen, see the folly of further attempts at restoration, and that a new appeal for annexation to the United States is about to be made, this time by the royalist faction. They will, it is reported, ignore the Provisional Government and despatch an embassy to Washington on their own account. The details of the proposition include a life pension of \$20,000 a year for Liliuokalani. This allowance, it will be remembered, is identical with the provisionary arrangement for the Queen in the original treaty of annexation formulated by President Harrison and the envoys of the Provisional Government, and quashed by President Cleveland. This story seems very reasonable. If Liliuokalani and her advisers have any sense, they must see that the days of operabouffe royalty in Hawaii are past, and it doesn't require much of a business head to see the advantages of a recognized position as Queen-dowager with an assured income as compared with the status of a hopeless claimant without resources. As we have said before, it seems to us inevitable (whether or not it be deemed desirable) that the islands will in the end fall into some permanent political connection with the United States; and since it is bound to come, the sooner perhaps the better.

The movement set on foot by the San Jose Grange for the amendment of the public school system of Santa Clara county in the line of greater practicality is to be doubly commended, for it proposes not only a wholesome reform but goes about it in the right way. Reformers are usually very earnest and aggressive persons, and such is the quality of their zeal that very often in the attempt to build up they begin by tearing down. The San Jose grangers have not followed this mistaken course. They do not propose to uproot or starve the present school system; they do not call the directors of the system or the teachers of the schools by harsh names; they have not lost their tempers nor their heads. The scholastic efficiency of the schools is admitted; the value of the organization is understood; there is no wish to destroy the one or the other. What is demanded is that manual training shall be added to the school course; that is, that their children shall not only be taught what is in the school books, but that they shall be taught how to use tools, how to work in the soil, how to work in wood, how to work in iron, etc. The motive is to direct the minds of children toward practical things, to show them how to work with their hands, and to give them a taste for it, to the end that when school days are past they will have capacity and willingness to take up some industrial calling. There is, perhaps, no more helpless creature on earth than the average public school graduate whose mind is filled with lofty but impracticable ideas, and whose tastes have been turned away from wholesome labor. It is from such material, very largely, that the ranks of the incompetent, the hopeless and the desperate are recruited. How infinitely better would be a school course giving each individual graduate a practical skill and a discipline in labor to serve him for a support through life!

The action of the Legislature looking toward removal of the seat of State Government from Sacramento to San Jose has been undone by the courts. A suit brought to test the legality of the legislative act in the matter was decided adversely to the cause of removal some months ago by Judge W. H. Grant of the Yolo district; and within the past week this judgment has been affirmed by the unanimous voice of the Supreme Court.

Of course, the question having once been raised will not easily be put down, but it will now come before the Legislature upon its merits and free from the elements of levity which discredited the former proceeding. The Constitution provides a way; the courts have passed upon it; and if the people want a change they may have it by instruct-

ing their representatives to that end. In the doings of last year, in this connection, a prominent feature in the current talk was an offer of something like a million dollars for the duplication on the proposed new location of buildings owned by the State at Sacramento; and it goes almost without saying that this offer ought not to be considered. In a matter so vastly important as the location of the seat of Government, nothing should be regarded save the merits of the proposition; and it would be a standing discredit to California if a bonus should have any share in determining such a question.

Unquestionably, San Jose has advantages over Sacramento in its cooler summer climate, but Sacramento has the traditional nine points of advantage involved in actual possession; it has, furthermore, valuable State buildings, and it is, in some sense, nearer the center of the State. On the whole, it is hardly to be expected that the proposed removal will be effected. Just why either Sacramento or San Jose should care anything about the matter is beyond the judgment of thoughtful men. A State capital never yet made an important city, and probably never will. San Jose is well off without the capital; and if it should be removed, Sacramento will not suffer from the change.

The President has vetoed the seigniorage bill on the ground that it is contrary to the line of financial policy implied in the repeal bill of last year, that it would reduce the security for out-standing silver certificates, and because in his judgment it is unwise to base a further issue of silver currency upon the present small gold reserve. He thinks financial conditions are improving as a result of the repeal law. He says nothing about reorganization of our national finances. The veto, naturally, is unsatisfactory to those who believe an increase in the volume of our national currency essential to the public welfare; and so bitter is the feeling among Southern and Western Democrats that extreme men among them are talking of breaking away from the party organization. The plan, so far as it has been formulated, contemplates a political alliance of Southern and Western silver men in the form of a new national party. As yet this suggestion has not gotten beyond the stage of talk, and no man of commanding position has taken any part in it. But it is an idea of great potentiality, and the *RURAL* would not be surprised to see it take definite form; and if it does, it will knock out all political calculations based on the old order of things.

While there is no real prospect of passing the seigniorage bill over the President's veto, a formal effort to do it will be made during the current week.

The Wilson tariff bill is at last in the hands of the Senate, having been reported from the finance committee on Monday of this week. Chairman Voorhies, who is to be the leader on the Democratic side, accompanied the report with a speech, in which he said that his only criticism of the measure was that it did not go far enough in the work of destroying the protective tariff system. It was his hope that the measure of reform involved in this bill would be the beginning of a revolution whose final effect would be the destruction of the whole principle of protection by means of tariff laws. The measure is now subject to amendment and debate, and the contest promises to be one of the most notable and brilliant in the history of Congressional legislation.

Returned from Washington.

Hon. Thos. McConnell of Elk Grove, Sacramento county, who went to Washington City some weeks ago as the special representative of the California sheep and wool interest, returned on Wednesday, and on Thursday was a very welcome visitor at the *RURAL* office. The National Wool-Growers' Association met in Washington shortly after Mr. McConnell's arrival, and himself and two others were named as a committee representing that body to appear before the Finance Committee of the Senate (having the Wilson bill in charge) and present facts and arguments from the wool-growers' point of view. But the committee declined to receive them. It was a case where the politician and not the producer was supreme. Although unable to do anything in a formal way, Mr. McConnell was not idle. He met a great many Senators, presented to them the facts of the wool industry as we know them in California, and he says, "if there are not a good many lars in the Senate," the free wool part of the Wilson bill will not become a law. Mr. McConnell declares it to be his judgment that the whole measure will be amended in a way to wholly alter its character, or that it will fail. Like a true Californian, Mr. McConnell is glad to get home.

Another Californian just returned from a similar errand is Mr. George Ohleyer, of Yuba City. His mission was in connection with appropriations for the improvement of Yuba and Feather rivers. We found, he said, in talking with the editor of the *RURAL*, an empty treasury, and that, of course, made it uphill work. An average appropriation bill for river and harbor work is twenty-five millions; but it is understood that Mr. Cleveland will veto

any bill which calls for more than nine millions, therefore works everywhere had to be cut. The California representatives were very politely received and respectful attention given to a full statement of the conditions which prevail here relative to interior navigable waters. Mr. Ohleyer left Washington with the hope of getting \$75,000 as an outside figure for the northern valley rivers; and he was delighted to learn by last Friday's dispatches that the committee had allowed fifteen in addition, or an award of \$90,000. Under the circumstances, this is really a generous allowance. Following is the award for the rivers of Central California:

For improving the Sacramento and Feather rivers, California, and continuing the improvement of the Yuba river, near and above Marysville, and of the Bear river, \$90,000, of which \$10,000, or as much as need be, shall be expended in snagging and other work between Tehama and Redding, on the Sacramento river. In the discretion of the Secretary of War \$10,000 may be used in making a cut-off to avoid Shanghai bend, provided that no money shall be expended in making the said cut-off until the right of way shall be conveyed to the United States, free of charge. For improving the San Joaquin river and for making a cut-off at Twenty-one-Mile slough; and also, if the Secretary of War deems it beneficial to navigation, the making of a double cut-off beginning at Mormon slough, immediately above its junction with Stockton channel, thence across the same, entering the San Joaquin river immediately below the junction of Stockton channel; for continuing these improvements \$40,000, of which as much as \$10,000 shall be used in snagging and other work in aid of navigation on the San Joaquin river, including the Tuolumne river and other tributaries above the city of Stockton, provided that no money shall be expended in making the said cut-off until the right of way has been conveyed to the United States free of charge.

On his way home Mr. Ohleyer saw something of Western Pennsylvania and spent several days in Central Ohio. Times are infinitely worse there than here, he says; that as a matter of fact Californians don't know what hard times are.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, April 4, 1894, are from official sources, and are furnished by the U. S. Weather Bureau expressly for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total rainfall for the week.	Total seasonal rainfall to date.	Total seasonal rainfall last year to same date.	Average seasonal rainfall to date.	Maximum temperature for the week.	Minimum temperature for the week.
Yuma.....	2.16	1.36	3.10	94	50	
San Diego.....	4.68	8.85	8.92	68	46	
Los Angeles.....	6.60	26.00	16.95	74	44	
*Keeler.....	T	1.61	3.55	2.63	70	46
Fresno.....		6.15	10.76	7.57	80	42
Sacramento.....	T	13.22	21.82	17.66	78	44
San Francisco.....	T	16.10	20.54	22.07	70	46
Red Bluff.....	48	18.20	30.30	20.91	76	46
Eureka.....	.98	49.10	40.23	39.71	60	44

* To March 31st. No further reports. Station discontinued.

California's Growing Crops.

Dispatches to the Associated Press.

MARTINEZ, April 3.—The crop outlook for this section is fair. Although the farmers complain of lack of rain, the fruit crop will undoubtedly be large. It is reported that crops in the eastern end of the county are fair, but more rain is needed. The outlook in the southern part of the county is bad, owing to the lack of rain, followed by this spell of warm weather, causing the grain to dry up.

STOCKTON, April 3.—The crop outlook in San Joaquin county is favorable for a large yield, and as the acreage is greater than last year by 10,000 acres, the harvest should be much larger. Crops are not suffering for rain and a fall of from half to one inch any time this month will insure a big crop, except on the west side of the river, where the fields are pretty dry. The islands never promised so well. The total acreage this year in this county is 290,000 acres.

MODESTO, April 3.—On the sandy land south of Tuolumne river, in this county, cereals are backward, but have a better stand than for three years past, and with a good rain within ten days the yield will be large. In the eastern portion of the county prospects are good for average crops without rain. On the west side of the San Joaquin river the yield will be light, and without rains will be a failure. The average yield for Stanislaus county is 125,000 tons.

HANFORD, April 3.—The late frosts and winds have damaged the apricot crop fully 75 per cent, while the peach crop has been injured perhaps 30 per cent. Other fruits will give an average yield. Wheat and barley are in need of rain, owing to the prevailing cold weather. Snow is melting slowly in the mountains and water for irrigation is short. If warm weather or April showers come soon the grain crop will be an average one.

CAYUCOS, April 3.—Dairying is the principal interest here and but little farming is done beyond raising feed for stock. Green feed is short so far because of the lack of rain during March, but with liberal April showers green feed will make about three-quarters of an average. The dairy season otherwise will fail, as feed will be less than half.

PETALUMA, April 3.—The crop prospects are unusually fine in this region. Much grain has been sown and in many fields it is several inches high. Farmers are looking forward to large hay and potato crops. Many are plowing and light showers are hoped for. Fruit trees of all kinds are blooming and large yields are expected. Grazing on the surrounding hills is good and the stock is in fine condition.

The crop prospects in Napa county are excellent. The dry weather which has prevailed for three weeks past has left the crust of the earth a little dry and grain would profit by showers, but if they come a little later a crop is assured. All kinds of fruit give promise of a fine yield. Fruit men are very confident. Vines are not far enough advanced in growth to show what the prospect is for grapes.

ST. HELENA, April 3.—Crops of all kinds are looking well in this part of the country. Grain is up and doing nicely. Rain now would do good, but nothing is suffering as yet. The prospects for crops at this writing could not be better. The country is looking lovely and the weather is perfect.

WOODLAND, April 3.—The prevailing north winds and the absence of late rains have caused wheat crops to be backward on the higher lands. In the adobe regions there is every prospect of a heavy yield.

Growing grain looks bright and healthy, and, with occasional spring showers, will produce a bountiful harvest. In the tule regions the yield will be enormous. The acreage planted in barley is larger than usual, and the indications are favorable for a heavy production of this cereal.

AUBURN, April 3.—The prospects were never better for big crops of cherries, peaches, apples and pears. There will be a light yield of apricots. The peach crop, barring some unforeseen disaster, will be enormous. A very large acreage of fruit trees comes into bearing this year. The grain outlook in the lower end of the county promises fair, but rain is needed.

MARYSVILLE, April 3.—The outlook for cereals within a radius of 20 miles was never better than at present. Winter-sown grain could stand about a quarter or half an inch of rain and not be injured. Farmers are highly pleased at the prospects of a good yield in wheat and barley, but grow rather glum in contemplation of the prospective price. Orchards give every evidence of abundant crops. For this crop the indications point to good prices, and growers are correspondingly happy.

GILROY, April 3.—Unless rain falls very soon it is said that not more than half a crop will be realized. Although farmers are complaining, wheat and barley fields have not seemed thus far to have suffered from the want of moisture. The orchards are in prime condition, and big returns may be expected.

LOS ANGELES, April 3.—Crop reports from the immediate vicinity of Los Angeles are anything but encouraging. A copious rainfall within the next seven days is the ranchers' only hope. From the effects of the continued warm, dry and windy weather late-sown grain is already stunted almost beyond recovery, and in many localities will be worthless to cut even for forage. With rain during the coming week early-sown grain will recover somewhat. Though the crop is already a partial failure, early rains will insure a profitable though decreased yield. Early-sown barley and oats are already heading, though but a few inches high, and many fields are turning yellow. A great deal of barley will be cut for hay. Near the ocean, however, many barley fields have been wonderfully improved by heavy fogs during the past two weeks. The crop is setting well, but on account of the continued dry weather irrigation has already begun, nearly two months earlier than usual. The streams are very low.

PASADENA, April 3.—Barley and wheat, the principal crops here, are now maturing very poorly, owing to lack of rain. The grain is from eight inches to a foot high, and is badly burned by the sun. Alfalfa grown on marsh land is not so seriously affected. Rain within the next week would result in a vast amount of benefit and would save from loss much barley and wheat.

SAN BERNARDINO, April 3.—The grain crop in this county, except on moist lands, and in a few minor localities, has been nearly destroyed by the continued dry weather. A large acreage will not be even profitable to cut for hay. Peaches, apples and other deciduous fruits promise well for the coming season. Late frosts have done little or no damage, as the season is a month later than usual. Orange trees are not even in bloom.

SANTA BARBARA, April 3.—Barley in Santa Barbara county is suffering for rain, and feed is very short. Only six inches of rain, or one-third the usual fall, is recorded for the season. On the islands, where there are thousands of sheep, the feed is better, but rain is greatly needed. Fruit prospects are good. The dryness of the season may cause a short crop, but what there is of it will be excellent. For late barley the outlook is better.

REDLANDS, April 3.—Of citrus fruits a good crop is being harvested, with a great increase of acreage for the coming season. Deciduous fruits have excellent prospects, and there will be an increased production of apples and cherries in the mountains. Hay and grain in the lower valleys will be half a crop. At higher altitudes, barley and hay promise better, with increased acreage. The rainfall is nine and a quarter inches, or only about half the usual fall.

SAN JOSE, April 3.—Orchards in this section are in good condition, and with the usual rains this month the prospect for average crops is good. There is very little grain farming hereabouts.

Meeting of the State Horticultural Society.

The regular monthly meeting of the State Horticultural Society was held in the Board rooms on Friday afternoon, March 30th. The attendance was about as usual, and there were several visitors from the East and Canada who seemed interested in the proceedings.

Cost of Producing Fruit: This was one of the set topics for discussion, in which Mr. B. N. Rowley had been named as the leader. His paper was as follows:

This is a problem that but few of our fruit-growers have solved to their entire satisfaction. The cost of producing fruit can be arrived at by the same method employed by storekeepers and manufacturers in ascertaining the cost of their goods, which is by keeping a set of books and observing the following rule: Debit whatever costs value, or the thing received. Credit whatever produces value, or the thing parted with.

How long could a merchant continue his business without keeping a set of books, from which to gain a positive knowledge as to the cost of his goods and the condition of his business? Take for example the retail grocery business. The grocer who sells for cash and pays a low rent, running his business under a small expense, finds that it costs him from 10 to 12 cents to sell one dollar's worth of goods. On the other hand, a fancy grocer located on a fashionable street pays a high rent, does a credit business and keeps three or four high-salaried men driving about taking orders. This style of business requires a large number of wagons to deliver the daily orders, and this grocer finds that it costs him upward of 18 cents to sell one dollar's worth of goods. The cost of selling must be added to the purchase price, otherwise the dealer will shortly find himself in the hands of the sheriff.

There is no good reason why the marketing of our fruit crop could not be conducted on similar lines. Fruit growers, if they expect to succeed, must follow the methods of other successful business men. Books of account should be kept, from which the costs of producing fruit could be definitely calculated. Fruit-growers should be able to figure correctly the cost of producing all varieties of fruit.

I have often heard this question asked and answered as follows: What good will it do me to know what my fruit costs, when I am compelled to sell at the market price, regardless of the cost of production? I cannot see how book-keeping will change the market price, hence how am I to be benefited?

With merchants the seller, not the buyer, fixes the price. Why should not California fruit producers become merchants to this extent? Who would think of entering the store and naming the price at which the storekeeper should sell his goods? You go into a store and ask the price; if it suits you, you make the purchase. California fruit-growers should arrive at the selling price of their fruits by the well-established methods employed by storekeepers.

Keep a set of books, and charge your orchard account with all actual expenses and outlays for the orchard, and credit the same with the sale of the product. The orchard should not be charged with your personal expenses. Interest should be figured at current rates on the actual value of unimproved lands in your immediate vicinity, with cost of improvements added.

If you know the exact cost of your peaches, apricots, prunes, figs, raisins, etc., you are then in a position to sell to the first buyer who makes you a profitable offer. If you do not choose to part with your fruit at a time when you can realize a fair profit, you should then and there charge the fruit to yourself at the price offered by the would-be buyer. In other words, you should become the purchaser at the price you refused. Then you will stand in the position of a speculator and take the speculator's chances of the ups and downs of the market. If you make a loss by the transaction, do not charge such loss to your orchard account, but charge the same to your personal account, and consider it an unfortunate speculation. Your orchard account should

show the original profit which could have been made had you sold your fruit at the time the profitable offer was made.

The cost of producing fruit necessarily varies with different growers in the same locality and the circumstances governing the conditions which surround the costs of production. In sections where little or no irrigation is needed, or where water for irrigation purposes is cheap and the fruit can be cultivated in large tracts—say several hundred acres in one orchard—fruit can be produced under these conditions at a much less cost than it is possible for small growers to produce it in orchards of 20 or 40 acres where constant and expensive irrigation is required.

The future success of fruit-growing for profit in California will depend rather upon the low cost of production than upon the high prices at which the fruit can be sold.

The growers should study improved methods and try if possible to lessen the cost of production. The merchants' maxim is: "Goods well bought are half sold." The buyer of fruits or produce is by the nature of his occupation a "bear." No matter what the price, he is constantly looking for goods at a lower cost. In order to extend his business he is constantly trying to undersell his competitors. To do this he is obliged to drive the best possible bargain, and naturally seeks the lowest market. The merchant's business is buying and selling, and he has no particular interest in the producer's welfare. In order to meet this natural "bear," the producer and manufacturer of fruits should know the exact cost of his goods and endeavor to sell them at a profit.

You should at all times be in a position to take advantage of the conditions as they exist each season, regardless of what your neighbor may do or what he is trying to do. The cost of the production of fruits differs widely in different parts of the State, so must the selling prices differ.

It is not a business proposition that fruit, no matter where grown, can be produced at the same cost and can be sold at the same price. In general merchandizing, you will find as many prices as there are sellers. With the retail trade there are about as many prices for the same article of merchandise as there are stores, each being governed by the conditions surrounding the case. Yet each of these stores does its proportion of the business and satisfies its customers.

Shrinkage of fresh fruits while drying is a very important matter with the producer. This will vary in the various localities, and one season will not run like another. During a wet season, if your prunes run to large sizes, the shrinkage is much greater than during a dry season with the fruit running to small sizes. Under the latter condition, one pound of cured prunes may be made from two pounds of fresh, while under the former it requires 2½ or 3½, and frequently 3 pounds of fresh prunes to produce one pound of the cured fruit. This variation in shrinkage makes a wide range in prices for green fruit. Professional dryers often make fatal mistakes in estimating the shrinkage of fruit. They can better afford to pay \$50 a ton for fresh fruit to dry in a season when the shrinkage is very small than to pay \$25 or \$30 a ton when shrinkage is excessive. I will not enter upon the details regarding the cost of producing fruit, preferring to leave that duty for the growers present to handle as they may think proper during the general discussion.

Mr. Bancroft commended the suggestions of the essay, saying that it was a matter of the first importance to the orchardist that he should know the cost of his fruit. He asked what had become of the blank forms for the use of orchardists once gotten out by the board; and Mr. Lelong answered that there were about 10,000 on hand, and that they could be had upon application.

Judge Stabler said that it was his practice to keep record of receipts and expenditures on orchard account. They found the cost of everything to be from \$40 to \$60 per acre per year—dependent largely upon light or heavy crop. This estimate included picking, drying, and every form of expense during the year. They found, taking one year with another, that the average receipts amounted to about \$100 per acre. He had heard much of big profits, but had never been able to make them. In special cases they might occur, but it was not wise to go into the fruit business with expectations based on such reports. He doubted if any orchard in the State, taking several years together, made a gross yield of more than \$150 per acre.

Relative Value of California and Imported Almonds: Mr. A. L. Bancroft of the committee appointed at a former meeting, to make a thorough investigation as to the relative value of California and imported almonds, in reporting progress made a short statement and showed the following to be the situation at the present time: The imported Terragona almond is worth to-day in the New York market 12 cents. Upon the basis of the Terragona being worth 12 cents the I. X. L. is worth 16 8 cents, the Ne Plus Ultra 18½ cents and the Nonpareil 20 cents. This is the actual value of each variety as shown by the weight of kernel in each, all of course being at the same place. By deducting two cents a pound, in order to put the California varieties alongside of the Terragona in New York, it would make the relative value of ours here, and the Terragona there, 12, 14 8, 16½ and 18 cents, respectively.

A leading commission house here admitted the value of the nuts, but said that they could not get for them East a price which would enable them to pay here 11, 12 and 13 cents, respectively. They wanted them at about 10 cents for each of the three varieties. Putting these sets of figures side by side, this is the way they look:

Actual relative value.....	12	16.8	18½	20
Deduct cost of placing the California varieties in New York alongside of the Terragonas, and they stand.....	12	14.8	16½	18
We can't get.....	11	12	13	
But must take.....	10	10	10	
Which is a discrimination against our product of.....	4.8	6½	8	

This is because the actual value of our product is not known and realized.

It will be the work of the society to see that these facts are placed before the dealers and consumers in such a way that they cannot be ignored, and when this is done California should be able to sell her products for what they are really worth.

Orchard Labor; Wages, Hours of Work and Conditions of Living: Mr. A. L. Bancroft opened the discussion on this subject with a statement of the situation in his county of Contra Costa. Money, he said, is worth more than it used to be, in the sense that it will buy more than formerly, and labor, like all other commodities, has been affected. The cut with us, he said, has averaged about 25 per cent—that is, where formerly we paid one dollar with board for day labor, we now pay seventy-five cents; and where we paid \$20 per month with board we now pay \$15. These rates were for new men; in most cases old and faithful employees being paid at rates heretofore ruling; at least that was the fact in his own case. He had heard of a gang of Japs in Santa Clara county

working for 50 cents per day and boarding themselves. He thought that hereafter we should be on approximately the Eastern basis. There engagements were usually made by the year at about \$13 per month, the men living with the family of the employer.

Referring to the difference between the systems of lodging and boarding hired men in the East and in California, Mr. Bancroft said that the conditions here were not as good as might be wished. In his own case, a bunk house and eating room for the use of the men were provided; but he would admit that there was very little in the way of homeliness about it. The system is not as he would like to have it, but he didn't know just how to improve it.

As to hours of labor, Mr. Bancroft said that the rising bell rang at 5 o'clock; breakfast was at 6, and then to work. Between the time of rising and breakfast teamsters attended to their horses, and other hands were expected to help about anything there was to do. Work ceased for an hour at midday and at 6 P. M., supper being served at 6:30. In wet weather the time lost was charged against the men, excepting in the case of teamsters and such as had special work to do. Where men boarded themselves fifty cents per day was allowed. The tendency was to let work like cultivation, picking, etc., where practicable, by contract.

Judge Stabler said that in the neighborhood of Yuba City in Sutter county the general labor conditions were about the same as outlined by Mr. Bancroft. The difference between orchard work which required varying numbers of hands at different seasons, made it impossible to apply the domestic system of farm labor as in the East. But while his men lived apart by themselves, they had precisely the same food as was served to himself and family and their bunk house was roomy and warm. It was now vastly easier to get men for 75 cents or even 50 cents per day than it used to be at \$1; but it was his experience that a dollar man was cheaper in the long run than a half-dollar man. He believed in holding up the price of labor and in getting the best. The usual price paid per day for span of horses had been 75 cents, but now teams could be had for 30 cents and upwards.

Mr. Rowley had heard of a case in the southern part of the State where a contract for keeping an orchard of from 1000 to 1500 acres in perfect condition for one year had been let at \$4.50 per acre.

President Lelong, whose observation has covered the whole State, said that there was a vast difference between the systems of different orchardists in the matter of labor and that it was certainly true that those who showed the most consideration and humanity in dealing with labor got the best returns. He proceeded to outline the systems of various large ranchers. At the English Syndicate ranch in Orange county the men were lodged in little cabins and fed from kitchens on wheels, and both cabins and kitchens were moved about the place so as to be convenient to the work. The men were under a semi-military discipline, not being allowed to leave the ranch without permission. At the great Baldwin ranch in San Gabriel valley the men lived in little houses, many with their families, and had full liberty in every respect, save that they must trade at the ranch store, instant discharge being the penalty for violation of this rule. On the ranch of D. C. Cook in Ventura county an effort had been made to domesticate the ranch labor, and to this end numerous pretty cottages, each with a little plot of ground, had been prepared. They were grown over with vines and presented a very attractive picture. It was a pleasure, indeed, said Mr. Lelong, to see how successful the effort had been. Men stayed by the place from year to year, their children were born there and it seemed a permanent and happy community. At the Elwood Cooper place in Santa Barbara, where several hundred men were employed, everything possible was done for the health and comfort of the help. They were lodged in a village of comfortable houses and there was a large assembly room where the men, under the lead of the foreman, got up entertainments for their evening pleasure. The men were taken to their work in wagons and were in like manner brought in at night. At about 10 o'clock each morning and at about 2:30 each afternoon wagons went about to the different gangs distributing cool water for the men's canteens and fresh fruit for their eating. Mr. Cooper told Mr. Lelong that the expense of all this was the best investment he had ever made. His men appreciated being hauled to and from their work, and especially the cold water and fruit brought them during the day. They worked more cheerfully and did better work than when no special provision was made for their comfort. Whereas he used to have great trouble with his labor, he now had his pick of the men in the county and found that each man valued his job and worked to keep it. At the Hatch & Rock place, in Butte county, the men were lodged at the home place, two being assigned to a room, but some of them had to walk as far as five miles to and from work, and it had occurred to him (Lelong) that Mr. Cooper's system of sending out wagons to distribute and gather up the men could very profitably be applied. At Hatch's Suisun ranch and in the Suisun valley the system was about the same as at the Butte county place. At the Stanford Vina ranch, in Tehama county, continued Mr. Lelong, the living and working conditions are very bad. No inducement is offered to the men to identify themselves with the place, and there is constant change and confusion. On the whole, Mr. Lelong thought that conditions were improving steadily and that it would eventually be evident to everybody, as it is now to a few, that there was profit as well as humanity in considerate treatment of help.

Mr. Shinn said that in Alameda county the orchard work was largely done by Portuguese, who lived at home. They began work at 7 and knocked off at quarter to 6, and it was the general experience that they did as much work in these shorter hours as formerly when the hours were longer. Pickers in season worked from 7 to 6, with an hour's intermission at midday. Some were now paying only 75 cents per day, but the \$1 rate was pretty well

maintained, while in the California nursery \$1.10 was paid for experts. There were a good many Japs and Chinese, who were generally paid 75 cents per day.

Prof. Wickson, as an illustration of the varying conditions of labor in California, said that last week he spent a few days at Union island, where he found the men lodged in house-boats, or, as they call them, "arks," sleeping overhead and eating in a combined kitchen and mess room on the lower floor. The rate of wages was \$20 per month. The ark cook, the Professor added, is expected to help provide his table by spending his odd times in fishing for catfish off the bow of the boat. He found the fish delicious, but he didn't know how it might be after having it three times a day for a month or two.

Reports on Growing Crops: Under this head, Judge Stabler said that observations by his son Harry in Sutter county up to last Saturday demonstrated that all kinds of fruits were in fine condition save apricots and almonds. It was his judgment that there would be about a half crop of apricots in that section.

Mr. Lelong said that advices from Chico reported very serious damage about March both to apricots and almonds by frost.

Mr. Rowley had received letters from the southern San Joaquin counties and from the region south of Tehachapi reporting very serious damage by frost to apricots.

Mr. Overaker of Alameda said that in his county they had a fine crop of blossoms. It had been very warm and the buds were very tender, and a frost any time during the next two or three weeks would do serious damage.

Mr. Bancroft said that in Contra Costa they had had frosts right along, but that apparently there had been no damage. He asked Prof. Wickson if it were not common for the effects of frost to be delayed, not apparent at the time, but manifested in the dropping of fruit before maturing. The professor answered that it not infrequently so happened.

Prof. Wickson had just returned from Fresno, where he said fruit crops were everywhere in good shape. He was, he said, a good deal concerned about the short rainfall in the south. Up to this time there has been only about one-third of the average precipitation, and it is a question how it will affect unirrigated deciduous trees.

Mr. Lelong said that the drouth is very serious in parts of San Luis Obispo, there being no feed for stock. Many herds were being driven out of the county to better ranges.

Mr. Stabler said that he had heard of some damage to apricots and almonds in Colusa county by the continuous north winds of ten days ago.

Subject for Next Meeting: After some discussion, it was decided to devote the April meeting (on the 27th inst.) to the subject of "Thinning," and the secretary was instructed to invite Messrs. R. C. Kells of Sutter county, J. H. Flickinger of Santa Clara and F. H. Buck of Solano to give their experience and observation as to this subject.

FRUIT MARKETING.

Sacramento County Organizes.

Florin, Sacramento county, has been for several years the seat of a very interesting co-operative enterprise for the marketing of small fruits, and it is proper that at such a place a general organization for the county should be effected. On Wednesday of last week such work was done, on the account which we compile from the *Record-Union* is significant and suggestive:

The meeting was called to order by Thomas Taylor of Florin, C. J. Hopkins acting as secretary. A large number of representative growers from all portions of the county were present and took part in the discussion.

W. M. Reed advocated that the association should embrace the growers of the whole county. It should send agents, who were members, to Eastern points, not to do the selling, but to oversee the sales, by being on the ground to keep track of what was being done; to see that the auctions were properly conducted, and not run by a ring. He believed there was no need of dealing through middlemen. With such oversight the fruit could be safely sent to the auction men directly.

W. N. Balch said he did not wish to be defrauded as in the past. He told his experience as a member of another association. If the association was going to send somebody to look after the sales, he should join it; if it was not, he wanted nothing to do with it. The National Association agent in an Eastern city had not dealt fairly with him, and he wished to know was being done with his fruit.

J. V. Piazza of Kansas City, a member of a large commission house there, said he was glad to meet with the growers. After hearing the sentiments of those who had spoken, he hoped that they would send some one to represent them. He thought it the best plan they could adopt.

He gave an explanation of the auction system as conducted in Chicago, both the open and the closed auctions. He said the ideas which had been expressed of the profits made by the buyers were erroneous. Buyers who bought in the morning were glad if they could sell their goods on the same day. If they did not, they were glad to sell it the next day at a loss. There was trouble and anxiety at the East as well as here. His house would welcome the agent of the association and extend to him every facility for investigation.

Louis Weinberger of New Orleans said he was manager of the National Association, which had been attacked. He thought there had been some mistake in the statements made, or some misconception. His house had handled Florin fruit and also fruit from Placer county. He believed that the Florin people for whom he had sold fruit were well satisfied. The growers and agent of the association would be cordially received by his house and every facility for investigation given to them.

E. Booth did not think that the auction houses were en-

titled to so much blame as they receive. He believed that if the matter were properly investigated the fault would be found outside of the auctions. He had shipped large quantities of fruit and had noticed that his returns averaged as well as those of others in other places.

He believed, however, that this was not the object of discussion now. The object of the meeting was for the growers to come together and take organized action. He was one of the first advocates and organizers of the California Fruit Union. He did not think that the Union had been carried out as it was intended. He thought that the plan of distribution was correct, and the only one that can be successful. He thought the only thing that could be done was to form a co-operative association, in which any shipper in the county could ship, and from which he could derive advantage. This county and other counties should center and let each other know what was being done, so that they would not be working against each other.

G. Woolsey of Ione had, like the rest, had his experience for several years in fruit shipping, and it was not always satisfactory. He had shipped with various firms and associations, and had shipped from Florin last year. While his results in the latter case had not been exactly satisfactory, there were outside causes which caused it.

The history of fruit shipping, he thought, was that sometimes it was profitable and sometimes not, and the grower must take things as they come.

Although growers may be fairly dealt with at the other end of the line, they would be better satisfied if they had some one there who could certify to the fact that they were fairly treated. The first thing to be done, he thought, was to all unite and pull together. Without harmony they would be weak, and their efforts would come to naught. The withdrawal of the Fruit Union from the field left it practically in the hands of one association. He thought that all that could be done would be to send a man this season to watch the sales; then, if strong enough, they could send agents and enter the field next year.

C. F. Johnson advocated sending an agent to Chicago—the headquarters of Porter Bros.—if nowhere else. He believed it was especially a point where some good can be done by having a man to look after matters.

A. D. Murphy said he had offered this plan of a county association, not because he thought every one else was a rascal or a thief, but because matters are in such shape that they must be bettered in some way or fruit growers must quit the business. His idea was that an agent should be sent on, to whom the fruit could be shipped and distributed to any one to whom the shipper wished. The expense would not be very great. The advantage of a county organization was to regulate the distribution, making it even and regular and preventing a glut in the market. It could also confer with other county organizations to the same end, with great advantage to the growers. No honest firm in the East could object to an agent being sent to see that everything was straight. The loss which has sometimes been experienced on one shipment would pay all his expenses. If something cannot be done, growers must quit raising fruit. Let us invite every one to join with us. We want to control the fruit, distribute it properly and see that it is fairly sold. He moved that a committee of five be appointed to formulate a plan of organization.

Several members thought that it would be better to ascertain first if it was desired to form an association. Murphy withdrew his motion.

Mr. Booth moved that it be considered the sense of the meeting that it form an organization to see to shipping our fruit from Sacramento county.

An amendment was offered to include Sacramento county and vicinity, but was withdrawn.

Reed said that county organization was necessary as a preparatory step to State organization. Almost all the other fruit-growing counties are organizing with the same object. If this county wants to benefit by it, it must organize. A State organization can, by concerted action, prevent the overstocking of the market in any one place and prevent the fruit being sacrificed. An agent at any point which was in danger of being overstocked could divert fruit sent there to some other point which was not oversupplied. Results heretofore had not been remunerative, and it would pay to make the trial.

Weinberger, in response to a question, stated that the only safe way for the growers was to have a man or a firm at a given point to look out for their interests and see that the fruit was sold. He did not think the association's agents would help it much in that matter.

J. Rutter said that he was a pioneer in fruit shipping, and his experience showed that, as a general thing, the Eastern men had dealt fairly with the growers. The commission method, however, has proved to be a failure. Then the open auction plan was tried and resulted in a saving of thousands of dollars to the growers. Now, it is said that there were faults in the auction plan—that the closed auction was the best. He did not believe it. He believed that the more open the competition the better. The fact remains that the growers are not making both ends meet, and a remedy must be found. With organization they could accomplish something with the railroad companies in regard to reduced rates; singly they could do nothing. He favored the motion and hoped the association would be formed.

E. Varney thought that it would pay to send a man East to look over the ground. It would result in either confirming the suspicion that there was not fair dealing or disprove it. There are plenty of honest men in the business, and there is more satisfaction in doing business with a man with whom one is acquainted than with a stranger. He thought it decidedly beneficial to send a man. The Eastern gentlemen who are present have proved by their dealings with shippers here that they are fair men, as they had given good returns and won the confidence of growers.

Weinberger said he would be glad to welcome the agent, but he thought he would benefit the association very little. Fruit cannot be diverted after it is started as easily as the gentlemen think. California is a large State and the grow-

ers will not pull together, but will work each for himself. He favored a good strong organization of the growers, but a single head must know of all the fruit that is on the road at any one time, and this association cannot do so. Fruit must be diverted, if at all, before it reaches Omaha.

W. D. Montgomery thought that, considering the financial conditions, the prices realized had been as good as could be expected. Equal prices could not be expected to materialize at all times. He believed that the Eastern men had, as a rule, treated the growers fairly. He thought the true remedy was a broader field of distribution. If the field can be widened better prices can be realized.

The motion to form a county association was carried unanimously.

On motion of Mr. Booth, a committee of five from different parts of the county was appointed by the chair, to formulate plans for the formation of the association.

The committee was announced as J. Rutter, E. Booth, C. E. Mack, A. D. Murphy, C. F. Johnson and C. J. Hopkins.

THE IRRIGATIONIST.

Irrigation in Kern County, California.

In many respects the irrigation system in Kern county is unique. In the extreme southern portion of California the necessity for economy in the use of water has led to the development of extensive reservoirs and the construction of expensive pipe lines of steel, cement, or wood, by means of which the water is stored and conveyed wherever desired, with a minimum loss from seepage and evaporation. In Kern county and other portions of the San Joaquin valley this necessity does not exist. The water supply is abundant for all present demands, and for any that are likely to arise in the immediate future. Rising amid the everlasting snows and glaciers of the lofty Sierra are half a dozen great streams, whose waters pour out into the valley and are utilized for irrigation of the thirsty plains. The San Joaquin valley is the southern half of the great interior basin which constitutes the bulk of the arable land of California. The other portion is known as the Sacramento valley, and at the extreme southern limit of the first-named division lies the territory embraced in the county of Kern, and including within its borders some twenty-five hundred thousand acres of valley land, while considerably more than that area is comprised within the foothills and mountains of the Sierra Nevada and Coast ranges. In the valley portion the rainfall is very light, not having averaged over five inches annually for a long series of years. Hence all crops are dependent entirely upon irrigation for the moisture required to mature them. In the foothills and mountains, however, the rainfall is heavier, and good grain crops are produced without irrigation.

The principal source for irrigation in Kern county is the Kern river. This stream has its source on the topmost summits of Mount Whitney, the loftiest peak in the United States, and the crowning pinnacle of the Sierra Nevada mountains. Towering over fifteen thousand feet aloft, its upper slopes are covered with the snows of ages, while the rugged canyons are filled with the slow-moving ice rivers, whose constant melting as they near the snow line supplies a vast volume of water, whose source is perennial and never failing. Receiving the streams that flow perpetually from these everlasting snowbanks and glaciers, the Kern river flows through a rocky, tortuous and precipitous channel for a hundred miles and more, with a general southwesterly direction. In places the canyon widens out, leaving considerable areas of highly fertile land along its banks, and again it narrows until it is entirely impassable, with granite walls hundreds and thousands of feet in height. The course of the stream is broken by numerous cataracts and rapids, and the scenery throughout its entire length is grand in the extreme. Finally the river leaves its rocky mountain channel and debouches into the broad valley 50 to 60 miles wide. At once the character of the stream changes, and it takes on the most quiet and peaceful appearance imaginable, spreading out over a wide and level channel, lined with groves of cottonwood and willow, and broken with beautiful little islands, which are solid masses of verdure.

Hardly is the level valley reached, however, when the waters are diverted into great canals, which have been constructed in every direction throughout the valley. The valley portion of the Kern river possesses the singular characteristic of running upon a ridge, from which the general floor of the plain slopes in both directions. This enables canals to be taken out on both banks, running very nearly at right angles to the course of the stream, and covering the land for many miles in every direction. All told, there are no less than 32 canals taking water from the Kern river within a distance of 25 miles from the point where it leaves the mountains. These canals vary in width from 15 to 140 feet, and in depth from two to six feet. These 32 main canals have an aggregate length of over 300 miles, the longest being the Calloway (all are named from their builders, projectors, or some circumstance regarding their location), which is 120 feet wide, 6 feet deep and 32 miles long. The volume of water carried in this canal is estimated to be sufficient to irrigate about 200,000 acres. The gradient of all these canals is very small, the heaviest being no more than a foot and a half to the mile. When it is considered that there are canals in the South which have a grade of one to two hundred feet to the mile, one of the peculiarities of the Kern county system can be better understood. Of course, with so light a grade there is little or no danger of damage by erosion, and almost none of the breaking of the banks, both fruitful sources of difficulty in times of high water where high grades prevail. Besides the main lines of canal, comprising, as already stated, over 300 miles, there are large laterals aggregating over 1500 miles in length, by which the water is conveyed

from the trunk lines to the different farms that require to be irrigated. These laterals are of varying size, averaging perhaps some 12 to 15 feet in width. Water is not kept running in them at all times, but is turned on periodically as it is needed, a system of rotation being followed. The methods by which water is diverted from the river into the main canals are simple and comparatively inexpensive. There are no masonry dams or other permanent works of diversion as elsewhere. The ordinary method is by the construction of weirs of woodwork across the channel of the river. These are made by driving double rows of piles into the bed to a depth of 12 to 16 feet, and upon them a floor is laid just below the normal surface of the river bed. Upon this a framework is constructed having timbers projecting above the highest water level, and with a slope down stream. On the upper side these timbers are so constructed that movable planks, called flash boards, may be put in at any time so as to form a temporary dam and raise the water to any desired height. Adjoining the weir is the head-gate of the canal, constructed on the same principle. The water being raised by means of the weir to a higher level than the canal head-gate, it is, of course, forced over the latter and into the canal. Forcing the water to pour over a crest into the canal prevents the latter from becoming filled with sand, as would be the case were the inflow taken at the same level as the river bed. As the amount of water in the river varies from time to time, a frequent shifting of the temporary dam is necessary in order to regulate the flow of the canals. In winter time and during periods of high water the planks are entirely removed and the flow of the river is left unobstructed. Redwood lumber is used in the construction of the weirs and head-gates, and being practically indestructible, it has been found much better to construct them of this wood than of the far more expensive materials of masonry that are sometimes used.

In some cases even these timber weirs are dispensed with, and the water is diverted into the canals by throwing up a wingdam of sand and brush diagonally part way across the river. These wingdams have to be renewed, of course, whenever high water washes them out, and they are only available for handling small quantities. For large and permanent flows the weirs already described must be constructed. Where the grade of the surface is greater than that allowed in the construction of the canals, drops are put in at intervals wherever necessary. These are constructed of redwood planking, and, being anchored firmly in the earth, the water passes over them without danger of their being washed out. Where smaller areas are to be irrigated and land values are higher than in the case here, the canals are frequently paved with stone and lined with cement or asphalt, in order to prevent loss from seepage, while the dams and drops are built of masonry. But such a course would involve too heavy an outlay where the canals are so large and extensive as is the case in Kern county. Besides the immense quantity of water that is diverted into the canal nearest the point where the river leaves the mountains, there is a vast storage system for impounding the water that would otherwise run to waste in the winter and holding it for use in the summer season. An immense reservoir covering 30,000 acres has been constructed in the center of the valley, and in this the surplus water from the river is stored to an average depth of 14 feet, from which it is available for use on the lower lands of the valley.

The method of distributing the water among consumers is very simple. The main canals are provided at intervals with gates opening into the laterals, by which the water is conducted to the highest point of each person's land. When the farmer decides that his growing crops require irrigating, he gives notice 24 hours in advance at the headquarters of the company controlling the canals, specifying the period for which water is wanted and the amount required. At the appointed time the gate to his particular lateral is raised and the water allowed to flow to his land. When the period specified has expired, the gate is closed. The land-owner himself is not allowed under any circumstances to interfere with these gates. For fruit trees and vines three or four applications of water each season are sufficient. For wheat or other grain, two applications, and sometimes one, will suffice. To obtain the best results in alfalfa growing, the water must be applied heavily every time a crop is cut, which is from three to six times each season. Alfalfa will grow and yield moderate crops with considerably less than this, while many other farm crops require three or four irrigations between seed time and harvest. Potatoes need little water. For the use of water an average charge of one dollar and a half per acre is made annually. This is about the lowest rate in the State. There are localities where the annual charge is as high as twelve to fifteen dollars an acre, and even those high figures are cheerfully paid, as the farmers recognize that their entire prosperity is dependent solely upon the water thus purchased. As the average irrigated farm in California does not exceed thirty acres in extent, it can be seen that the entire annual cost of water does not reach a high figure. There is scarcely a farmer in the East who would not gladly bind himself to pay this small sum in order to be assured that his crops might not suffer either from too much or too little moisture. It is exactly this assurance that irrigation gives, and the premium on this kind of insurance is certainly not high. Besides the water derived from the flowing streams, there is another source of irrigation in Kern county which is of great importance. This is the artesian wells, of which there are a great number, varying in depth from three hundred to a thousand feet. Some of these wells supply as much as three million gallons daily, and when properly stored there is water enough to irrigate one thousand acres of land therefrom.

The factor which the possibility of irrigation occupies in land values may be seen from the fact that in Kern county there are considerable areas of land which have no apparent source of water supply in sight, and which are therefore valueless for farming purposes. This land is much of it vacant, that is, still belongs to the government, and can be obtained by whomsoever desires on the usual

government terms of one dollar and a quarter to two dollars an acre. But land of identically the same character, but provided with water, sells readily at from forty to one hundred dollars an acre. This added value is given entirely by the possibility and certainty of being made productive through irrigation.—American Agriculturist.

AGRICULTURAL ENGINEER.

Road Drainage.

At the Good Roads Congress held in Chicago in October, J. J. W. Billingsley read a paper upon the subject of Drainage which in the main is correct when he says:

Among those who have given the subject of road improvement careful attention, there is settled conviction that the good condition of any road depends upon a system of thorough drainage—a system which embraces not only the removal of the storm water which falls upon the surface of the road and the land adjoining, but also the water which filters through the ground. The latter, if allowed to percolate into and through the subsoil underlying the roadbed, will render the travelway soft and springy, often affecting the compacted surface of the road so as to cause it to break up, or, in other words, "the bottom drops out."

In fact, the basis of all road improvement in this country is the thorough drainage of the road surface and the foundations of the roadbed. In the experiments which have been made in road drainage by laying one or two lines of tile drains along the sides and parallel with the road, the result has been so satisfactory that some persons have become enthused with this method of road improvement and conclude that in it there is a remedy for all the defects which may be encountered. But we are convinced that the best improvement of our highways will combine at least three essential features, which are:

A road embankment of sufficient height to be at least above overflow from extraordinary rainfalls and sufficiently crowning to shed the water readily and wide enough to accommodate the travel, and not of greater width; that the road shall have open ditches on each side of sufficient capacity to carry all flood-water from the roadway and from the lands adjoining into the nearest water course; the surface or open ditches should have such a perfect grade that no water will find a lodgement along the line of the road on either side and that two lines of tile drains be placed parallel with the road, one on each side, at the base of the embankment.

The underdrains should be laid at the depth of three or more feet. The size of the tile will depend on the length of the drain and the fall, but it is probable that they should not be less than four inches in diameter in any case, and as much larger as the needs may require. The three essential features named embrace two systems—one the removal of the surface water speedily and effectually, the other the removal of the water of saturation remaining after the removal of the surface water, and the prevention of the flow of soil water under the roadbed. The underdrains should have a uniform descent or grade to some natural stream or outlet where the water discharged will flow away freely and at no time back up in the drain. The crowning of the road should be sufficient to cause the water falling upon the surface of the road to flow readily to the side ditches. If it fails to flow away, and remains in the ruts and depressions, it will increase the amount of mud and the inconvenience of travel. Roads in such a condition should have road machines passed over them as often as necessary to make the roads level.

It is a mistaken idea that an underdrain laid in the middle of the road will drain the surface of the road. The travel and the action of the water falling upon the road will so effectually puddle the surface that no water on the road will find its way down to the drain thus laid. To the contrary, the horse tracks and ruts will hold water like earthen vessels until it is removed by evaporation or otherwise. Roads graded and drained as proposed will cost from \$400 to \$500 per mile, but when done they will be good roads for eleven months and commendably passable the remainder of the year with a little timely repair. Where gravel and stone are not to be had at a reasonable cost, we know of no improvement so satisfactory in all respects as the road well graded and sufficiently drained. Where gravel or broken stone can be had, it will be found that the thorough drainage of the road, as proposed, will save half the gravel or stone that would otherwise be required to make a good road. A dry foundation to build upon is the most important factor in road construction. Tile drains may be used to intercept water percolating through the earth of the higher ground adjacent and likely to interfere with the road, or springs or seepy places under the roadbed may be drained out with tiles so as not to interfere with the embankment. It may be found advisable at some points along the line of the drains to fill in above the tile with gravel or sand a few feet, so that surface water may pass down freely into the underdrain to prevent its accumulation where it is likely to affect the road embankment.

After a road has been put in good condition and thoroughly underdrained, nothing need be done except a little timely repair in the way of keeping the surface smooth and the open ditches free from any drift accumulation. Road drainage has passed the experimental stage. The benefits have been fully proven. The success of the improvements depends only upon the thoroughness of the work. A few suggestions as to the construction of the underdrains may be helpful in this connection. One of the most important features of a good drain is a desirable grade—one free from depressions below or rises above a true grade line. These conditions, it has been remarked, are never secured without effort; slight depressions will fill with silt sooner or later, and so far destroy the efficiency of the drain. The tiles should be laid in a trench carefully fitted for them, and so carefully settled in their bed that the filling of the ditch will not displace them, and the joints should be

closely joined; and if any difficulty is experienced from quicksand, the covering of the joints with clay will prevent any trouble from this source. In conclusion, we remark that no more important duty lies before us to-day the effect of which will be more widely felt than that of giving material aid and to otherwise encourage the permanent improvement of our public highways.

THE FIELD.

Suggestions for Sugar-Beet Growing.

The acreage of sugar beets in this State is extending each year, and suggestions for better practice are being drawn from wider experience. Richard Gird of Chino recently issued the following suggestions to beet-growers of his region, and they will be found of interest to all beet men. He says:

The land to be planted in beets should be plowed deeply during the fall and winter, and plow in the spring deep enough to thoroughly loosen up the ground just before planting, harrowing thoroughly after the second plowing. In the case of the moist and semi-moist land, the deep plowing should be done as soon as practicable after the beet harvesting is finished; this is important and must be carried out.

The Chino beet farmers have had three years' experience, many of them already being quite expert in the business and deserving great credit for what they have so far accomplished. Beet culture is, however, the study of a lifetime, and perfect excellence can only be attained by constant study and comparing results from each year's experience.

From the experience gained on the Chino Sugar Beet Plantation, it is believed that all those soils which are warm enough to bear deep plowing immediately before planting should be so plowed, turning the wire worms under to such a depth that they will not get back to the surface in time to affect the young beets until they have made sufficient growth to defy their work. Also that packing the loose surface after the beets are up, with a light roller, facilitates the rooting of the beet and hinders the work of the wire worm by obstructing its movements, which is so far the only enemy of the beet discovered on the Chino ranch.

Preparing the Soil.—In preparing the soil for sugar beets it is of the utmost importance to have it in a thoroughly pulverized condition, to at least a depth of from eight to twelve inches, being careful not to turn up too much new cold soil to the surface, but each successive year the plowing could be run to a greater depth to bring up fresh soil to be aerated. Twelve inches should be the minimum depth at the third year's cultivation.

In order to insure the germination of the seed the land should be plowed and harrowed for some days before the seed is planted, in order for the land to become settled and packed, allowing the moisture to raise and thoroughly distribute itself near the surface. There are some soils which would be very much benefited by running a subsoiler to the depth of four, five or six inches below the bottom of the surface plow, and to loosen up and give the roots a chance to penetrate without turning the cold soil to the surface. The spring plowing should be shallow, and the ground well harrowed down and left to settle before planting.

Seeding.—The seed should be sown in drills from 18 to 20 inches apart, with from 12 to 18 pounds of seed to the acre. The seed must be covered with from an inch to an inch and a half of earth, according to the condition of moisture of the soil, and must be sown equally deep everywhere, this being the only means to assure equal growth and for the plants all to come up at the same time. This is of the utmost importance and should not be neglected, and in sowing care should be taken that the seed reaches the moist earth and that it is properly covered.

Thinning.—The beets should be thinned as soon as possible after they are fairly up to a distance of from six to twelve inches in the row, according to the soil. In the richer, moist lands, the distance between the rows should be less and the beets closer together in the row, and *vice versa* in the dryer, lighter soils. This work of properly thinning is of the greatest importance, and under no consideration should it be neglected beyond the proper time, as the effect would be to reduce both the quantity and quality of the beets. Care should be taken in thinning to leave the strongest and most vigorous plants and to remove the weeds thoroughly from the row for at least two and one-half inches on each side.

Cultivation.—Cultivation should commence with the horsehoe cultivator as soon as the beets are sufficiently up to admit of the rows being followed. This can be done sometimes before thinning, particularly if the soil is in good, uniform mellow condition. This cultivation should be repeated three or four times or as often as any weeds show themselves; and finally the ground between the rows should be cultivated with the chisel teeth in order to leave the ground loose to a considerable depth at the final cultivation.

Harvesting.—When the beets are ripe, according to the tests made by the factory, and are ordered in, they should be plowed or pulled out of the ground by a special instrument. Then with a sharp knife the tops with the leaves are cut off and left on the ground as a fertilizer to be plowed in. The beets having been thrown in piles are ready for delivery, and should be picked up in baskets and loaded carefully on to the wagons, in order to prevent too much dirt or in some instances stones being taken to the factory, which add to the tare and are otherwise objectionable.

Each farmer should take particular pains to study the characteristics of his own soil with reference to the success attained with the different kinds of seed, different times of planting and the different manner of cultivation, in order

that he may become proficient in the culture of his own particular spot of ground and attain the best results.

There is no crop which will repay the farmer better for the care and labor devoted to it, and the amount of sugar contained in the beets is due entirely to the care and cultivation given the crop at the proper time.

Co-operative Sugar Establishments.

A Santa Ana correspondent of the Los Angeles *Mirror* remarks that any information pertaining to the question of sugar beets is at the present time of considerable interest, not only to the residents of Orange county, but almost all southern California. In Orange county the co-operative plan of building and operating a sugar factory is the only one that is attracting general attention, and with a view of securing some valuable information upon the plan of operation, Mr. Otto Kiser of Santa Ana wrote to an intimate friend, D. Meyerhoff, in Fritzlar, Germany, where a factory is now in successful operation on the co-operative plan. In speaking of the sugar-beet industry, Mr. Meyerhoff writes that the farmers in that country do not raise beets upon the same land every year, but instead, rotate the crops so that each piece of land produces a crop of beets about every three years, crops of wheat, barley or corn being produced upon the land during the intervening years. He says that the land usually produces from 100 to 250 cents per acre, owing, of course, to the fertility and adaptability of the soil for this product. In speaking of the value of the beets to the producer and to the factory, he says that the usual price paid for the beets by the factory is \$5 per ton; then those of the farmers who are stockholders in the factory are paid from 50 cents to \$1.60 per ton more than the farmers who are not so fortunate as to hold stock. Then, besides this advantage, the stockholders get the dividend which is divided after the expenses of operating the factory for the season are deducted, and this oftentimes amounts to as much as 25 or 35 per cent on the investment. Mr. Meyerhoff continues, that to buy stock in the factory is almost an impossibility, and that frequently those wanting to invest in a few shares have to pay as much as three times its par value.

METEOROLOGICAL.

Drouth and Frost.

Samuel H. Gerrish of Sacramento furnishes a paragraph for the February bulletin of the California Weather Service upon a subject which always excites discussion and therefore interest. We quote as follows:

The subject of defining a definite, precise degree of cold at which plants must suffer has been discussed and experimented upon by meteorologists for many years. Prof. Andres Paey says: "There exists still a profound and lamentable disagreement, in most of our speculations, between the abstract sciences and the concrete sciences, or between theory and practice."

The idea has prevailed that a frost would do more damage in wet weather than when it was dry, and the irrigation of orchards has been suspended to "harden the trees." I experimented years ago, and found, to the contrary, that the damage was severe only when the ground was dry; the cause being that the northwest wind was negative in its electrical effect and sapped the positive, or life-giving, electricity from the plants. This weakened the vegetation so that a lighter frost would damage the plants more than a heavier frost when there was plenty of moisture.

M. Charles Martins, the French scientist, writing on this subject, having studied the effect of the northwest winds on the shores of the Mediterranean sea, observes: "The causes of the death of plants in the winter are more complicated than is generally supposed, and we must give up the notion of defining the exact temperature below which they must perish." My experiments and observations have years ago convinced me of the truth of M. Martin's remarks. In 1880, in November, a long cold spell of northwest wind came, when we had received but a light trace of rain. The thermometer was but 1° lower than it has been this winter, and the number of days of killing frosts was less, but the damage to orange trees was very great. This winter the cold has been longer, but there was plenty of moisture, and consequently no material damage to any of the vegetation. I do not know of any orange trees that have been damaged in the least, and the fruit never was finer than this year. The timely fogs that came to us in the cold season, and to which every one objected, have saved us from damage during the prevalence of north winds, while other parts of the State have suffered great loss both to crops and trees.

In December, 1882, during a period of foggy weather, there were heavy frosts, and ice one-eighth of an inch thick formed, but there was no damage to vegetation, while many of the plants started their growth during this time. The wind was south.

A dry north wind will sometimes freeze water and damage plants at several degrees above freezing point, owing to the negative character of its electricity. On the first day of February, 1882, a heavy, dry northwest wind caused ice one-sixteenth of an inch thick to form on vessels of water in my yard, at a temperature of 39°, or 7° above freezing point of the thermometer.

Professor Tyndall says that the loss of humidity, continued through several days, by the action of a drying wind, prepares for the escape of the heat of the earth by night, through unimpeded radiation into space.

Any country surrounded by deserts or treeless lands will necessarily suffer from the negative winds more than those of a forest character. The northwest winds formerly were more destructive to vegetation here than now, as the plains of the valley have been cultivated and planted with trees. The reports of damage to orange trees and the orange

crop in the lower part of the State, at a temperature that would not damage oranges or trees here, prove the truth of my theory, that portion of the State having so large an area of barren lands.

With a south wind no damage may be expected from frosts, if there is moisture. But with a northwest wind a damaging frost may be expected (if the ground is dry) at any degree near the freezing point of the thermometer.

SHEEP AND WOOL.

The Persian Fat-Tailed Sheep.

We have made several references to these animals, of which we now have a number in this State. R. M. Bell, a well-known Eastern sheepman, writes for *Farm and Fireside* as follows:

Mr. C. P. Bailey of California, the largest breeder and importer of Angora goats in this country, in connection with a grand exhibit of goats, showed ten head of Persian fat-tailed sheep at the World's Fair. About three years ago a small flock of these singular sheep was presented to the United States Department of Agriculture, to be placed under favorable conditions for acclimation as an experiment. The late Jeremiah M. Rusk, Secretary of Agriculture, after due consideration, sent them to Mr. Bailey, believing the surroundings would correspond with their native habits so nearly that they would do well. The selection proves to be a fortunate one, as the sheep not only maintained themselves in good health, but increased in numbers very rapidly. They appear to be as hardy as Spanish goats, which they resemble in several respects.

The color of these specimens of the breed was entirely nondescript, since they had various shades, though mainly black and white, without any uniformity among the different individuals. They were of good size, and appear to be quite as domestic as any other breed of sheep known to us. Their ears were large, and hung down alongside of their faces, quite like the Angora goats.

They were without horns; their wool was coarse and hairy and wholly without attractiveness as we esteem wool in this country. Their heads were large and well placed on strong necks that gently sloped to the shoulders in the most approved pattern of modern standards. The carcasses were uniform in type, with straight backs and underlines. The legs were strong and straight, set well apart. The fore quarters were light, while the hind quarters presented the most ludicrous appearance, owing to the curious accumulation of fat.

This exhibit attracted much attention from visitors who for the first time enjoyed the opportunity of looking up this Oriental breed of sheep that has come down from patriarchal times without any change of type, form or color. Persia has not kept pace with the world in progress and improvements. The shepherds still follow the wandering life of their ancestors three thousand years ago. Their sheep constitute a large part of their wealth. What they are to-day they have been from time immemorial.

It is interesting to know that Mr. Bailey is of the opinion that the Persian sheep will be more than a curiosity—a real acquisition to the mutton-producing sheep of this country, whether the fleeces afford a profit or not. In their native country these sheep are very prolific, and do not seem less so in this country. It is probable that Mr. Bailey will continue to breed them pure and distinct, but it would be interesting to know how they would cross with other breeds. In due time, no doubt, Mr. Bailey will make an official report to the Government of this curious and interesting experiment of acclimating this breed of sheep in this country. In the meantime, it is safe to conclude that this experiment is in the best of hands, and is being conducted in such a way and under surroundings that will produce the best and most satisfactory results.

TRACK AND HARM.

The Chicago Horse Market Looking Up.

It is cheering to read in the *Breeders' Gazette* that the Chicago horse market has for several weeks given premonitions in a conservative sort of way of an improved demand and brisker trade, and last week it announced definitely a more encouraging state of the market, namely, there was a strong demand for coachers and speedy drivers. We quote as follows:

Beyond shadow of doubt the market for snappy pairs suitable for the heavier classes of pleasure vehicles is in no danger of being overdone. Heavy harness horses are demanded for these fashionable equipages; the light, rangy and speedy horse of the road-wagon type will not do. He is a decided misfit to brougham, break or landau. He has his place and the market report shows that the shapely light-harness horse with speed enough to "dust" the lumbering plugs is wanted at remunerative prices. But the man who gets a horse with sufficient size, proper shape and trappy action, fitted for use in spider phaeton, or cart, or brougham, or break, or coach, will find that a very encouraging market awaits him. The man whose ambition finds its limit in breeding street-car or delivery horses from the cheapest stallion he can find will do well by himself and his neighbors who are breeding horses in earnest if he drops quietly out of the business. Such men may find a remunerative field in breeding swine. It does not now require a high order of intelligence to breed pigs, for skillful molders of the porcine form have placed within easy reach the highest type of foundation material. The man who knows how to mate mare and stallion will find much of comfort and encouragement in the improving market.

Draft horses are also in improved demand. "Chunks," such as the compact sort of Percheron, Shire, Belgian and

Clydesdale sires sometimes produce, are in request, while the heavier sorts are taken more readily than has been the rule of late. There is no evidence of high prices in the immediate future, but the market is not without features which warrant the belief that the margin between profit and loss will not be so small as it has been.

In view of the above tokens of improvement the following in a recent issue of the same journal has special timeliness:

Many breeders attribute the present condition of the horse market to overproduction and the introduction of electricity. The overproduction has been entirely of the cheaper grades and this class is what is being displaced by electricity. Electricity can never take the place of the heavy draft or fine coach horse. General business depression has had more to do with the fall in the horse market than anything else. Nearly every one is economizing and doing without or making the best of what they have. That this condition will last no one believes. A renewed demand is among the certainties of the future. When this fresh demand does come there will be a short supply to meet it because of the falling off in breeding for the past three years and the probable continuance of it for a year or two to come. During the past four months I have sent out over one thousand letters to parties in all parts of the United States and the British Provinces that I thought interested, and with the exception of about twenty-five they have answered, "farmers in our vicinity are giving up horse-breeding;" and I understand from others who have been breeding horses for sale that their correspondents answer in about the same tone. Now this fact alone, to me, is strong evidence of what is in store for those who keep on breeding first-class horses; another boom will strike them and "their dish will be right side up."

Horses as a rule are short-lived animals. The visible supply is being used up at a very rapid rate and the fact that it takes five years to produce a horse ready for market is lost sight of by the croakers who are now and have been for years crying the horse business down. Another fact is that the best time to engage in the production of any staple commodity is when it is down and not when it is booming. There are two safe plans to follow: one is to fix upon a line of business and stick to it persistently, and another is to watch those who are producing the same article, let up when they are pushing hardest, and be ready to go on when they let go at ebb-tide.

Taking past experience and a candid view of the future of this country, I consider now a favorable time for those farmers who are favorably situated to take hold of high-class horse-breeding in earnest. They can now secure a choice selection of mares at moderate cost and buy first-class stallions at "rock-bottom" prices. The latter can now be bought cheaper than they are likely to be again for several years, for the reason that this year will about use up the stock of imported stallions on hand, and good ones cannot be imported to sell at the prices prevailing now. There are not enough registered mares in the country to supply any considerable number of stallions fit for service.

So many farmers have learned that they cannot produce salable horses from scrub mares and indifferent stallions and have given up the attempt that the chance for those who can and do raise first-class horses in the future will be greatly improved. Where three or four farmers will join and buy a strictly first-class stallion in company they can secure the permanent use of him themselves at a nominal cost and allow him to earn sufficient outside to pay a handsome dividend. There is no good reason why American farmers may not, by taking the same pains, acquire the reputation and produce as good horses as the English breeders, and at much less cost. The same persistence and energy that has made the American trotter popular in Europe will do the same for the American coachers and draft horses. We have made good progress already and now to drop it because of a temporary depression that is liable to come to any business is to lose ground and throw away good opportunities.

The manufacturer can stop his mill for a day, a week or for months and start up at practically the same place where he stopped, losing little more than the interest on his investment. Not so with the breeder who sells off his brood mares or allows them to pass their bloom and most desirable years barren. I have known farmers who had spent a great deal of money and many years in breeding up a nice lot of mares to sell them off in a fit of despondency, retaining only such as they could not sell.

The present conditions are simply the result of bursting boom bubbles. This great country is not going to destruction; business is settling down to a sound basis and a healthy reaction is sure to follow. A revival in general business will bring a quick and strong demand for horses and the man who then has good ones to sell can name his own price for them. It is the firm conviction of the best informed horsemen that that time will come before the foals of 1894 are ready for market. I trust these few suggestions will cause some breeders to look at the prospect from a practical standpoint.

THE VENTURA ADVOCATE says: One of the trials and vexations of life to the foothill farmer is the mischievous squirrel. Several of our farmers have tried a preparation of poisoned wheat, which proves a great success. I have seen dozens of dead squirrels after a single application of the poison. The following is the formula: To 6 gallons of wheat take 1½ ounces of cyanide of potash, 1 ounce of pulverized strychnine, 9 eggs, and 5 pints of sugar. Powder the cyanide of potash and dissolve it in very little water. Beat the eggs, add the strychnine, sugar and cyanide of potash, and pour over the dry wheat, stirring until the whole mass is wet with the poisoned egg. The mass will dry in a day or two without being spread or spoiled. Add oil of rhodium to scent strongly as you take wheat out for use. Put a teaspoonful in big holes. Go over the ground after a week to see if any holes contain live squirrels. Two applications will rid a whole hillside of them.

POULTRY YARD.

Choosing and Treating Eggs for Setting.

This is a subject of constant interest in the poultry yard, and a general review like the one by Stephen Beale in the *Country Gentleman*, from which we shall quote, will be found to contain information very acceptable to beginners:

In the choice of eggs for hatching, it is most important that they should be well formed, and of the average size. Abnormally large and ill-shaped eggs should always be rejected, for the former are usually double-yolked, and the latter either do not hatch or the chick is in some way malformed. The size of the egg does not determine the size of the chick, but very small eggs would be equally unsuitable; so that it is much better to have eggs of an average size and regular shape.

There can be little doubt that in order to obtain strong, hardy chickens it is desirable that the eggs should be fresh. Every day after an egg is laid the germ loses something of its vitality, and in process of time will die. The exact time for which eggs can be kept and yet produce chickens has never been determined, and there is abundant scope for further investigations in this direction. Much would be found to depend upon the conditions under which they are kept, and we believe that they would maintain their vitality at a low temperature, so long as not actually frozen, for a much greater period than if there were even a fair amount of heat or great variations. Yet how long this would be is at present to some extent conjecture. That eggs can be easily kept for a month is undoubted. Many have been sent to America, and the percentage of chickens has been satisfactory, though not nearly so good as at home. Two years ago a trial was made by sending eggs to Australia, but without success. In this case, however, I think it was due to the fact that they had to pass through the tropics and the germ vesicle was started into activity, rather than the time taken on the journey. If they could have been carried in a cool place, where the temperature was maintained at 35° to 40°, I am inclined to think a better result might have been arrived at. This may be tried, and I hope will be ere long. Some time ago I was told that eggs had been successfully carried from England to India, but have not been able to verify the fact, and in the absence of clearer testimony cannot accept the statement. When eggs are produced where they are to be hatched, it is advisable to keep them as short a time as possible; in fact, not more than two or three days, unless there be some special reason for doing so. When keeping eggs, they should be where the temperature is even and rather low, though not quite down to freezing point, placing them with the broad end downward at first, and turning every day. For this purpose either boards perforated with holes large enough for the eggs to stand upright, or lattice wirework, are the most suitable, though they may also be packed in bran, which is not so good a plan.

Considering the large trade done in eggs for setting, and the long distances they sometimes travel, it is well to consider the effect of traveling upon eggs. That they can do so safely is unquestionable, for scores of thousands do every year. Many boxes have been introduced to this end, simplifying the work greatly, and some of these are excellent, while others are not nearly so good. Personally, I prefer baskets to boxes, for there is less danger of breakage and that jarring which displaces the yolk sac and leads to all sorts of deformities. A properly packed basket is springy, which a box can never be. If eggs are packed in soft, dry moss or hay, and placed in a hamper or basket, they will travel far and stand a lot of knocking about. Boxes with wire to hold the eggs should be avoided, and even those with partitions of cardboard should have pads of felt or moss below, the eggs themselves being wrapped in dry hay or moss. In this way jarring can be avoided, and unless this is so success cannot be looked for. I am sure that very many ill results from bought eggs are due to the bad methods of packing adopted. Moreover, all eggs that are to be forwarded by rail should be allowed to stand for 24 hours before they are packed, in order to allow them to become perfectly cool and set, and the recipient should adopt the same precaution, for it is expected that there will be some shaking up however carefully they are packed.

Finally, every egg used for setting, and placed under a hen or in an incubator, should be clean. If its shell is soiled in any way, let it be wiped with a damp cloth, so as to remove every speck of dirt. During the entire process of incubation air is passing through the pores of the shell, and the presence of dirt may pollute the air, and even charge it with microbes of disease.

Comfortable Poultry Houses.

F. M. Reed of Anderson, Cal., writes as follows for the *California Cultivator*: How many poultrymen and farmers have comfortable quarters for their fowls at night, or on a blustering day when the wind is cold and finds every crack and crevice? Let each one answer this for himself by staying half the night in his fowl house on some cold stormy night, and I think many that are now unconcerned about Biddie's welfare would hasten to stop up those cracks, repair that broken window, and see that the fowls had a warm, dry corner to roost in. My attention was drawn to this matter not long since in taking a ride of 10 or 12 miles through the country, to see the lack of interest in this matter. Little or no profit is made by the majority of farmers on their fowls because of the entire lack of care given them. This state of things has brought about the idea in the average farmer's mind that one fowl is as good as another, therefore they go on breeding scrubs, letting them roost in an open shed or upon the fences or trees. I was particularly struck with one place where I called. It was the home of a man who told me that he and his wife had bred poultry for years. A beautiful two-story dwelling house was located on a commanding site, overlooking a

beautiful stream and a canyon below. A large and comfortable barn afforded abundant room for all the stock. A good, tight woodshed and other sheds for tools were conveniently located. But now, as we came to the chicken house, what a difference was here manifested. A square building, boarded on three sides, and cracks not battened at all. The fourth side was made of slats or lattice work from top to bottom; the roosts were made of poles, high up, and a general air of discomfort pervaded the whole structure. What if the owner had been compelled to sleep on a raw night in a room like this, with no covering, and the cold rain beating in on him. He had previously said to me, "Why do you suppose I get no eggs; I haven't had one for six weeks." I frankly told him I did not think he would ever get any, if he did not give his hens a warm house, proper feed and care.

Notwithstanding the fact that we live in sunny California we are often treated to sudden changes of temperature, and it must be remembered that winter is the trying season as well as the profitable one to the poultryman. We cannot pay too much attention to the strength and vigor of our fowls, and to get the greatest possible growth and number of eggs, they must have warmth in winter. This is just as essential as grit is to digestion; and, speaking of grit, it must be remembered that hens are born without teeth, and we must supply them by the medium of a liberal supply of grit. A good article can be manufactured by any one who has a bone or grain crusher, by saving up all broken dishes and crockery and grinding to any size desired. Fowls will often eat this in preference to shells. Improvement of the breeds we already have should claim our attention. It is safe to say that one male may be the sire of 1000 chicks in a single season. If farmers in general could only realize this and purchase only thoroughbred males, we would soon see a vast improvement in the size and laying qualities of the average barnyard fowl.

Necessity of Regularity in Fruit-Train Time.

Alden Anderson of Suisun writes as follows: Ask all the growers and shippers of perishable fruits in the State of California what the greatest handicap they have to contend with in their business is and I think 99 per cent of them will say "Poor railroad service." To illustrate: A shipper is told that the schedule time of a ventilated car to Chicago is six days. He picks and packs his fruit accordingly; the car starts; six, seven and ten days go by and no word is received acknowledging the receipt of the car. At last, anywhere from ten to fifteen days later, word comes, "Car received; bad condition." The next time the shipper thinks he will not be caught, so he prepares his fruit to stand a journey of twelve or thirteen days, when, lo and behold, the sixth or seventh day he receives word, "Car received; green and unsalable." There he is, completely at the mercy of a capricious railroad service. There is absolutely no regularity.

What the fruit-shippers of California want is a schedule that will be adhered to as rigidly as is the passenger service. A shipper should know at just what time his car will arrive at any point, barring accidents, the same as a passenger on a passenger train now does. If it takes ten or twelve days to make the trip to Chicago, arrange the schedule accordingly and the shippers will know just what to expect. If their fruit will not stand transportation for so long a time they can dry or can it, and make some profit; whereas, if they ship it and lose there is not only the loss of the fruit, but a heavy bill of expense besides. This point, as you will find by inquiry of leading shippers, has been insisted upon, the last few years, more than any other one. Promises are made to them by the transportation companies, but when the busy season comes the promises are never kept.

Fish Display at the Fair.

The next feature of the competitive-exhibit order at the Fair will be a display of the fish industry, from April 5th to 12th. Space has been provided for this exhibit in the arcade in front of the Agriculture and Horticulture Building. A number of tables will be placed there for the purpose, and the fish will be taken directly to the Exposition grounds and placed on ice on these tables.

It is proposed to make it one of the prominent features of the Fair, and the fish of all countries, as well as of the Pacific coast in general, will be shown. There will be fresh, smoked and salt fish. Few people realize the amount of capital involved in this industry on the Pacific coast. As is probably well known, salmon constitutes the chief branch of it, and last year over \$5,000,000 was expended in catching, packing and shipping this one variety. The total value of fish passing through San Francisco amounts to over \$6,000,000 annually. The codfish exhibit will not play a prominent part in the proposed competitive display, but will have special arrangements made for it later in the season, or at such a time when the condition of the fish will permit.

GEORGE W. MCNEAR has acquired Starr & Co.'s interests in the grain business, including the warehouses, etc., at Port Costa. Both parties decline to discuss the deal, though admitting that it has been made. In the minds of some persons the purchase has created the belief that McNear is preparing for another plunge into the wheat market similar to the one he made not very long ago. Then he bought wheat right and left and was fast gaining a controlling interest in the market. He was eventually compelled to stop, however, because of his inability to secure storage room. During his former plunge McNear chartered about every wheat vessel that headed for this port, and had been in a position to carry out his plans he would have ended with quite an addition to his bank account. The purchase of the Starr warehouses gives color to the belief that a second plunge is being arranged.

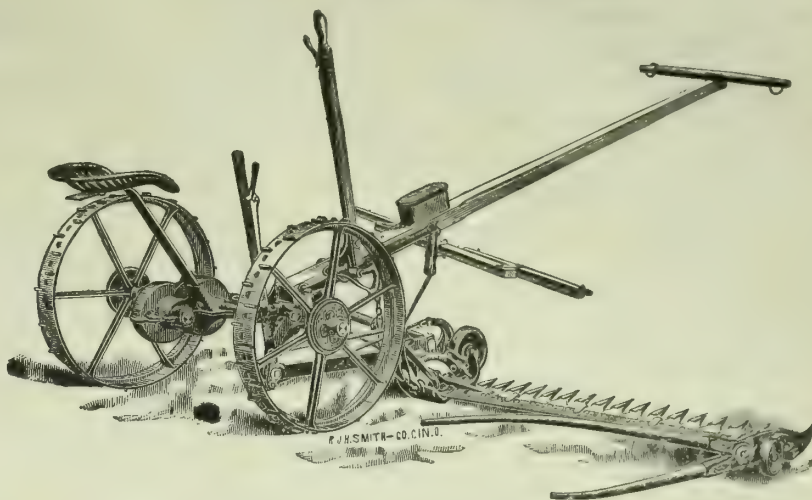
The Situation as to Horse-Breeding.

Before giving up the breeding of horses and declaring the business dead, will it not be well to take a candid practical view of the case, and before throwing away an advantage already gained, consider well what has brought on present conditions, whether the causes are likely to continue indefinitely, and if not, how best to take advantage of the change when it comes. Nearly every kind of business has had its boom and reaction during the last twenty years, and the horse business has been one of them. Its effects have been and are felt over a wider extent of country than almost any other business, because it is so intimately connected with every other. Many breeders attribute the present condition of the horse market to over-production, and the introduction of electricity. The over-production has been entirely of the cheaper grades, and this class is what is being displaced by electricity. Electricity can never take the place of the heavy draft or fine coach horse. General business depression has had more to do with the fall in the horse market than anything else. Nearly every one is economizing and doing without or making the best of what they have. That this condition will last long no one believes. A renewed demand is among the certainties of the future. When this fresh demand comes there will be a short supply to meet it, because of the falling off in breeding for the past three years and the probable continuance of it for a year or two to come. Horses, as a rule, are short-lived animals. The visible supply is being used up at a very rapid rate, and the fact that it takes five years to produce a horse ready for market is lost sight of by the croakers who are now and have been for three years crying the horse business down. Another fact is that the best time to engage in the production of any staple commodity is when it is down and not when it is booming. So many farmers have learned by sad experience that they cannot produce salable horses from ordinary stallions and have given up the attempt, that the chance for those who can and do raise first-class horses in the future will be greatly improved. Taking past experience and a candid view of the future of this country, it would seem that now is the right time for those farmers who are favorably situated to take hold of high-class horse breeding in earnest. They can now secure a choice selection of mares at moderate cost and buy first-class stallions at "rock-bottom" prices. The latter can now be bought cheaper than they are likely to be again for years, for the reason that this year will about use up the stock of imported stallions on hand and good ones cannot be imported to sell at prevailing prices. Think on these things. Should not, under the circumstances, the owners of mares be more particular than ever in their choice of stallions and breed more judiciously than ever for the inevitable future market? The present conditions are simply the result of bursting boom bubbles. This country is not going to destruction; business is settling down to a sound basis, and a healthy reaction is sure to follow. A revival in general business will bring a quick and strong demand for horses, and the man who then has good ones can name his own price for them. Of course, the main point in breeding is the choice of a stallion, and care should be taken to buy only the best and from a reputable importer.

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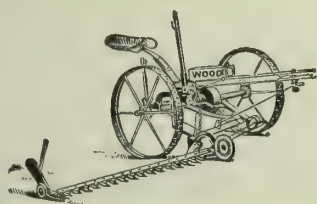
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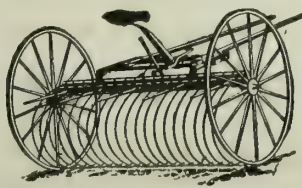
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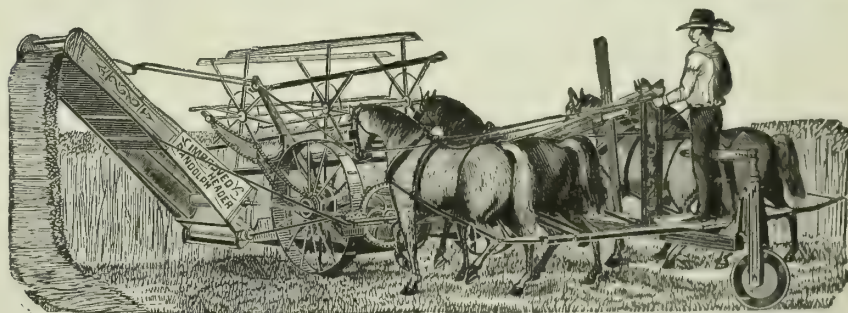
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THE HOME CIRCLE.

"My Brother'll Be All Right."

always was in those old days the family's blackest sheep; Someway I couldn't curb the blood that in my veins would leap. My cousins walked a straight-hewn path according to a rule, And rarely swore, and never fought nor "hookey" played at school; And all my uncles shook their heads and said, "He will go bad; There never was more cussedness boiled down in one small lad." But whatsoever they all vowed, and whatso'er my plight, My sister stood right up and said, "My brother'll be all right."

She didn't say, "My brother is," you mind—she didn't dare; But when she said, "My brother'll be," I'd vow right then and there That though I fell and barked my shins until they were a sight, I'd rise again, and prove at last that that dear girl was right. And so her trust would follow me, for boys, you know, like men, Where'er they fall need human faith to pick them up again; And few, I think, are ever lost or conquered in the fight. Who somewhere know one soul that says, "My brother'll be all right."

Sometimes in that sweet hour before the daylight all had fled My sister'd creep into my arms and rest her bonnie head Upon my shoulder, and she'd tell of all she dreamed for me. Oh, loyal heart of foolish faith! Through eyes bedimmed I see The eyes of blue her soul looked through, the face with love aglow, And scarcely will my heart believe 'twas long, so long ago, That golden hour; for still I hear as 'twere but yesternight The words she whispered in my ear, "My brother'll be all right."

'Twas long ago; the frost of Time has cooled my youthful blood; No more it hurries to and fro, nor runs a restless flood. The miles are wide 'twixt her and me; the years are long between; She walks where earth sleeps in white, and I where it is green; Yet does her faith still urge me on, and whisper me, "Be true," To fight my fight, and, stumbling oft, the battle yet renew; And I reply: Oh, sister mine, though dark may be the night, I'll justify the trust that said, "My brother'll be all right."

—Stockton Mail.

Little New Year.



NEAR the Spanish Peaks in Southern Colorado, some twenty-five miles from the railroad town at Pueblo, lay a little mining camp, called Shanty Flats. Not a very pretty name, to be sure, but descriptive of the place, for the dozen dwellings which formed the camp were nothing but shanties, save one log cabin belonging to the head man, Captain Will, as the men called him. Except a few Scotchmen, the twenty miners under his direction were Americans, men who had come to the great West seeking gold, and not finding their hopes realized, had hired out to Captain Will, who owned a large claim in southern Colorado, and wanted men to help work it. The little settlement was like many another of the kind, where God's name was daily profaned and the men amused themselves in card-playing, smoking, and sometimes in drinking, when any of their number had been to the town for supplies, which happened once a month.

It was the last day of December, and snow was fast falling as the miners came straggling in from their work. They fed their mules, ate their suppers, and sat down for an evening's game in Captain Will's cabin, where they usually gathered. Two of them had gone on the monthly trip for supplies down to Pueblo, and as it drew toward midnight the men began to wonder where they were.

"Come!" at last exclaimed Captain Will, "let's look out and see if the boys are coming! Time they were here three hours ago; wonder if the snow has bothered 'em!"

So out went a dozen of the men into the storm just in time to see, far down the trail, two faint glimmers of light, which proved to be the lanterns of the absent ones.

"I say, what has Tom got in his arms?" exclaimed one, as the men and mules came nearer. "It looks like a baby, for all the world!" and a laugh went up from the men at the idea. "Say, Tom, been kidnapping to-day?"

But the man, dismounting, ran toward the cabin with his burden, not waiting to explain, and the rest crowded around him as he laid on one of the rough benches the

body of a sweet little girl, who seemed to be dead.

"Stand back, boys! give her air!" commanded Captain Will, as he chafed her little cold hands, while another rubbed her feet.

Great was their joy when she opened her eyes, but frightened at the sight of so many men, closed them again, crying, "Mamma! mamma!"

The captain sent them all away and tried in vain to soothe her; but at last, worn out with crying, she dropped to sleep, and he laid her on his own bed. Not till then did he have a chance to ask the men about her. It seems that on their homeward trip they heard a child sobbing, and found this little one trying to waken her mother, who lay in the snow by the roadside. They dismounted, and found that the poor woman was dead. They searched her pockets, but found nothing that would give any clue; so, after burying her, they came back again to camp, bringing the child.

Shanty Flats was a different place now. After a few weeks the little girl grew more forgetful of her loss, and began to get used to her strange surroundings. When they asked her name, she always said, "I'm mamma's darling," and seemed to know no other title.

So they called her their little lady, till one night, as they sat around the fire, Captain Will said, "Boys, I've been thinking about a name for the little one vander asleep. I'd like for her to be called New Year. I know it ain't a common name for a human being; but she came to us at midnight on December 31st, and she's making a new kind of year for us, and I like a name that means something. What do you say?"

"Good for you, cap'n!" "You've hit it!" "Three cheers for our little New Year!" went up all over the room.

He spoke truly; it was a new year for them all, especially after the night when she first knelt down by the bedside in the inner room of the cabin, and prayed: "God bless my dear dead mamma, and mamma's darling! Please, God, bless everybody, and make them good, and help me to be a good girl, and take care of me, for Jesus' sake!"

The door was ajar, and as the sweet voice was heard, every man dropped his cards and listened. And they didn't take them up again, either; for when Captain Will came out of the bedroom, his eyes were misty, as he said: "Boys, does it seem to you as though we ought to gamble so near that child?"

The boys didn't say what they thought; but little New Year never saw any gambling. One day a man swore in her hearing; but it was the only time, for a dozen cried out, "Hush, Jim! For shame! Remember the child!"

Oh, she was such a delight in their lives! There was a rivalry as to who should tell her the best story, or make her the prettiest toy; and when the glorious Colorado summer came, every kind of wild flower was brought to her. Sometimes they took her down into the mine for a little while, and any one of them considered it a special privilege for her to go to walk with him. To every man there she represented something sweet and pure in his past. Her favorites among them were Captain Will, who took the most care of her, and one of the Scotchmen, who told her she looked like the little blue-eyed lassie he lost years ago.

So the weeks and months went by, and the new interest in their lives made the work less toilsome. Never had a child so many presents at Christmas; for every one had something for her, either of his own make or bought at the town, and she danced with delight over her new possessions.

"I think God has been very good to me," said she, gravely, that night, "to make you think to give me so many pretty things."

The next day word passed that little New Year was sick; and in spite of all they could do she grew worse hour by hour. The men wandered around aimlessly, with sad faces. One of them, who had been a medical student, tried all his skill, but there was no change for the better; and just a year from the night the child came, she lay apparently dying. The men clustered together in the room, and Captain Will sat by the bedside, his face buried in his hands. It was very still, until one of them spoke low: "Boys, can't somebody pray? Seems as if it's the only thing left to do."

They looked at each other, but no one stirred. A moment more, and the roughest of them all fell on his knees and prayed: "God, we're rough men, and wicked men; Thou knowest it, Lord. But there's summat in Thy Book about askin' and receivin', so we ask for our little girl to be given back to us. She's the sunlight o' the camp, and the only thing that keeps us from the bad. Thou doesn't need her, Lord, and we does. God, save her life, and we'll be better men." And

"Amen!" came from lips unused to pray.

The dear Heavenly Father heard and answered, for when the sun arose, little New Year opened her eyes and said: "Oh, the pretty light! I want to get up and have my breakfast."

"Praise the Lord!" broke from Captain Will's mouth. "Boys, I'm going to serve him from this day forward."

Nor was he alone, for a work of grace began in the camp, and many a one learned to pray for himself.

The winter wore away, and one night, early in the spring, Captain Will said: "Boys, I've something serious to say to you. I've been thinking that if this was my little girl I'd want her to have an education, and a better bringing up than this child is getting among us men; and if you're willing, boys—for I feel your right to her is just as good as mine—I want to adopt little New Year as my daughter, and take her East to have her brought up as she should be. Now say just what you think."

The matter was discussed till late at night, and at last, though reluctantly, they all agreed that it was the best thing to be done; and Captain Will, after selling out his claim, started for New York. How the men did miss the child and talk about her; and when in a couple of months a long letter came from the East, they were eager to hear it read. One part of it ran thus:

"Friends, I can't begin to tell you how happy I am. Little New Year (for I still call her by the old name, though at school she is Nellie) and I talk about you very often. I have bought a home here, where every one of you will be gladly welcomed; and, boys, God is in our home, and may He bless and save you, so that, if we never all meet here, we may in heaven."—May Agnes Osgood.

Gems of Thought.

Mutability of temper and inconsistency with ourselves is the great weakness of human nature.—Addison.

Those who reason only by analogies rarely reason by logic and are generally slaves to imagination.—C. Simmons.

Slander is a vice that strikes a double blow, wounding both him that commits and him against whom it is committed.—Saurin.

Make people happy and there will not be half the quarreling or a tenth part of the wickedness there is.—Mrs. L. M. Child.

Sunday is the core of our civilization, dedicated to thought and reverence. It invites to the noblest solicitude and to the noblest society.—Emerson.

It is by imitation far more than by precept that we learn everything, and what we learn thus we acquire not only more effectually, but more pleasantly.—Burke.

Others will judge you, not by what you can be, but what you are; but you must judge yourself, not by what you are, but by what you can be.—Ivan Panin.

To do an evil action is base; to do a good action without incurring danger is common enough, but it is the part of a good man to do great and noble deeds, though he risks everything.—Plutarch.

Great sins are not so sudden as they seem. Familiarity with evil thought ripens us for evil action; and a moment of passion, an hour's loss of self-control, a tempting occasion may hurry us into irremediable evil.—Dods.

Verily, verily, travelers have seen many monstrous idols in many countries; but no human eyes have ever seen more daring, gross and shocking images of the Divine nature than we creatures of the dark make in our own likenesses of our own bad passions.—Dickens.

How much trouble he avoids who does not look to see what his neighbor says or does or thinks, but only to what he does himself, that it may be just and pure; or, as Agathon says, look not around at the depraved morals of others, but runs straight along the line without deviating from it.—Marcus Aurelius.

Domestic Partnership.

However advanced the world may be said to be; however quickly we may grasp and adopt new fads, fancies and notions; and however much we may think we have improved upon old times and former usages, there are yet a great many things that are susceptible of decided betterment.

Among these the management of household affairs stands out prominently, especially that phase of it which involves the financial understanding between the husband and the wife.

For a great many years it was thought that women were not capable of managing their domestic concerns as far as money matters went. There was, to an extent, some show of reason in this idea, and in some instances there is yet; but, as a rule, the existing state of things is just about as bad as civilized people are capable of making it. A little analysis of the situation will readily discover why this is so.

A man of more or less mature years, who has made or is making a competence or a good living, marries a young woman, sometimes scarcely more than a child. She has been in school almost all of her life, and has never assumed any responsibility in money matters other than to be expected to make her allowance buy candy and other petty luxuries. If the money were all gone, she went without confectionery and trinkets until the next time, and it was just as well, perhaps better. This constituted her limit of financial experience. Her bills were paid, her necessities provided for, incidentals were looked after and shortage was made up. Whatever she wanted in excess of this, she coaxed or cried for until she got it, or maybe was sulky, sullen or disobliging until the coveted article was forthcoming as the easiest way out of the unpleasant state of affairs.

Fairly launched upon the sea of married life, that condition in which young people feel at liberty to do as they like, her natural inclinations, untrained and unguided in the bud, blossom out into extravagant and unreasonable demands; and feeling a perfect right to call for whatever she desires, trouble comes sometimes suddenly and without warning. It is safe to say that money matters are responsible for more domestic infelicities than all other causes combined. The man is not long in discovering that his wife manages badly and he tightens the purse-strings. Instead of carefully instructing her in the use of this necessity of life, he becomes arbitrary and often unreasonable, insisting, in many cases, that all articles shall be bought on credit and the bills sent to him to overlook.

There are few things in the world more annoying than a systematic espionage of this sort, and the knowledge that even the most trivial purchase has to be accounted for. It is humiliating and puts the mistress of the house on the level of an irresponsible child. How much better it would be to arrange at the outset some fixed method in which forbearance on both sides forms an important part. Honorable, straightforward, honest men have very little reason to fear the knowledge which their wives may have of their business. It is only when illegitimate pleasures and indulgences are to be provided for that there is any occasion for such secrecy.

A woman who is confided in and trusted will, as a rule, feel quite as much pride in and interest for her husband's prosperity as he himself does, and it is almost always possible, when business is depressed, for a well-informed woman to curtail expenses and suit her demands to the exigencies of the situation. But where there is no understanding or confidence, where money is literally doled out—and that, too, in the most grudging manner—a feeling of resentment springs up, and the idea prevails that there must be just so much contention anyway in order to get what is required. Under such circumstances, there is no wonder if the demands are excessive and infelicities follow fast upon one another's heels.

The money question, more than any other, is responsible for the reluctance of women to

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marry and their ambition to provide a competence for themselves.

Curious Facts.

Corsets have been found on the mummies of Egyptian princesses of the royal family.

Lobsters have a great dread of thunder, and when peals are very loud will swim to deeper water.

The owl's wise look is the result of a physiological oddity, his eyes being fixed immovably in their sockets.

Humboldt describes an oak tree which he saw in France, which was 90 feet in circumference at the base and was estimated to be 2000 years old.

Liberia is the only more or less civilized country where clocks are almost entirely dispensed with. The sun rises exactly at six A. M. and sets at six P. M. throughout the year, and is vertically overhead at noon.

In a ton of Dead Sea water there are 187 pounds of salt, Red Sea 93, Mediterranean 85, Atlantic 81, English Channel 72, Baltic 18, Black Sea 26, and Caspian Sea 11.

The city of Glasgow, in Scotland, has a multitude of low-legged and knock-kneed children, made such by an almost exclusive diet of potatoes, they not getting bread, which contains the elements which stiffen and strengthen bones; and the same lack occasionally produces the painful specimens of rickety hunchbacks to be found in American tenements.

The lion is a formidable-looking beast, and his imposing appearance and great strength have caused him to be crowned the "king of beasts." But for all that, he is really inferior in muscular power to some other members of the same family. The strength of his fore limbs is said to be only 69 per cent of that of the tiger, and of the hind legs only 65 per cent.

The Congress of Norwegian Physicians, which recently met at Christiania, instead of hiring a hall, held its meetings on a large steamer which moved from place to place, so that they had fresh air and change of scene while they were holding their deliberations. Thus they were hygienic as well as scientific, and possibly less depleted in purse than if lodged in hotels.

The loftiest scientific station in Europe is Sonnblick's Observatory in the Austrian Alps. The keeper, Peter Lechner, has hitherto led a hermit life, but has recently found a peasant girl who will share his lofty and silent abode. The wedding took place at a village at the foot of the mountain, and among the wedding gifts were presents from the Emperor and from several native and foreign scientific societies.

A process of plating aluminum has been devised by Prof. Neesen, a German chemist, which shows very good results. The aluminum is first dipped in a solution of caustic potash or soda, or in murlatic acid, until bubbles of gas begin to appear, then into corrosive sublimate, then a second time into the caustic or acid, and finally into a solution of a salt of the desired metal. A film of the metal is rapidly formed, and adheres so firmly that, in the case of gold, silver or copper, the plate may be rolled out or polished.

Fashion Notes.

Linen and duck dresses are to be popular again this year. They are made in the coat and skirt style and worn with vests and shirts.

Capes and loose wraps are a necessity not to be ignored while large sleeves are in style, so they are sure to be worn more than jackets.

New creped zephyr goods come in stripes, chine and dotted effects, some of the fabrics showing a creped colored stripe alternating with one in cream or ivory white, likewise creped.

Very pretty vine-embroidered, brier-stitched or tuck and insertion, all-over fabrics in lawn, French muslin and Indian linen are shown this season, designed for yokes, waists and bordering for summer dresses.

Besides the leagues of fancy lace of every imaginable design, and of every width, from one inch to one yard, in cream, corn, white, black and butter color, are more novel garnitures of frilled tulle hung with sparkling spangles and sequins. These will be alike popular for bodice trimming and decorations in millinery.

Now that spring has come with its wealth of blossoms, the custom of wearing them is increasing. Not very long ago it was considered bad taste to wear natural flowers, but some gracious lover of their beauty and fragrance has originated the pretty idea of being known by a special favorite flower.

YOUNG FOLKS' COLUMN.

Making B'lieve.

I've maked b'lieve I was mamma,
And been to the bargain store,
But the bargain (the baby) wiggled so
That I couldn't play that any more.

I've maked b'lieve I was C'lumbus,
And discovered the world all over,
The rug was the 'Lantic ocean,
And I sailed on the nursery sofa,

I've maked b'lieve I was an Indian,
And scalped Polyhemia twice,
And I played be a big polar bear,
With the looking glass for ice.

I've maked b'lieve I was the doctor,
With pearl tapioca pills,
But I was 'bliged to give up practice,
'Cause I couldn't c'lect my bills.

Two times I've b'lieved be a circus,
And two times the coal man, too,
And once I was Robinson Crusoe,
And once I was Little Boy Blue.

Oh, I've maked b'lieve and I've maked b'lieve,
Till there's nothing else to be!
And now—I'm so hungry, mamma—
Let's make b'lieve I was me.

—Youth's Companion.

A Dangerous Task.

AT the time I was sixteen years old I went, early one spring, to work by the season for Mrs. Guthridge, a widow who lived twelve miles from my mother's in Penobscot county, Me. My father had been dead two years then; and as I was the only one of six children who was old enough to earn anything, it was highly important that I should do my best and keep my place.

I was to have eleven dollars a month for the season of six months; and our family hopes of food and clothes for the coming winter hung much on that prospective sixty-six dollars. Mother's last words to me when I took my little bundle and started for the widow's farm were, "Now you must try and stay, Jesse, even if the place is a little hard, for I don't know where you could get another."

She knew well that the place was a hard one, and so did I, but wages for a boy were scarce in that part of the country. I had been hired because scarcely anybody else would go to work for the widow, who surpassed most men as a taskmaster. She drove her help early and late, and her table was known to be poor.

Her farm was a new, large, unproductive clearing in the forest near the Penobscot river. Guthridge himself had been a lumberman, and was drowned while on the drive one spring. No doubt the widow found it hard to support herself and family, but her necessities hardly excused her rude manners and rough temper.

She always called me out at four in the morning, and I never quit work at night till after sunset. Wet or dry, there was always something to be done out of doors, and I never stopped for rain.

I was her only "hand" that season, and I had to plow, harrow and carry on her farm with no team except an old one-horned ox that I worked in a crooked yoke. She had a bear trap, and she expected me to catch a few bears by way of helping out the season's crops. When she thought the farm work was not going quite fast enough she would come out into the field to set me an example, for she was a strong, bony woman. The lectures she gave me at such times were sharp enough to make a boy's ears tingle.

I was out in what she called the "upper heater lot" harrowing for oats one forenoon when I heard the widow shouting to me in a high key.

"Here, you, Jess!" she vociferated; "come down to the barn this minute! Leave old Brown standin' right where he is and come quick!"

I obeyed, on the run, and found her near the great doors of the old barn with a hay fork in her hands. Her youngest child stood in the dooryard crying lustily, and I heard the two calves bawling inside the barn. The widow put the fork in my hands and opened the barn door a little.

"I want you to go in there and kill that critter that's tackling them calves!" said she.

"What is it?" said I.

"It's a lucivee," said she. "He crawled in under the sills, and he'll kill them calves." I peeped in and saw a queer sight. A male lynx nearly as large as a Newfoundland dog crouched in the empty hay bay before the two calves, as if he meant to spring at them, but had not quite worked his courage up to it. The calves kept penned there in the bay were bawling and bunting at the

lynx, though they were scared nearly to death. "I don't want to go in there," said I, alarmed.

"You go along in there and put the fork to him," said she.

"I don't believe anybody can kill him with a fork," I remonstrated. "It needs a gun."

"There ain't a gun 'round here," said she; "and while we were sendin' off for a gun he'd kill them calves. You are a smart young feller, ain't ye—afraid of a bob cat! You go in there and fork him before he tackles the calves!"

"I don't see's I've any call in there," said I, hanging back.

"Start!" said she, and grabbed me by the collar. "Do as I bid ye, or I'll turn ye off and tell everybody you're a coward!"

She pulled the door open a little farther, shoved me inside and put the hay fork in after me. But I had no stomach for fighting that lucivee.

"Mrs. Guthridge," said I, "you let me come out! I'm not going foul of that creature!"

"You kill that cat!" she screamed back to me through the door. "You sha'n't come out till you do. I'll keep you in there till you do kill him! Kill him now, I tell ye! Kill him!"

She was in such a passion that I was about as afraid of her as of the lynx; so I went slowly along the barn floor and struck the fork on the low boards that were nailed around the pit of the hay bay, hoping to frighten the animal. It turned its head, growling, and glared at me out of its great, round, silvery eyes. I knew that a lynx could jump fifteen feet, and that they were as quick as light in their movements.

"Put the fork to him!" the widow exhorted, holding the door open a crack's width. "Jump down there and pin him with the fork!"

When I picked up an old bucket that lay on the barn floor and threw it at the beast he jumped to the top of the barn sill on the back side of the hay bay, from that to a beam, and thence to a scaffold over the cat tie stanchions. It was a scaffold of poles, with a quantity of old pea-pods lying on them.

On the back side, in one corner, two old ox-sleds had been stored away, with a pung sleigh on top of them. The lucivee got in this dark corner behind the pung and the ox-sleds.

I tried to drive him out by throwing pieces of board and stones up there from the bottom of the hay bay. The lynx growled loudly at the noise I made, but he did not budge, and the widow got out of patience with me.

"Stop throwing stones," said she; "you'll split the pung." She then came into the barn and set a ladder up against the scaffold.

"Now you do as I bid ye," said she. "You take that fork and go up that ladder and drive him out."

"I don't like the job," said I.

"Easy to see that," said she, holding the ladder for me. "But you go up, whether you like it or not."

"Taint the kind of work I hired for," said I.

"Oh, go 'long!" said she. "Go right straight at him as if you meant to do something!"

There was no resisting her will, so I climbed up, approached the pung, and gave it a prod with the fork, hoping that the cat would run out on the bay side. But he didn't—he just crouched there in the dark, growling and spitting at me. Evidently he was not inclined to leave.

I then went around to the bay side and gave another prod, when the creature leaped out with a horrible snarl! I saw him coming and started to run back; but before I could take a step he landed on my shoulders!

Oh, how he scratched! As I threw up my hands to grab him he bit me clean through the left palm. I howled with the pain, but got hold of his legs and tore him off my back. He took the most of my woolen frock and shirt with him, and got so tangled in the shreds that he fell down among the pea-pods and rolled over, snarling frightfully.

My fighting blood had risen by this time. It was a case of kill or be killed. I lunged at him with the hay fork, buried both the tines in his body and tried to hold him; but

he twisted away and jumped at me again, hissing and snarling like a fury.

This time I caught him on the tines and threw him down again, but he twisted away and tried to get to me. Indeed, he came on again and again. I must have put the whole length of the fork tines into him a dozen times before I could hold him down. His snarls were fearful, and the air there was thick with his musky breath and dust from the pea-pods.

At length I held the lucivee down with the fork, and the widow, who had got a flail and come up the ladder to aid me, pounded the life out of the beast with the swingle.

My shoulders and back were bleeding profusely from a dozen scratches, some a foot long, and they were a long while getting well. My bitten left hand, too, was so sore for more than a fortnight that I could not use it to milk the cows, or work much, if any.

The widow expressed very little sympathy for me, but she was just enough to keep me on the place.

"If you had gone straight at him with the fork in the first place, as I told ye, and not so scary about it, he wouldn't have got to ye," said she.

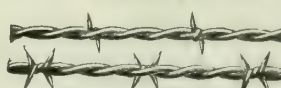
She may have been right. I think she was; but it was rather cold comfort for a boy who thought he had acted pretty bravely, in spite of being so scared.—G. B. S., in Youth's Companion

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PATRONS OF HUSBANDRY.

Random Thoughts.

By A. P. ROACHE, W. M. S. G. of California.

With truth for guide, and right for shield,
The farmer yet will gain the field.

The National Lecturer will be with us ere this week's RURAL reaches many of its readers. He is a stalwart farmer, granger, editor and citizen, brimful of practical thoughts and grange ideas, and will do his very best to assist in the good cause. Let all Patrons remember he is our guest as well as lecturer, and while he is earnestly striving to help us let us all show our good will by making his stay as pleasant as possible.

Just six days from Saturday the first Grange Congress ever held this side of the Rockies will be in session. This meeting of farmers from all parts of the world cannot but result in both pleasure and profit. Let us hope, good reader, that you will be present to assist in the work and participate in the enjoyment of that rare occasion.

Patrons, and all farmers, should not forget that the railroad companies are selling round-trip excursion tickets to the Fair at reduced rates. These tickets also entitle the holder to two admissions to the Fair, so the cost in attending the congress will not be great.

Don't forget the boys and girls when you attend the Grange Congress, but bring them along, even if it interferes with school work for two or three days. That can be made up, while the object lessons they will receive at the Fair will far more than compensate for all other losses.

Whenever any individual, class, creed, clan, clique or ism becomes so blind to facts as to think that all honor, virtue, truth and patriotism are dead and buried in the ashes of past centuries, if they will just stop long enough to con the pages of history they will soon see how far from truth is such opinion, and that the world is approaching perfection more rapidly than ever before.

Lay by the pruning-hook and shears,
The spray-pump and the barrow,
The gangplow, disk and cut-away,
And take a rest to-morrow.

Then don your best in thoughts and clothes;
Throw off your greatest care,
And take three good straight holidays
In visiting the Fair.

And, gazing at the many sights—
Things odd, and queer, and strange—
I pray, good friend, you'll not forget
The congress of the grange.

The National Lecturer will speak at Tulare on the 7th of April. Bro. Shoemaker, who, by the way, is no shoemaker at all, but an officer of the State Grange and one of the most progressive dairymen in the State, writes that he will do his best (and he is a rustler) to have a good meeting. Hurrah! the first gun for Tulare, then on to Selma and Merced, when, ho! for the congress; after which a grand forward movement will be made in all directions.

Sister and brother deputies and officers of the State Grange, now is the time to show your steel. Don't hold back because of the hard times. The harder the times the greater should be the effort. Let us all throw *can't* to the wind, and go in with a long pull, a strong pull, a pull all together, for the credit, the pride and the honor of our State, our progress and our order.

Notes From Lecturer Messer.

Why not try the farmers a little while as legislators?

Less of politics and more of common sense in legislation is the crying need of the hour.

The standard of the grange should be "way up." The best in kind and quality is none too good for farmers.

"Weighed in the balance and found wanting" is the verdict in regard to a large proportion of legislators at the present time.

If anyone who does not favor the grange will stop to think what it is doing in its educational work, he will at once be convinced that his antagonism or opposition is entirely unjustifiable.

Intelligence among the farming population always produces thrift, and thrift produces wealth. As a good grange always results in a greater degree of intelligence among its members, there ought to be no serious question as to whether the grange pays or not. There can be only one answer.

An average of 2400 subordinate grange meetings are held in New England every month in the year, and, in addition to these, 2000 Pomona grange meetings or grange

institutes are held every year. Twenty-four hundred subordinate grange meetings, 2000 Pomona meetings and six State Grange meetings, all in little New England. Is it any wonder that a high degree of general intelligence prevails among the farming population? And the grange has only just begun its work here.

The Secretary's Column.

This office acknowledges receipt of circular from the worthy lecturer of National Grange, who will meet with the Patrons of California on and after the 13th and 14th of April, 1894, and from his grange notes the following quotations are presented in full. Read them, and ask your neighbor who is not a member of the order to do the same; and, if he is eligible, why not ask him to send in his application to the nearest subordinate grange for consideration.

You might also inform those desiring further information, that any person engaged in agricultural pursuits, and having no interest in conflict with our purposes, of the age of 14 years, duly proposed, elected and complying with the rules and regulations of the order, is entitled to membership, and the benefits of degrees taken.

A good school teacher makes a good lecturer for the grange.

Some granges indulge in the old-fashioned lyceum debate occasionally with gratifying results.

When a farmer thinks he is independent of others he is fooling himself in regard to his own ignorance.

Every effort in the line of grange work should be with a thought to the future influence and standing of the order.

It makes the old veterans in grange work rejoice to witness the present popularity, prosperity and influence of the grange.

But few men who are not intimately connected with the grange can realize its power for good in farming communities.

The grange is developing some strong debaters among the younger members, who will some day be heard from in legislative halls. Young man, are you one of that number?

It is unquestionably true that nearly all farmers in communities where granges exist are more or less benefited by the grange, and it is their reasonable duty, to say the least, to give the organization their support.

By joining the grange the farmer is benefited by associating with those whose ideas may be in advance of his own, and he in turn becomes a benefactor to those who have not reached his own level. Step by step the grange develops the man and elevates his character.

A prominent grange worker in speaking upon the educational features of the order made the following remark: "Unconscious education comes through social contact, and the whole atmosphere of our being becomes stimulated, as by a positive force, unseen yet realized."

The grange has secured the enactment of many laws in State Legislatures and in Congress, and all have been in the interests of the people, which goes to show that a majority of the members of the grange are on the right side of public questions. It has done a good work thus far, and nobody denies it. Why not give it such support as will enable it to do much better work in the future?

Experience in all parts of the country has shown that the grange cannot be made a success upon a purely financial basis or with a political or financial scheme as an end, but, on the other hand, experience has shown that where the education and elevation of the farmers has been the end sought and these other agencies have been judiciously used as a means to that end, a large degree of success has been obtained.

Reports from Danville Grange are that they have lately admitted three sisters. Their meetings are regular, pleasant and interesting. Many of their members hope to attend the Grange Congress on the 13th and 14th of April.

A letter from Bro. W. M. Hilleary, secretary of Oregon State Grange, acknowledging receipt of invitation to be present and participate in the exercises of Grange Congress, just received, stating that he will publish the notice of our Congress in their official organ. Owing to pressing farm duties in the month of April the worthy secretary will not be able to attend.

Millville Grange reports three initiations during the last quarter. Enterprise Grange reports four.

(Continued on page 278.)

CUT OUT THIS
WORLD'S FAIR

Those of our readers who improved the opportunity of attending the
will always remember it as one of the
grandest privileges of their lives.

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The Court of Honor.
The Golden Statue of the Republic.
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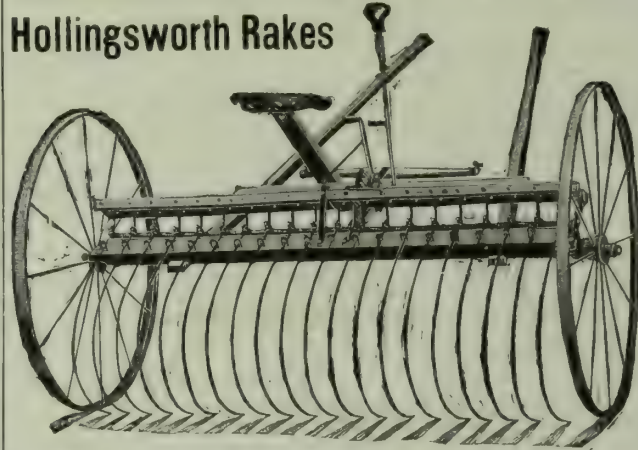
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It contains some things you ought to know. You ought to know that the World's Fair Management asked all manufacturers of Binders and Mowers to take their machines into the grain and grass fields, and by their work prove their claims. You ought to know that the manufacturers of McCormick Binders and Mowers promptly notified the World's Fair Committee that they would comply with this reasonable request. You ought to know that various other manufacturers of Binders and Mowers sent representatives to examine the grain and grass fields specified, and that these representatives reported to their respective companies that the condition of the crops to be cut was such that ordinary machines could not handle them. You ought to know that none of those manufacturers allowed their machines to go into these tests where they knew the McCormick Binders and Mowers would be at work. You ought to know that the World's Fair Judges said of McCormick Binders that they were simple and easily operated, and that their performance was in all respects thoroughly satisfactory. You ought to know that they said of McCormick Mowers that their draft is at least 20 lbs. lighter than the draft of ordinary mowers. You ought to know these things because you don't want to make a mistake when it comes to buying so important a farm implement as a Binder or a Mower. You want the best.

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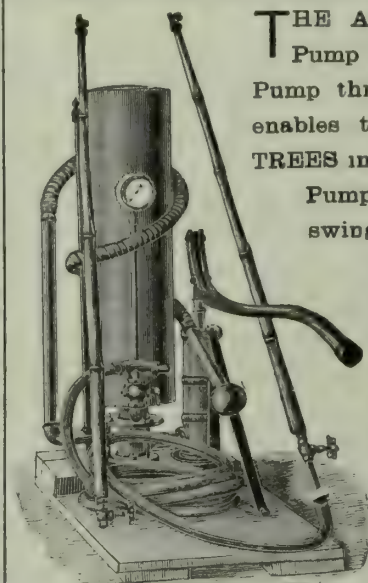
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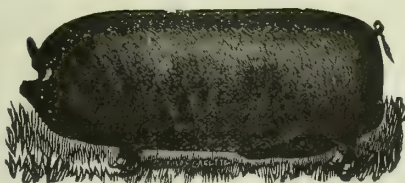
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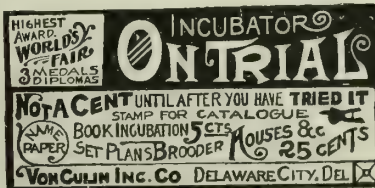
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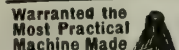
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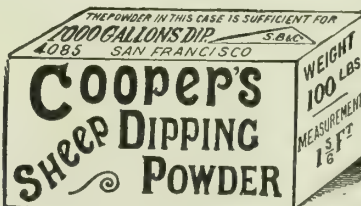


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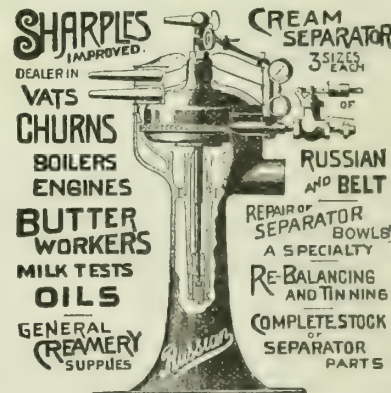
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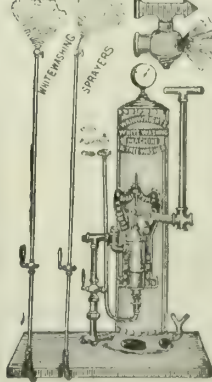
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AGRICULTURAL NOTES.

CALIFORNIA.

Colusa.

The County Horticultural Commissioner has just advised Colusa orchardists that the "San Jose scale" is moving; the peach moth has made its appearance and is working in the tender shoots, and the second brood will hatch in about two weeks and attack the young fruit. The codlin moth will commence its depredations in a few days, and all pear trees should be sprayed as soon as the fruit begins to lean on the stem."

El Dorado.

The orchardists of Placerville, Missouri Flat, Granite Hill, Diamond Springs and Cold Springs have voted to form a fruit exchange for the purpose of shipping their fruit directly East.

Fresno.

Republican: The farmers are looking anxiously at the skies these days and hoping for rain. According to some reports the situation in several localities is very bad, and if the much-needed downpour does not come in a few days the grain crops in those localities will be a total failure, it is said. F. M. Miller, manager of the Granger warehouse, when questioned by a *Republican* reporter, did not take so gloomy a view of the outlook by any means. He said: "A generous downpour just now would certainly do much good, but so far as I have been able to learn the grain is not suffering very much for lack of it, except in a locality or two. If we do not have rain soon, however, considerable damage will occur. The drying winds have done some damage to crops where the soil is light in the western and southern portions of the county, but I do not believe any damage at all has been sustained in the eastern portion. The crops on the extreme west side are a failure. The yield, with good weather, will be about like last year's. The barley crop will be less, as not so much of this grain has been sown on account of the low prices the past season or two. Wheat is a little higher than it was some time ago, but still very low in comparison to what it has been. The West Siders are very much discouraged with the drouth that has been prevailing there, which has destroyed the farmers' crops, and which is said to be the severest experienced there for years. Pasture along the foothills of the Coast range is also extremely scarce."

Kern.

Echo: Some Weed Patch alkali soil was sent to Prof. Hilgard of the State University recently for examination by him, and he writes that the deleterious substance is sulphate of soda, or Glauber salts, the least harmful of alkalis.

Los Angeles.

Pomona Progress: The abnormally cold nights last week reminded the old settlers here of the severe frost on the night of April 6, 1875, when they say there was a frost severe enough to kill the deciduous fruit blossoms and the young growth on grape vines. This is the only time known when the deciduous fruits of this region have suffered from frosts. The cold weather and even snows which visited the valleys of southern California on one cold winter about 20 years ago should dispel any impressions that the winter seasons are becoming cooler than they have been.

Los Angeles Times: The continued absence of rain has, of course, had unfavorable effect on the crops. The early-sown grain is looking fairly well, and is heading out in places, but the late-sown will probably be a failure unless good drenching rains fall within a short time. Irrigation has begun, which is about two months earlier than usually occurs. The deciduous fruit trees are blossoming freely, with prospects of a large yield, should no untoward circumstances prevent. In some sections, a few of the apricots and peaches have been injured, but it is generally agreed by all who are well-informed that there will be a very large crop of these fruits.

Mendocino.

On the Garsey and Adams ranch in Mendocino county, coyote traps are set with skunk meat, and there has been great slaughter. The "varmints" are attracted for miles around.

Monterey.

Jolon correspondent in the *Salinas Index*: The pigeons, which were here in such great numbers a few weeks ago, have left the valley for other parts; but another destroyer has made its appearance in some places. On the Freeman ranch, which is being farmed by Huston & Dodge, several bare spots were noticed of from half an acre to an acre, and on investigation the cause was soon discovered. That portion of the land was literally black with crickets. It is not a common thing here to have crops destroyed by grasshoppers or crickets, and it is hoped that the pests will not spread.

Orange.

Mr. Cayce of Anaheim has invented a machine for topping and digging beets and has applied for a patent. It is not altogether dissimilar from a mowing machine, minus the cutter, in appearance and the topper runs along in front, topping the beets, and immediately after comes a plow-shaped contrivance for digging them. Three horses will pull it easily in sandy soil. Mr. Cayce is at work on another contrivance whereby the beets, after being topped and dug, will be hoisted upon an endless reel and dumped into a wagon.

Orange county letter: For the past several weeks the people generally have been complaining of the continued dry weather, and the probability of the partial failure of a crop of hay and grain as a result thereof. In comparing the rainfall of the present season with that of the past several years it may be seen that there is nothing at which to become alarmed in this section of southern California. During the rainy season of 1891 and 1892 there were in this county but 6.28 inches of rain, and yet the year was considered a fairly prosperous one, not excepting the scarcity of hay and grain. In 1892 and 1893 there was a preponderance of moisture, 17.57 inches of rain falling during the season. As a result, hay was a drug on the market and went begging at from \$4 to \$6 per ton. This year, so far,

8.40 inches has fallen, and it has come so opportunely in most instances that it fully equals the usual fall of 12 inches. The probable cause of the present feeling of uneasiness among the farmers is the fact that the first rain of the season came very early, and as a result the season was a little premature. The crops forged ahead before their time, and now the absence of a few little showers at an opportune time is becoming very noticeable on the hay and grain crops. But there is yet time for an abundance of rainfall for all other purposes, and as this is a great citrus and deciduous fruit section, there is little cause for a feeling of uneasiness on this line among the farmers. Last year, after this date, there was 3.81 inches of moisture, 1.43 of this amount falling as late as the early part of the month of May; but, considering for a moment that there will not be any more this season, the county has already had 8.43 inches—2.12 more than during the season of 1891 and 1892, or what would ordinarily be an equivalent of 12 inches for the season. After all, there is really no cause for so much prating about the weather.

Santa Ana Blade: The orange crop of this county is mostly sold and at good prices. The crop is being handled by the Exchange, although it was purchased by the middlemen. Great care has been taken to see that no frozen oranges were shipped from Orange county; and as a matter of fact, hundreds of carloads of damaged fruit have been buried. This was the honest course to pursue, and it will pay in the long run. This is the first year that fruit has been sold at the East under an Orange county brand, and we are establishing a name for honest dealing. The establishment of a brand is one of the best things that the Exchange has done for the county. Hitherto all our oranges were sold under Riverside brands when they were good and under fanciful names when inferior. The careful selection insisted upon by the Exchange will have its effect.

Riverside.

Riverside Press: A slight advance has been made by the Fruit Exchange on all the grades of oranges. Orders are still coming in rapidly and the oranges going out as fast as they can be picked and packed. The average daily shipment is 20 carloads. To supply the orders there should be 30 carloads per day sent out.

Riverside Press: The Earl Fruit Company is shipping but one carload of oranges per day from Riverside. They seem to still be experiencing great difficulty in obtaining oranges, notwithstanding their offer of from ten to twenty cents per box higher than present f. o. b. prices. All the Exchange packing houses in Riverside are working to their utmost capacity, orders coming in very freely at present, and there is every indication of an advance in prices within the next few days. The Exchange reports over 50 f. o. b. orders on hand and unfilled at present.

San Bernardino.

San Bernardino letter to *Los Angeles Times*: Perry & Co. of Denver, commission merchants, are experimenting shipping oranges in bulk. A thick padding of hay is first placed in the bottom and along the sides of an ordinary refrigerator car. Oranges are then put in to a depth of two feet or more. Sections of slats are then placed across the car, covered with hay and oranges placed on top to about the same depth as the lower tier. Mr. Smith, who has charge of the shipping and who claims to have had twenty-five years' experience in shipping green fruits, has no doubts about the success of the experiment. Other shippers, who are accustomed to the old methods, think the fruit will be crushed and arrive in bad condition. The result will be awaited with much interest.

Redlands Facts: The matter of arranging for the proper handling of next year's orange crop should not be delayed too long. The experience of this year should prove to all growers that the Association plan is the best and fairest plan of handling the crop. It may be urged that one association cannot handle the increased crop of next year. Well, if one cannot, two can, and there need be no friction or enmity between them either. We hope the agitation of this matter will not be delayed too long, but that prompt steps will be taken for such cooperation as will shut out foreign dealers and keep the control of the fruit in the hands of the growers themselves.

San Bernardino letter to *L. A. Times*: W. H. Randall, vice-president of the Association and a member of the board of directors, has sold a part of his crop to Earl. While the board and members of the Association are unanimous in condemning Mr. Randall's course in the matter, some are inclined to condone the offense on account of the financial stress under which he is said to be laboring. Others think he should first have come to the Association with a plain statement of his actual requirements. If he failed to get assistance from his friends, it would then have been time to go over to the enemy. It is to be hoped the matter will be satisfactorily arranged and peace once more perch upon the Association banner.

San Diego.

The *Perris New Era* quotes Mr. H. K. Small as follows: "We will have rain before the week is out, and should we do so the San Jacinto, Perris and adjacent valleys will have a better grain prospect than they did at the same time last year, and that the grain now, pending rain, is better than a year ago. True, some early and some very late grain will have hard work to make more than hay, at most, but much of the grain is in a redeemable condition as yet."

San Diego letter: Mrs. Carrie Williams, who has devoted three years to experimenting in silk culture, with great success, has received from the head of the Carlson-Currier silk firm of San Francisco a letter pronouncing her silk equal to the finest silk of commerce. The possibility of producing commercial silk here is admitted by the firm, but the high cost of labor is believed to be the fatal obstacle in the way of a silk industry.

San Joaquin.

Stockton Mail: Some of the farmers are growing a little anxious over the prolonged "dry spell," as they call the fine spring weather of the past few weeks. Reports from various parts of the county show that the crops have not yet reached that stage which indicates that they are suffering for rain, but nevertheless they are not progressing as well as they

ought to. It will be remembered that just after the last threatening weather, when a little rain fell, a cold, dry north wind swept over this region. It lasted five or six days and dried up the surface of the earth. On the grain lands a crust was formed, and this crust, by pinching the young stalks, has retarded their growth. Still, this in itself does not amount to much, provided rain falls and destroys the crust in time to allow the crops to mature. Some farmers, who evidently have grown impatient in waiting for this to happen, are harrowing their lands. This is particularly the case in the vicinity of Ripon. Harrowing improves the grain in one way, for it makes it stool better, but it injures it in another respect by pulling up many of the stalks.

Stockton Mail: Dr. Armstrong, who is looking out for his brother's interests in the immense Hatch-Armstrong orchard of over a thousand acres in the northern part of the county, is in town to-day. In conversation with a *Mail* reporter he stated that the almond trees were now about to bud. "How many pounds of almonds do you expect to produce this year?" was asked. "Well, our trees are six years old, and a tree of that age ought to give twenty pounds of nuts. But, to make a safe estimate, let's say ten pounds to the tree. That makes 240,000 pounds for our 485 acres of almonds." "And how much is the wholesale price a pound?" "We usually get 15 cents, but this year it is only 12½ cents." "That makes \$42,500 for the lot." "Yes, and that's a low estimate." "How much will all the almond orchards in the Lodi region produce, your own included?" "About \$75,000 worth, to make a rough guess."

San Luis Obispo.

Creston letter 24th March: Of course every one must be aware of the fact that it is dry here. Grain looks very well, but rain is needed soon or some of our farmers will be almost ruined.

Santa Barbara.

Santa Barbara letter to *Los Angeles Times*: A gentleman in the northern portion of the county writes: "I thinking you might like to know the state of the crops this side of Santa Barbara, I drop you a line. From Los Olivos to San Luis the grass is further advanced than the grain. Beyond and around San Luis it looks fine. From Santa Margarita and around Paso Robles, and beyond southward for a distance of 40 miles, the pastures are burned up, and unless they get rain soon, they won't raise anything. From Salinas to Monterey they had all the rain required, and some of the fields are under water." Contrast this with a rancher's letter from Hueneme, dated March 22d: "This is the driest year since 1877, and so cold that barley suffers a great deal. A large portion of it is already lost, and if we haven't rain very soon we shall hardly be able to make any hay. We had for eight days a high wind from the northwest, which dried up everything. The bean land has still got a little moisture, but according to my idea not enough to make a crop." Mr. Lowden, who has just returned from Ojai, reports that the condition of the crops in the valley is no better than here. The prospects could scarcely be worse.

Santa Cruz.

Pajaronian: A meeting of orchardists and others interested in the establishment of a fruit cannery in this valley will be held in the City Hall on Saturday, April 7th. A large meeting is desired. There is a fair prospect for a cannery for this place.

Solano.

Vacaville Reporter: After a careful inquiry among the large growers of Vaca valley and Pleasant valley we learn that in nearly every case a large crop is expected, and that the present condition of the weather is very favorable for pushing the fruit forward. It is generally acknowledged, however, that the season will not be as early as in many instances, owing to the unusually damp weather in January and February, but if the present favorable weather continues a good portion of the time will be made up, and cherries and other early fruits will begin to leave here in a few weeks.

Sonoma.

Santa Rosa Republican: Several fruit-driers are to be erected in this locality for the coming season's fruit crop. If the drying rage continues, before long every orchardist will have a drier for his individual use.

Sutter.

Yuba City Farmer: The grain crop throughout this section looks very well, and while rain would be beneficial to late sown, there is no grain that is at all suffering from lack of moisture. The summer-fallowed wheat looks excellent, having a good stand and color. Perhaps the majority of the grain is backward to the extent that it is not tall or rank, but many claim that this is a good fault. The winter-sown wheat is coming on nicely, and barley that has only been in the ground a few weeks is growing rapidly.

Tulare.

Register: B. Schwartz gave us the following facts on the late frost: He said that he had been informed by a successful old Dutch fruit-grower of Santa Cruz that his secret of securing a good fruit crop every year was to watch the weather the night before, during and after the full of the moon in February, March and April. If there was a suspicion of frost he would smoke his orchard and thus save his crop. Mr. Schwartz has watched and followed the old Dutchman's teachings as far as he was able. He expected a frost on the 20th and he had his man prepare pieces of straw and coal tar along the windward side of the orchard and gave instructions to fire the piles toward morning, but—well, the piles are still there, and the fruit—well, it isn't there.

Porterville Enterprise: Frank Baker, the self-styled rain-maker, is working hard to cause four inches of rain to fall on R. Linder's 4000 acres of grain, in the Lindsay district, before the 1st of June. If he is successful he will be paid \$1000. We only hope Mr. Baker can cause rain to fall; it would be a blessing for Tulare county.

Lemoore Advance: The terrible sand storms of last Saturday and Monday have driven the hope out of the heart of every West Side grain-farmer. With the grain curling up like a worm on a hot stove and the sand sifting down a man's back as though driven by a sand-bellows in the hands of old Nick, the

average West Sider rises up to the occasion but faintly, and even his prayers are turned to curses as the wind howls around the creaking cabin.

Tulare Register: A gentleman who has just returned from a tour of the strip between the line of the Southern Pacific and the lake, brings with him a pretty blue account of prospects all the way from Tulare river to Delano. For several years the rainfall in all that portion of the valley has been so light that only partial crops have been harvested, and for this reason attention has been given to rearing cattle and horses; but now the drouth has been so great that there is little feed for the stock, and the problem of maintaining them is a most serious one. The owners have little or no money with which to buy feed, and the owners of feed are justified by the outlook in charging pretty stiff prices. It would seem as though some sort of an agreement ought to be reached whereby the stock could be kept through the season on shares. Beef cattle are a good price, but stock cattle are very low. Such dearth of feed has not been known in this valley for years, and those who can do so should prepare to raise summer crops of some sort. There will soon be plenty of water without doubt, and it is not too late to raise corn and sorghum in abundance.

Ventura.

Santa Paula note: M. Fagan, the well-known live stock man, residing near this place, has on his farm 150 cattle and nearly as many calves; also 20 horses. He says if it is a dry year his stock will have slim picking, but he is an old settler and expects rains in April. He says there has not been a dry year since 1887, or 17 years ago, and even in dry years fair crops of some things are raised.

Venturian: C. A. Barnes, who resides near the Thompson ranch, has been doing a little experimental work among his fruit trees, and he is of the opinion that he has hit upon a plan that will prove beneficial in counteracting the damaging effects of the dry weather upon bearing orchards. He has been making good use of his bean straw by packing it around the trees, which has proved effectual in the retention of the moisture of the soil. He reports his trees in excellent condition, and he is of the opinion that the practice of spreading bean straw thickly around the trees will hold the moisture sufficiently to insure a crop, even in a dry season.

Yolo.

Winters letter in *Yolo Mail*: With each succeeding year this section becomes more and more noted for the earliness and quality of its vegetables. The shipping of early vegetables to the city markets has now become an important and profitable industry. The gardeners are now hard at work getting their tomato plants and squashes into the ground, so they will be able to reap the harvest of high prices which always awaits the earliest vegetables.

A Davisville letter to the *Woodland Democrat* says that frost seems to have injured the apricot crop more than any other variety of fruit. By some it is estimated that there will not be more than half a crop in consequence. The almond crop does not appear to have suffered any damage.

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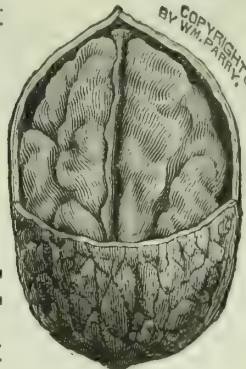
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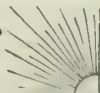
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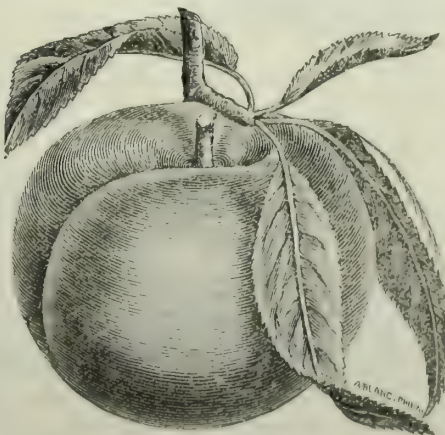
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AGENT FOR CALIFORNIA NURSERY CO.,

LARGE STOCK OF

FRUIT & ORNAMENTAL TREES
AT REDUCED RATES.

SEEDS.—Kentucky Blue Grass, Clover, Vegetable, Flower and Tree Seeds.—SEEDS.
PRICE CATALOGUE MAILED ON APPLICATION.

THOMAS MEHERIN, - - - 516 Battery Street, San Francisco.
P. O. Box 2050.

News in Brief.

—After nine weeks of boring the Healdsburg Trust Company has struck water at a depth of 280 feet.

—A company has been formed at Riverside to erect a 400-room hotel. The capital stock of the corporation is \$450,000. The building will cost \$200,000, and work will be commenced soon.

—Hon. W. J. Mills of Pocatello, Idaho, read a paper at a session of the State Irrigation Committee in which he stated that the government, by expending \$10,000,000 could reclaim Snake river valley lands and provide homes for 250,000 people.

—The rails of the Southern Pacific Coast line are now laid to near San Luis Obispo. In two weeks the bridge will be in place. Indications point to the continuance of the work south. Strangers are flocking to that section, spying out the country.

—For some months past a party of surveyors has been at work surveying the channel of the San Gabriel river, from its mouth at the ocean to the San Gabriel canyon. It is stated that the intention of the Board of Supervisors is to give employment to the idle men of the county at a nominal sum.

—The latest census bulletin gives the following figures for the year of 1890: True value of real and personal property in California, \$2,533,000,000; Washington, \$760,000,000; Oregon, \$590,000,000; Nevada, \$180,000,000; Arizona, \$188,000,000; New Mexico, \$231,000,000; Utah, \$349,000,000. New York leads with \$8,560,000,000. Wyoming is the poorest of the States, with \$169,000,000. The per capita of valuation for the entire country has increased from \$308 in 1850 to \$1039 in 1890. The per capita in California has increased from \$239 in 1850 to \$2097 in 1890. California had in 1890 52,894 farms, including lands both improved and unimproved, over 21,000,000 acres. California stood sixteenth in the number of horses owned, as well as in mules and asses. She stood twenty-sixth in the number of work oxen, seventeenth in milch cows, seventh in other cattle, twenty-second in swine, third in the number of sheep, including spring lambs, and second in pounds of wool produced in 1890. Ohio headed the list with nearly 21,000,000 pounds, California shearing over 16,000,000. California headed the list of barley producers with 17,500,000 bushels. She was second in wheat, with 40,000,000 bushels, Minnesota leading with 52,000,000. California was third in hops, with 6,500,000 pounds, Washington producing 8,000,000 and New York 20,000,000. California was second in bean raising, having 700,000 bushels, against New York with 1,100,000.

Soap Suds for Calming Waves.

The remarkable action of oil upon waves is well known, says *Nature*. This phenomena led the officers of the steamship Scandia, of Hamburg, to make an experiment upon the same principle that was very successful and that appears to us worthy of mention. During its last trip to the United States the vessel, while in midocean, was attacked by a very heavy storm. It then occurred to the officers to dissolve a large quantity of soap in tubs of water. Having thus obtained several hundred gallons of soap suds in a very short time, they threw it overboard in front of the ship. The effect was almost instantaneous, and the vessel soon began to navigate without difficulty. Her officers at once addressed a long report to the Hydrographic Bureau of the United States, giving an account of their voyage, the storm, and the means that they employed to still the waves. They conclude by saying that, although soap suds do no produce absolutely all the effects upon water that oil does, it at least suffices to break the force of waves in most cases. Besides, this method recommends itself to transportation companies careful of their interests. Soap suds is much cheaper than oil, and a relatively large quantity of soap can be carried without encroaching too much upon the space set apart for passengers and merchandise.

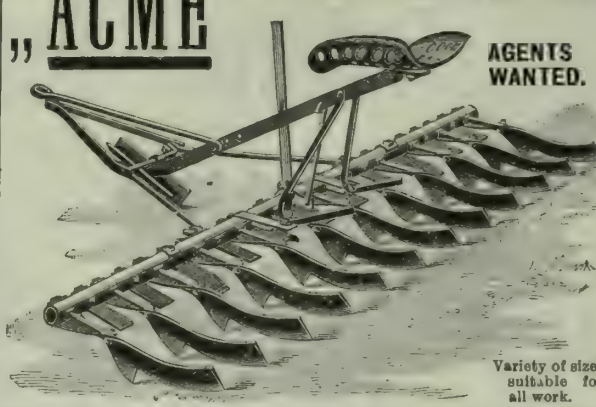
How's This!

We offer One Hundred Dollars Reward for any case of Catarrh that cannot be cured by Hall's Catarrh Cure.

F. J. CHENEY & CO., Props., Toledo, O. We the undersigned have known F. J. Cheney for the last 15 years, and believe him perfectly honorable in all business transactions and financially able to carry out any obligation made by their firm. WEST & TRUAX, Wholesale Druggists, Toledo, O. WALKING, KINNAN & MARVIN, Wholesale Druggists, Toledo, O.

Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Price, 75c. per bottle. Sold by all Druggists. Testimonials free.

"ACME" PULVERIZING HARROW, CLOD CRUSHER AND LEVELER



AGENTS WANTED.

Is adapted to all soils and all work for which a Harrow is needed.

Flat crushing spurs pulverize lumps, level and smooth the ground, while at the same time curved coulters cultivate, cut, lift and turn the entire surface of the soil. The backward slant of the coulters prevents tearing up rubbish and reduces the draft.

Made entirely of cast steel and wrought iron and therefore practically indestructible.

CHEAPEST RIDING HARROW ON EARTH—sells for about the same as an ordinary drag.

I deliver free on board at SAN FRANCISCO and PORTLAND.

Address DUANE H. NASH, Sole Mfr., Millington, New Jersey.



CHAMPION SPRAY PUMP.

As will be seen from the illustration, the pump is very compact and strong. It is perfectly double-acting and has a brass-lined cylinder. The motion of the piston is horizontal. The handle is so arranged that the leverage is very powerful, and the movement is easy and natural. The air chamber is unusually large, admitting of the continuous and even discharge necessary for good and thorough spraying. The valves are metal and have metal seats. They all lie directly beneath the air chamber and are readily exposed on loosening four bolts, and without touching the cylinder. The pump has a double suction and a double discharge, one each on either side. The cut above shows the pump in operation with four lines of discharge hose. It can be readily arranged for a less number if desired. With this pump one can easily keep four men busy spraying, as well as attend to the team and the stirring of the liquid. These pumps are superior to any others made. Send for catalogue, mailed free.

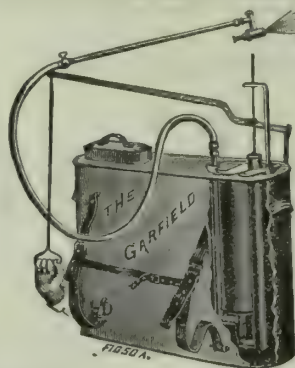


EUREKA SPRAY PUMP.

We have had this pump constructed especially for the purpose intended. It has great strength, and is simple in its construction. There is nothing to get out of order. It is so arranged that it can be set on the top of an ordinary barrel. With the large air chamber, you are capable of throwing a very fine and regular spray. The top or handle of the pump can be revolved to any position, to meet the requirements of the operator. It is operated very easily, and is not laborious to the party using the pump. The valves are very accessible. In fact there is no cheaper or better pump made than the Eureka. The annexed cut is a true illustration of the pump. Send for special catalogue and prices, mailed free. We carry a full line of all kinds of SPRAY NOZZLES, HOSE, etc.

WOODIN & LITTLE,

312 & 314 Market Street, San Francisco, Cal.



SPRAYING PUMPS.

Ours always the best—We lead others follow—Our Double Empire Barrel Pump has brass cylinder, plunger and rod, brass valve seat, and brass spout. Our

GARFIELD KNAPSACK

is made of heavy sheet copper, concaved to fit the back, with metal valves, and furnished with the latest improved Vermorel Nozzle. The very best Knapsack Sprayer on the market. Our Little Gem pail pump is all brass with metal valves, heavy hose and the improved Vermorel Nozzle. Special prices to offset high transportation rates. Catalogue free.

FIELD FORCE PUMP CO.,

141 BRISTOL AVE., LOCKPORT, N. Y.

PROTECT YOUR TREES

—WITH—



Gilman's Patent Tule Tree Protector.

PATENTED AUG. 1, 1893.

Cheapest, Best and Only One to Protect Trees and Vines from Frost, Sunburn, Rabbits, Squirrels, Borers and other Tree Pests. For Testimonials from Parties who are using them send for Descriptive Circulars.

B. F. GILMAN,

Sole Manufacturer of Patent Tule Covers,
420 NINTH ST., SAN FRANCISCO, CAL.

FRANCIS SMITH & CO.,

MANUFACTURER OF

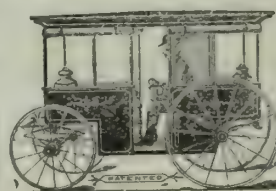
SHEET IRON & STEEL PIPE

FOR TOWN WATER WORKS.

Hydraulic, Irrigation and Power Plants, Well Pipe, Etc., all sizes.

NO. 180 BEALE STREET, SAN FRANCISCO, CAL.

Iron cut, punched and formed, for making pipe on ground where required. All kinds of Tools supplied for making Pipe. Estimates given when required. Are prepared for coating all sizes of Pipes with a composition of Coal Tar and Asphaltum.



MILK MEN

Who ride in those famous

"LOW-DOWN" WAGONS

are protected from the storm. They never have lame backs. They never slip or fall getting in and out. Their milk is not churned. THEY LIVE LONG AND THEY PROSPER. You can get full particulars by writing the PARSONS "LOW-DOWN" WAGON CO., Earlville, N. Y.

GRANGERS' BANK

OF CALIFORNIA.

SAN FRANCISCO, CAL.

INCORPORATED.....APRIL, 1874.



Capital paid up.....\$1,000,000
Reserve Fund and Undivided Profits, 130,000
Dividends paid to Stockholders.... 833,000

OFFICERS.

A. D. LOGAN.....President
I. O. STEELE.....Vice-President
ALBERT MONTELLIER.....Cashier and Manager
FRANK McMULLEN.....Secretary

General Banking. Deposits received, Gold and Silver.
Bills of Exchange bought and sold.
Loans on wheat and country produce a specialty.
January 1, 1894. A. MONTELLIER, Manager.

Deep Well Pumps.



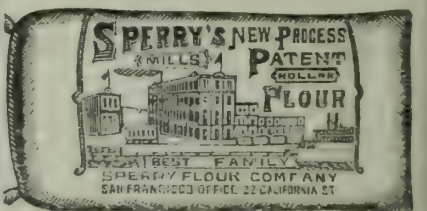
The valves and working parts of the Fulton Pump can be removed, repaired and replaced without taking the pump out of the well.

Pumps fitted up for all depths of wells, ready to put in.

Send for illustrated circulars and price list to

A. T. Ames,
GALT, CAL.

Manufacturer of Pumps and Windmills.



School of Practical, Civil, Mechanical, Electrical and Mining Engineering,

Surveying, Architecture, Drawing and Assaying,
728 MARKET ST., SAN FRANCISCO, CAL.
Open All Year.

A. VAN DER NAILLEN, President.

Assaying of Ores, \$35; Bullion and Chlorination Assay, \$25; Blowpipe Assay, \$10. Full course of assaying, \$60. ESTABLISHED 1864. Send for circular.

TREE WASH.
OLIVE DIP.

"Greenbank" Powdered Caustic Soda and Pure Potash.

T. W. JACKSON & CO.,

Sole Agents,

No. 5 Market Street, San Francisco, Cal.

S. F. MARKET REPORT

Market Review.

SAN FRANCISCO, April 4, 1894.

Convulsions in the Call Boards here and elsewhere during the past two weeks have not resulted in any substantial advantage to persons having wheat to sell. But while prices have only advanced a shade, there is a better tone to the market, for it is the almost universal judgment that a rise later in the season is inevitable. The statistical situation—that is, the relative statistics of supply and demand, upon which estimates are made ordinarily—is prophetic of an advance, and at any other time it would dominate prices; but in this uncertain year the evidence of figures is doubted. Even the oldest dealers, when they talk confidentially, admit that they are unable to tell anything about the prospects. For export purposes, the quotable range for good to choice shipping Wheat is 92½@95c per cwt. Lots of 100 tons and upward can be sold to better advantage for Call Board uses if the quality will pass inspection. Milling Wheat sells at a range of 97½c@1.05 per cental.

Barley.

Dry weather is the prevailing factor just now. Rain is wanted in more than one section, and much depends upon the atmospheric conditions for the next week or ten days. A downpour that would be heavy and general would change matters materially. Under existing affairs the market shows strong upward tendency. The inquiry is not at all pressing. We quote: Feed, 85c per cwt for fair to good quality and 86½@87½c for choice bright; Brewing, 90@95c per cwt.

Dried Fruits.

Stocks are limited and prices have steady tone in consequence. Prospects for the new crop are reported to be encouraging. Thomas' Produce Report says: "From reports received within the past few days, covering the principal fruit-growing counties, the same general answers reach us. The trees are looking fine, fruit buds plentiful, soil in good condition and but nominal damage made by frosts." Opposite reports come from the Eastern States, where frosts and blizzards are said to have much damaged the fruit crop. A better demand is therefore expected for California goods. We quote as follows: Apples, 5½@6c per lb for quartered, 5½@6c for sliced, and 9@10c for evaporated; Pears, 5@8c per lb for bleached halves, and 2@4c for quarters; bleached Peaches, 7@9c; sun-dried Peaches, 5@6c; Apricots, Moorpark, 11½@12½c; do Royals, 10@12c for bleached and 6@7c for sun-dried; Prunes, 4@4½c per lb for the four sizes, 4½@5c for the five sizes, and 2½@3½c for small; Plums, 4@4½c for pitted and 1½ to 2c for unpitted; Figs, 3 to 4c for pressed and 1½ to 2c for unpressed; White Nectarines, —c; Red Nectarines, —c per lb.

RAISINS—Prices keep low, with light demand. London Layers, 75c to 1.15; loose Muscatis, in boxes, 50@75c; clusters, 1.25 to 1.50; loose Muscatis, in sacks, 2½ to 2½c per pound for 3 crown, and 2c for 2 crown; Dried Grapes, 1½ to 1½c per pound.

General Produce Market.

OATS—The general situation is considered encouraging for the selling interest. There is steady lowering of stocks and dealers are looking for better prices in the near future. Business is of fair volume and it is expected to increase rather than diminish. We quote as follows: Milling, 1.00@1.10; Surprise, 1.17½@1.25; fancy feed, 1.12½@1.15; good to choice, 1.02½@1.10; poor to fair, 80@95c; Black, 90c@1.20; Red, 1.00@1.10; Gray, 95c@1.05 per cwt.

CORN—Stocks are well cleaned up and prices have buoyant tone. A lot of 8500 sacks went to Central America. Quotable at 1.15 per cwt. for Large Yellow, 1.15 for Small Yellow and 1.37½ for White.

CRACKED CORN—Quotable at 25.00@26.00 per ton.

CORNMEAL—Millers quote feed at 24.50@25.50 per ton; fine kinds for the table, in large and small packages, 2½@3½c per pound.

OILCAKE MEAL—Quotable at 37.50 per ton from the mill.

SEEDS—Mustard and Alfalfa both show firmness in price, though no liberal trading is in progress. We quote: Mustard, brown, 22@25; Yellow, 22.75@23; Trieste, 22.50@24.75; Canary, imported, 44@45; do, California, —; Hemp, 3½@4½c per lb; Rape, 1½@2½c; Timothy, 6½c per lb; Alfalfa, 10@11c; Flax, 53@3.25 per cwt.

MIDDLINGS—Supplies are ample. Quotable at 16@18 per ton.

MILLSTUFFS—We quote: Rye Flour, 3½c; Rye Meal, 3c; Graham Flour, 3c; Oatmeal, 4½c; Oat Groats, 5c; Cracked Wheat, 3½c; Buckwheat Flour, 5@5½c; Pearl Barley, 4@4½c per lb; Normal Nutrient, 33c per case of 1 dozen cans; Breakfast Delight, 33c per case of a dozen packages.

BRAN—Quotable at 13.50@14.50 per ton.

HAY—Twice have quotations been advanced within a couple of days. Prices are 1½ per ton higher than they were a week ago. Wire-bound hay sell at 1½ per ton less than rope-bound hay. Following are wholesale city prices for rope-bound hay: Wheat, 10½@14½; Wheat and Oat, 10½@14; Wild Oat, 10@13; Alfalfa, 9@11½; Barley, 10@12; Compressed, 9½@13; Stock, 8@9 per ton.

STRAW—Scarce and firm. Quotable at 75@85c per bale.

HOPS—The inquiry is nominal. Quotable at 14@16c per lb.

RYE—Is firmly held. Quotable at 1.02½ per cwt.

BUCKWHEAT—In small supply. Quotable at 1.20@1.25 per cwt.

GROUND BARLEY—Quotable at 18.50@19.50 per ton.

POTATOES—The market is more than comfortably stocked with the several varieties. Trade is good but prices favor consumers. We quote as follows: New Potatoes, 1½ to 2½c per lb; Sweets, 1.50@1.50 per cwt; Early Rose, 30@40c; River Burbanks, 25@40c; River Red, 20@30c;

Oregon Burbanks, 50@85c; Oregon Garnet Chiles, 65@80c per cwt.

ONIONS—Good stock is quotable at a range of 22@25c per cwt. Poor qualities sell at irregular figures.

DRIED PEAS—We quote: Green, 1.25; Blackeye, 1.60@1.65; Niles, 1.50@1.75 per cwt.

BEANS—It is a holding market just now. Nobody is anxious to sell except at fancy figures. There is no increase in the ordinary demand, but the want of rain in growing sections tends to develop a speculative movement, and this circumstance causes advanced asking rates. We quote as follows: Bayos, 22@25; Butter, 1.75@1.90 for small and 22@2.20 for large; Pink, 1.70@1.80; Red, —; Lima, 2.75@3; Pea, 2.50@2.75; Small White, 2.20@2.60; Large White, 2.25@2.30 per cwt.

VEGETABLES—Supplies are on the increase, while prices shape correspondingly in favor of the consuming interest. Receipts of Asparagus yesterday were 899 boxes. Prices were more or less unsettled and irregular, owing to the large quantity offered. One or two special brands sold in a small way above quotations, but the more general range is presented in the figures below. Rhubarb is weak at lower figures, the arrivals yesterday footing up 389 boxes. Green Peas are getting down to prices that will soon necessitate sales being made by the sack. Receipts yesterday morning were 240 sacks, more being expected before the close of the day. Cucumbers move off slowly. The String Beans sent up from Los Angeles are too poor to attract custom. Two small lots have been on the market for several days without finding sale. We quote consignments as follows: Cucumbers, 40@50c per dozen for common and 75c@1.25 for good to choice; Asparagus, 75c@1.25 per box for the ordinary run and 1.50@1.75 per box for choicer quality; Rhubarb, 35@85c per box; Green Peas, common, 22@2½c per lb; Sweet do, 3@4c; String Beans, — per lb; Marrowfat Squash, — per ton; Hubbard Squash, 10@15 per ton; Green Peppers, 30c per lb; Tomatoes, 10@15 per box for poor to fair and 1.75@2.25 for good to choice; Turnips, 75c per cwt; Beets, 75c per sack; Parsnips, 1.25 per cwt; Carrots, 35@40c; Cabbage, 35@40c; Garlic, 1½@2½c per lb; Cauliflower, 60@70c per dozen; Dry Peppers, 15c per lb; Dry Okra, — per lb.

FRESH FRUIT—Choice Apples are not plentiful, but there is enough stock to meet present wants. For poor goods it is not easy to find custom. We quote as follows: Apples, 50@75c per box for common 85c@1.25 for fair to good, and 1.50@1.75 for choice.

BERRIES—The Strawberry season has opened. Consignments have been received from Santa Cruz, Mountain View and Palo Alto, selling at 50@75c per basket.

CITRUS FRUIT—The market is not overburdened with choice Oranges, and such product finds steady demand at full rates. We quote jobbing lots as follows: Fair to choice Navel Oranges, 1.50@2.35 per box; Seedlings, 1.00@1.75; Mexican Limes, 3.50@4 per box; California Limes, 50@60c for small box and 75c@1 for large; Lemons, Sicily, 44@5; California Lemons, 75c@1 for common and 1.25@2 for good to choice; Bananas, 1.50@2.50 per bunch; Hawaiian Pineapples, 2.50@3; Mexican Pineapples, 3@3.50 per dozen.

NUTS—Trade is of jobbing character. We quote as follows: Chestnuts, 6@8c per lb; Walnuts, 6@7½c for hard shell, 8@9c for soft shell and 8@9c for paper shell; Chile Walnuts, —c; California Almonds, 10@11c for soft shell, 6@7c for hard shell and 11½@12½c for paper shell; Peanuts, 3@4c; Hickory Nuts, 5@6c; Filberts, 10@10½c; Pecans, 5@8c for rough and 8@10c for polished; Brazil Nuts, 10@11c; Coconuts, 55@55.50 per 100.

HONEY—Transactions are limited. No change in prices. We quote: Comb, 10@11c per lb for bright and 8@9c for dark to light amber; water white extracted, 4½@5c; amber extracted, 4½c; dark, 4½c per lb.

BEESWAX—Quotable at 26@28c per lb.

BUTTER—The market is still liberally supplied. Green feed, however, is getting poor in some localities and receipts are more mixed as to quality. Still, no advance is expected at present, even if the output of fancy grades should not continue large. We quote: Fancy Creamery, 18@19c; fancy dairy, 16½@17c; good to choice, 15@16c; common grades, 14@14½c per lb; store lots, 12@13c per lb.

CHEESE—Is cheaper under increasing supplies. We quote: Choice to fancy, 9@10c; fair to good, 8@8½c; Eastern, ordinary to fine, 13@14½c per lb.

EGGS—Trade is slow, while supplies are free, causing soft tone to prices. We quote: California ranch, 12@15c; store lots, 11@12½c per dozen.

POULTRY—Eastern consignments are again coming forward. Two carloads have arrived already this week. We quote as follows: Live Turkeys—Gobblers, 10c; Hens, 12@13c; dressed Turkeys, 10@12c per lb for Gobblers and 13@14c for Hens; Roosters, 14@4.50 for old and 16.50@17.50 for young; Broilers, 14@5.50; Hens, 15@16; Ducks, 14.50@16; Geese, 11.50@12 per pair; Pigeons, 22@25 per dozen.

GAME—Comes in poor order and is not worth quoting.

PROVISIONS—There is easy tone to prices, as stocks of all kinds are in good supply. Eastern Sugar-cured Hams, 12c; California do, 10@11c; Bacon, Eastern, extra light, 12c; medium, 9½c; do, light, 10c; do, light, boneless, 11½c; light, medium, boneless, 10½c; extra light, sugar-cured, 13½c; Pork, prime mess, 14@15; do, mess, 17@18; do, clear, 19.50; do, family, 22 per bbl; Pigs' Feet, 11.50 per bbl; Beef, mess, bbls, 7.50@8; do extra mess, 11@11.50 per bbl; do, smoked, 10c; Eastern lard, tierces, 7½@7¾c; do prime steam, 9½c; Eastern pure, 10-lb pails, 10c; 5-lb pails, 10½c; 3-lb pails, 10½c; California, 10-lb tins, 9c; do, 5-lb, 9½c; do, kegs, 10c; do, 20-lb buckets, 9½c; compound, 7c for tierces.

WOOL—No sales of consequence to report. The weekly report of Thos. Denigan, Son & Co. says: "Trade is provokingly dull for the opening up of a new season. Shippers who forward early Wool's will be disappointed if they expect early sales, for the reason that buyers are so few that it will be difficult to sell freely, and more especially will it prove hard work to get rid of the dirty and defective burry Wools, as they are not wanted for the time being." We quote spring: Year's fleece, per lb, 6@7c; Six to eight months, San

Joaquin, 7@10c; Oregon and Washington: Heavy and dirty, 6@7c; good to choice, 8@10c; valley, 10@13. We quote fall: Northern defective, 5@6c; Southern and San Joaquin, 3@4c.

HIDES AND SKINS—Quotable as follows:

Sound.	Culls.
Heavy Steers, 54 lbs up, 10 lbs 4½@5c	3½@4c
Medium Steers, 48 to 56 lbs 4@5c	3@4c
Light, 42 to 47 lbs 3½@3¾c	2½@2¾c
Cows, over 50 lbs 3½@3¾c	3@4c
Light Cows, 30 to 50 lbs 3½@3¾c	2½@3c
Stags 3@4c	2@3c
Kips, 17 to 30 lbs 4@5c	3@4c
Veal Skins, 10 to 17 lbs 5@6c	4@5c
Calf Skins, 5 to 10 lbs 7@8c	6@7c
Dry Hides, usual selection, 7c	
7c; Calf Skins, do, 7c; Cull Hides, Kip and Calf, 4c; Pelts, Shearling, 10@20c each; do, short, 25@35c each; do, medium, 40@50c each; do, long wool, 50@75c each; Deer Skins, summer, 25c; do, good medium, 15@20c; do, winter, 5c per lb; Goat Skins, 25@40c apiece for prime to perfect, 10@20c for damaged, and 5@10c each for Kids.	

TALLOW—We quote: Refined, 5½@5¾c; ren-

dered, 4½@4¾c; country Tallow, 4@4½c; Grease, 3@4c per lb.

San Francisco Meat Market.

Beef of good quality is steady. Veal and Mutton are both plentiful, Spring Lamb is a shade cheaper. Following are the rates for whole carcasses from slaughterers to dealers:

BEEF—First quality, 5½c; second quality, 4½@5c; third quality, 3½@4½c per lb.

CALVES—Quotable at 4@5c for large, and 5@7c per lb for small.

MUTTON—Quotable at 5½@6½c per lb.

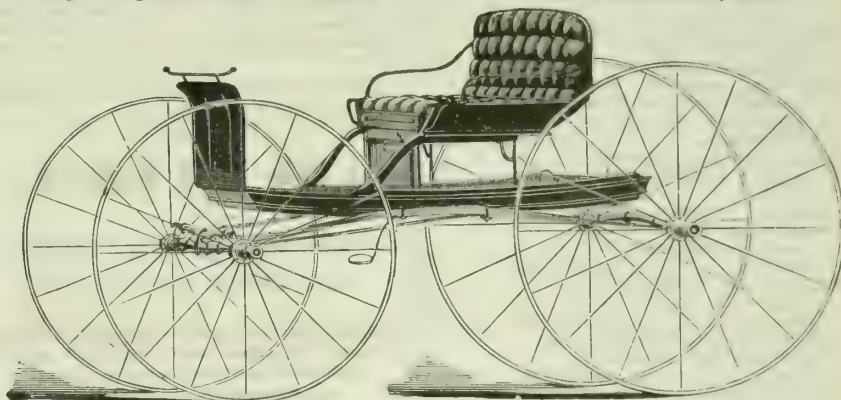
LAMB—Spring, 10@12½c per lb.

PORK—Live Hogs, on foot, grain fed, heavy and medium, 4½c; small Hogs, 5½c; stock Hogs, 4½c; dressed Hogs, 7@7½c per lb.

PACIFIC RURAL PRESS!
Is the Largest Illustrated and Leading Agricultural and Horticultural Weekly of the West. Established 1870. Trial Subscriptions, 50c for 12 weeks, or \$2.40 a year (till further notice). DEWEY PUBLISHING CO., 220 Market Street, San Francisco.

CALIFORNIA WAGON & CARRIAGE CO.

36½ to 44½ FREMONT STREET.....SAN FRANCISCO, CAL.

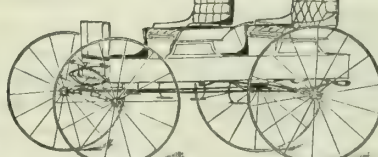


No. 31.—1-inch steel axle, leather trimmed. Price \$60.

HARNESS...\$7. BUGGIES...\$75. SURREYS...\$130.



No. 129.—Price \$65.



No. 600.—1½ axle, 1½ wheel. Price \$65.



No. 81.—Price \$100.



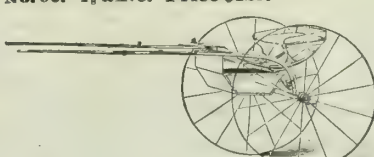
No. 90.—1½ axle. Price \$125.

WRITE FOR CATALOGUE.

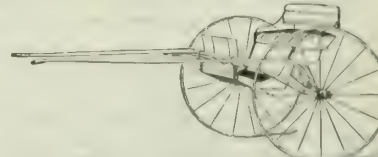
GOODS SHIPPED EVERYWHERE.



No. 58.—Price \$80.



No. 1.—1-inch axle. Price \$19.



No. 19a.—1-inch axle. Price \$25.

CALIFORNIA WAGON & CARRIAGE CO.

36½ to 44½ FREMONT STREET.....SAN FRANCISCO, CAL.

GRANGERS' BUSINESS ASSOCIATION, GENERAL COMMISSION HOUSE.

OFFICE, 108 DAVIS STREET, SAN FRANCISCO, CAL.

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CONSIGNMENTS OF GRAIN, WOOL AND ALL KINDS OF PRODUCE SOLICITED.

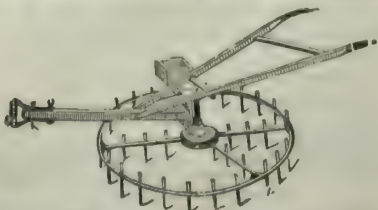
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The Secretary's Column.

Continued from page 272

PROGRAMME FOR THE CAMPAIGN OF 1894.

The following programme has been arranged by the Executive Committee of the California State Grange. Bro. Roache, Worthy Master of the California State Grange, and Bro. Messer, Worthy Lecturer of the National Grange, will address the members of the order and citizens at the places herein named:

Tulare.....	Saturday,	April 7
Selma, Fresno Co.....	Monday,	" 9
Merced, Merced Co.....	Tuesday,	" 10
San Francisco (Arrive).....	Wednesday,	" 11
" Congress.....	Friday,	" 13
".....	Saturday,	" 14
Eden and Temescal—Alameda Co. (Address at Haywards).....	Monday,	" 16
Pescadero.....	Wednesday,	" 18
Watsonville.....	Friday,	" 20
San Jose.....	Saturday,	" 21
Alhambra, Danville and Valley—Contra Costa Co. (Address at Danville).....	Monday,	" 23
West San Joaquin (Address at Tracy).....	Tuesday,	" 24
Stockton, Waterloo and Washington—San Joaquin Co. (Address at Stockton).....	Wednesday,	" 25
Santa Rosa, Sebastopol, Bennett Valley and Glen Ellen—Sonoma Co. (Address at Santa Rosa).....	Thursday,	" 26
Petaluma and Two Rock—Sonoma Co. (Address at Petaluma).....	Friday,	" 27
Sacramento, American River and Enterprise—Sacramento Co. (Address at Sacramento).....	Saturday,	" 28
Elk Grove and Florin—Sacramento Co. (Address at Florin).....	Monday,	" 30
Lodi, Woodbridge, New Hope and Lockeford—Address at Lodi.....	Tuesday,	May 1
Roseville—Placer Co.....	Wednesday,	" 2
Wheatland—Yuba Co.....	Thursday,	" 3
Grimes and Antelope.....	Friday,	" 4
North Butte, March, South Sutter and Yuba City—Address at Yuba City.....	Saturday,	" 5

By order of the Executive Committee.
DON MILLS, Secretary.

The following granges report for duty on reception committee:

Enterprise—Bro. Thomas Wait and Sister Polly Birch.

New Hope—Bro. and Sister W. E. Journey.

Lodi—Bro. and Sister J. D. Huffman.

Grimes—Bro. and Sister W. W. Kilgore.

Selma—Bro. and Sister Paris Allen.

Secretaries will please take notice to forward their reports for March quarter as soon as possible, so that I can make out my quarterly report to the National Grange. Up to date but few granges have reported.

Sacramento Grange reports an address and two musical selections for the Grange Congress.

The attention of secretaries of subordinate granges is called to page 16, article 8, section 2 of the Digest; also page 66, section 5, paragraph 6. If they will carefully make out their reports according to the law as it appears on the pages quoted above, they will save much work at this end of the line.

The following granges have reported for the quarter ending March 31st: Valley, Two Rock, Sacramento, San Antonio, Santa Rosa, New Hope, Enterprise, San Jose, Carpinteria, Stockton and Lockeford.

This office is advised by a notice in the Tulare Daily Register that the worthy lecturer of the National Grange, Bro. Alpha Messer, will meet with Tulare Grange on April 7th, and that the local grange at that place is making arrangements for a large meeting. This office has not been notified of the above meeting officially.

Address all communications for California State Grange to DON MILLS, Sec'y, Santa Rosa, Cal.

The Grange Congress.

The Executive Committee of the State Grange announces the following programme for the Grange Congress to be held at the Midwinter Fair in this city April 13th and 14th:

FRIDAY, 2 P. M., APRIL 13, 1894.	
1—Opening Chorus.....	Choir
2—Prayer.....	A. T. Perkins, Temescal
3—Instrumental Music.....	
4—Address of Welcome.....	Hon. M. H. De Young
5—Response.....	Master California State Grange A. P. Roache.
6—Song.....	Grange Choir
7—Address.....	Lecturer of National Grange Hon. Alpha Messer.
8—Recitation.....	Watsonville Grange
9—Grange Chorus.....	
10—Extra.....	
7:30 P. M., FRIDAY, APRIL 13, 1894.	
1—Grange Chorus.....	

2—Address.....	"Women as Horticulturists," Mrs. E. L. Watson.
3—Solo.....	Sacramento Grange
4—"Progress and Future of the Dairy Interest,"	E. W. Steele, San Luis Obispo.
5—Paper.....	B. F. Walton, Yuba City, President State Fruit Exchange.
6—Instrumental Music.....	Stockton Grange
7—"Education in Its Relation to Agriculture,"	Frank S. Chapin, Tulare Grange.
8—Music.....	
9—Extra.....	

2 P. M., SATURDAY, APRIL 14, 1894.

1—Grange Chorus.....	
2—"Agriculture in Relation to National Progress,"	Hon. E. W. Davis.
3—Quartette.....	Stockton Grange
4—"Horticulture in Its Relation to California Agriculture,"	Hon. N. P. Chipman
5—Vocal Solo with piano and flute.....	San Jose Grange
6—Extra.....	
7:30 P. M., SATURDAY, APRIL 14, 1894.	
1—Grange Chorus.....	
2—Address.....	State Lecturer S. S. Goodenough, Temescal.
3—Song.....	Eden Grange
4—Essay.....	Mrs. R. Taylor, Pescadero
5—Extra.....	American River Grange
6—Instrumental Solo.....	San Jose Grange
7—Address.....	Sacramento Grange
8—Grand Closing Ode.....	By the Choir
9—Extra.....	

This programme is subject to change by the Executive Committee.

A NEW YORK MIRACLE.

A REMARKABLE AFFIDAVIT MADE BY A WELL-KNOWN BUSINESS MAN.

Afflicted with Locomotor Ataxia for Fifteen Years—Did Not Walk a Step for Five Years—Was Given Up by the Leading Physicians of New York City and Discharged from the Manhattan Hospital as Incurable.

(From the New York Tribune.)

For some time there has been an increasing number of stories published in the newspapers of New York City, telling of marvelous cures of various diseases that have been made by different medicines and treatments. It has long been the intention of the Tribune to investigate one of the most interesting cases that could be found and give the truth to the world as a matter of news. Happening on the case of Geo. L'Hommedieu the other day, an investigation was made with the following very happy result:

When the reporter called on Mr. L'Hommedieu at the residence of his cousin, Mr. Edward Houghtaling, 271 W. 134th St., he said: "I am 51 years of age and was born in Hudson, N. Y. I served my time in the army, being corporal of Company A, 21st N. J. Volunteers. It has been about fifteen years since I noticed the first symptoms of my disease. I consulted Dr. Allen of Yorkville, and also Dr. Pratt, since deceased. Dr. Pratt exhausted his powers in my behalf and finally told me that he could do nothing more for me.

"Finally I was advised by Dr. Gill to go to the well-known scientist, Dr. Hamilton. He gave me a most thorough examination and did me no good. I felt I was growing weaker every day, and went to the Manhattan Hospital, at 41st St. and Park Ave., and was under treatment by Dr. Seguin. He treated me for about three months, and then told me that I had locomotor ataxia and was beyond the aid of medical science. I was now a complete physical wreck; all power, feeling and color had left my legs, and it was impossible for me to feel the most severe pinch or even the thrust of a needle.

"If my skin was scratched there would be no flow of blood whatever, and it would take it fully six weeks to heal up. In the night I would have to feel around to find my legs. My pains were excruciating and at times almost unbearable. I would take large doses of morphine to deaden the pains. About five years ago Dr. Lewis A. Sayre, of 285 5th Ave., made a trial of the French method of stretching the spine. Although I received no benefit from this treatment I shall always feel grateful to Dr. Sayre for his great interest and kindness.

"So severe had my case become by this time that I could not walk without assistance, and was almost ready to give up life.

"I began the use of Pink Pills for Pale People in September last. I took them rather irregularly at first with the cold water treatment. In a very short time I was convinced that I was getting better and I began the use of the pills in earnest, taking about one box every five days.

"The first sign of improvement was in November, 1892, when I had a rush of blood to the head and feet causing a stinging and prickling sensation. February 22d, 1893, was the first time in five years I had ever seen any sign of blood in my feet. From this time on I began to improve. My strength and appetite have gradually returned; I now have perfect control of my bowels, and the pains have gradually left me. I can sit and write by the hour and walk up stairs by balancing myself with my hands. Without doubt I am a new man from the ground up, and I have every reason to believe that I will be hale and hearty

in less than 6 months. I have taken about 12 boxes of pills."

Sworn to before me this Eleventh day of March, 1893.

H. E. MELVILLE,
Commissioner of Deeds,
New York City.

[SEAL.]

The reporter next called on Mr. Robert W. Smith, a member of the firm of Marchal & Smith, who said:

"I have known Mr. Geo. L'Hommedieu for twenty years. He became connected with our firm as secretary in 1879, and attended strictly to his office duties until 1881, when he was stricken down with his trouble. As the disease advanced he was obliged to succumb and reluctantly gave up his office work. I know that he tried various physicians and their treatments without the least success, and, as he states, he was finally discharged from the Manhattan Hospital, and told that he was in the last stages of locomotor ataxia and was beyond the hope of human aid. About six months ago, or so, he was advised to try Dr. Williams' Pink Pills for Pale People, with the cold water treatment. The last time I saw Mr. L'Hommedieu he had gained the use of his limbs to such an extent that he could walk up stairs with the help of his wife, and is now doing much important work for us at his home.

ROBT. W. SMITH."

Sworn to and subscribed before me this Eleventh day of March, 1893.

[SEAL.]

W. H. WOODHULL,
Notary Public, New York County.

An analysis of Dr. Williams' Pink Pills shows that they contain, in a condensed form, all the elements necessary to give new life and richness to the blood and restore shattered nerves. They are an unfailing specific for such diseases as locomotor ataxia, partial paralysis, St. Vitus' dance, sciatica, neuralgia, rheumatism, nervous headache, the after effect of la grippe, palpitation of the heart, pale and sallow complexion, and all forms of weakness either in male or female. Pink Pills are sold by all dealers, or will be sent post paid on receipt of price (50 cents a box—they are never sold in bulk or by the 100) by addressing Dr. Williams' Medicine Co., Schenectady, N. Y., or Brockville, Ontario.

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Marblehead, Mass.

List of U. S. Patents for Pacific Coast Inventors.

Reported by Dewey & Co., Pioneer
Patent Solicitors for Pacific Coast.

FOR THE WEEK ENDING MARCH 20, 1894.

516,857.	TRUCK—M. G. Bailey, San Jose, Cal.
516,860.	COMPOSITE MATERIAL—Carter & Hinman, Los Angeles, Cal.
516,730.	TIMBER PRESERVING APPARATUS—Curtis & Isaacs, S. F.
516,709.	DENTAL VULCANIZER—C. A. Davis, Pasadena, Cal.
516,931.	SPRAY NOZZLE—Chas. Hood, Puyallup, Wash.
516,988.	MOUTHPIECE—J. C. Ingram, S. F.
516,866.	ANTI-ROOTER—Henry Lahaud, Traver, Cal.
517,013.	HORSESHOE—J. C. McCollum, Long Beach, Cal.
516,897.	HOOK—G. W. McMillan, Hurleton, Cal.
516,743.	REVERSIBLE PLOW—W. Miller, Nojo, Cal.
516,727.	BALING PRESS FEEDER—D. J. Overholtzer, Spadra, Cal.
516,744.	CURLING IRON—T. F. Payne, Olympia, Wash.
516,911.	WATER MOTOR—W. H. Rucker, Hillsborough, Ogn.
516,712.	BALE TIE TWISTER—D. D. Tierney, Ione, Cal.
516,670.	KNOB—Jacob Weathe wax, Aberdeen, Wash.

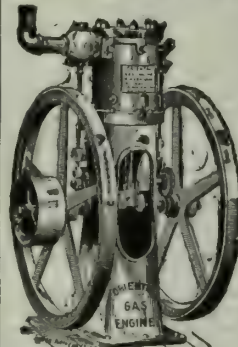
NOTE.—Copies of U. S. and Foreign patents furnished by Dewey & Co. in the shortest time possible (by mail or telegraphic order). American and Foreign patents obtained, and general patent business for Pacific Coast inventors transacted with perfect security, at reasonable rates, and in the shortest possible time.

The Attention

Of raisin-packers and fruit-growers generally is called to the advertisement of the S. P. Taylor Paper Co., which appears in another column of the PRESS. It will be well to keep this old, reliable firm in mind when you are ordering fruit-wrappers.

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"Orange Culture in California" was written by Thos. A. Garey of Los Angeles, after many years of practical experience and observation in the growth of the fruit. It is a well-printed hand-book of 227 pages, and treats of nursery practice, planting of orange orchards, cultivation and irrigation, pruning, estimates of cost of plantations, best varieties, etc.

The book is sent post-paid at the reduced price of 75 cents per copy, in cloth binding. Address DEWEY PUBLISHING CO., Publishers "Pacific Rural Press," 220 Market St., San Francisco.

THE following is from a Santa Ana letter in Los Angeles Times: The Santiago Orange-Growers' Association, at Orange, has officially announced the sale of its entire crop of oranges to the Earl Fruit Company. The terms of the sale are reported as follows, less ten cents a box commission: During March—Seedlings, \$1; standards, 80 cents. Navels, choice, \$1.25; standards, \$1. April—Seedlings, choice, \$1.15; standards, 95 cents. Navels, choice, \$1.40; standards, \$1.15. Mediterranean Sweets, choice, \$1.35; standards, \$1.10. May—Sweets, Malta Bloods and St. Michaels, \$1.60 for choice; \$1.35 for standards. June—Same brands, choice, \$1.85; standards, 1.60. Placentia sold to Germain, cash f. o. b. without commission, as follows: Seedlings, choice, \$1.10; standards \$1. Mediterranean Sweets, choice, \$1.50; standards, \$1.25. Washington Navels, choice, \$1.52½; standards, \$1.27½. Australian Navels, choice, \$1.27½; standards, \$1.02½. J. E. Hoy of Villa Park sold to Thacker Bros.; price not reported. Brookhurst is the only association fruit unsold, and will probably be contracted soon. There has been some question whether better prices may not have been realized for some of this fruit, but take it all around, the growers are pleased that the outcome is so much better than promised a few weeks ago.

Oftentimes the hindrances that lie in the path of duty may be compared to the toll gates upon our turnpike roads; they are kept shut till we are just upon them, and then fly open, as it were, of themselves. And that is time enough. If they had been open a week beforehand we could not have gone through at last.—John Newton.

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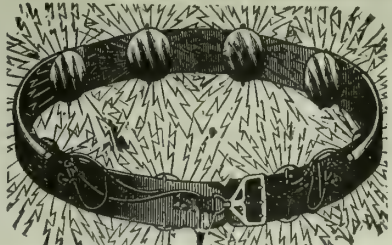
NOTICE.

The Annual Meeting of the Stockholders of the GRANGERS' BUSINESS ASSOCIATION, a corporation, for the election of a Board of Directors, and for the transaction of such other business as may properly come before it, will be held at No. 108 Davis Street, San Francisco, at 10 o'clock, A. M., Wednesday, April 11, 1894.

CHARLES WOOD, Secretary. **I. C. STEELE,** President.

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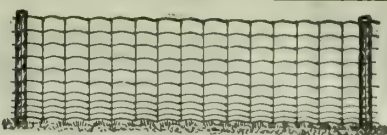
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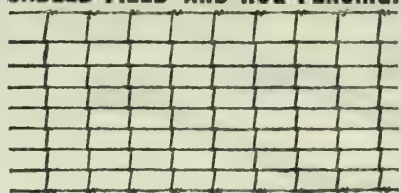
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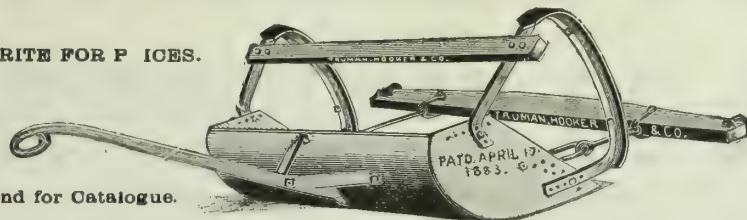
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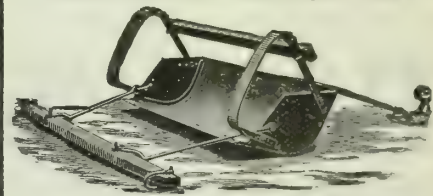
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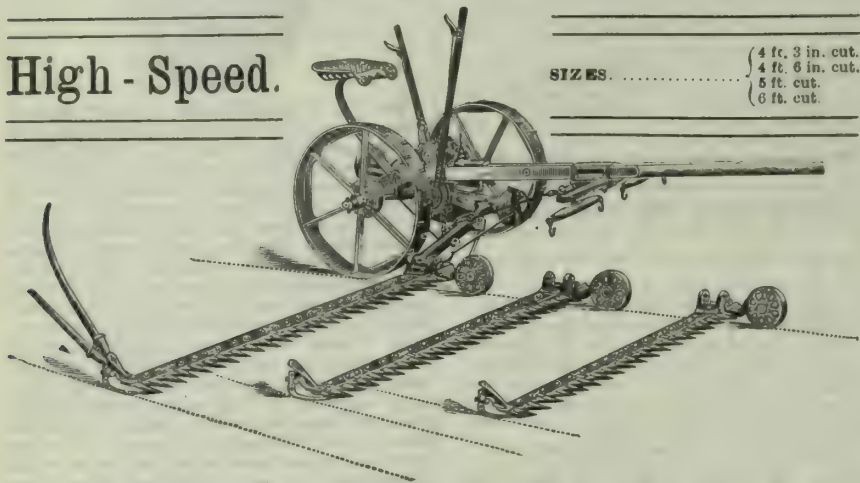
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This is the GENUINE and ONLY ORIGINAL Buckeye Mower.

All Claims to the Contrary are False

High - Speed.

SIZES. 4 ft. 3 in. cut.
4 ft. 6 in. cut.
5 ft. cut.
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A Buckeye Machine made in the Buckeye State of Ohio.
How can a Buckeye come from any other State?—
Perhaps this Mower is not the Cheapest. BUT IT IS THE BEST.

High Speed, Noiseless Action, Great Strength, Light Draft and Durable.
Competitors having Inferior Machines may make Lower Prices.

Buckeye Mowers, Buckeye Reapers, Buckeye Binders.

WE HAVE THE FINEST AND LARGEST CARRIAGE REPOSITORY ON THE PACIFIC COAST.

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Greatest Pulverizer of the Age.

SOMETHING NEW AND ORIGINAL.

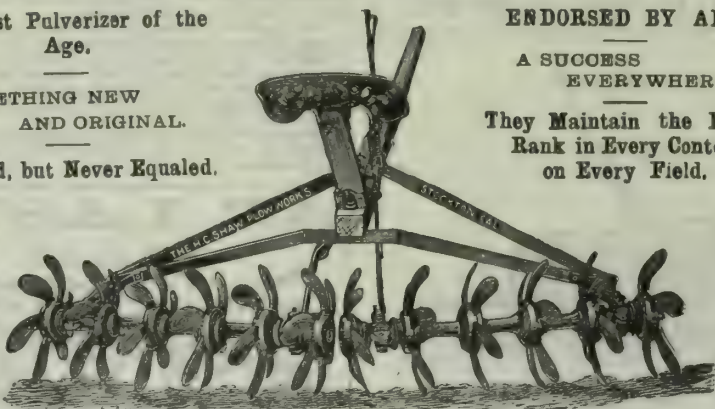
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A SUCCESS EVERYWHERE

They Maintain the Front Rank in Every Contest on Every Field.

SEND FOR CIRCULARS.



SEND FOR CIRCULARS.

More of Them Sold Annually than of all other Styles & Kinds of Cultivators Combined.
Most Simple, Most Durable, and Most Satisfactory Cultivator in Use. Specially Adapted for the Cultivation of Vineyards and Orchards. Prices Reduced to Hard Times Basis.

H. C. SHAW PLOW WORKS, STOCKTON, CAL

THE REVERSIBLE OR FRUIT-GROWERS' AND ORCHARD HARROW.

Set for Cultivating Towards and Under the Tree.
SHOWING THE EXTENSION HEAD.

THE CLARKS is the ONLY CUTAWAY! Don't be fooled by Cheap Imitations.



WE HAVE 'EM REVERSIBLE, 4, 5, 6 and 8-foot cut. Two horses can easily handle a 5 or 6 foot machine. It requires four for an 8-foot.

RAIN, MORE RAIN! JUST WHAT YOU NEEDED. What you need now is a tool to kill the weeds that will spring up and at the same time break the crust and pulverize your ground and prevent the moisture from escaping. We offer you for this purpose the

Famous Clark's Cutaway Harrow!

IT WILL DO IT, TOO, and do it better than any other tool you have or can get. We furnish with the 4, 5 and 6-foot machines, if desired, an extension head, as shown in cut above. By using this head the soil can be cultivated clear to the trunk of the tree without the overhanging branches interfering in the least with the work of the horses.

ALLISON, NEFF & CO.,

707 FRONT STREET. SAN FRANCISCO, CAL.

THE CELEBRATED BAIN WAGON.

SOLD ON THIS COAST FOR OVER TWENTY YEARS!



...The Best Wagon in the Market...

The BAIN WAGONS are manufactured on the day's-work plan, thereby insuring uniform strength, durability and completeness in every respect as well as superiority over all such as are made up so largely on the jobbing principle.

Remember that when you buy a BAIN WAGON you get a First-Class Article at about the Same Price as Inferior Wagons are sold for.

THE BAIN WAGONS ARE GUARANTEED.

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BAKER & HAMILTON

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SACRAMENTO

TO THE USERS OF MOWING MACHINES:—That the Buckeye Mower is the favorite machine with all hay-makers in the State is a fact well known, and that no other Mower excels in its simplicity and durability is conceded by all, hence it is necessary that all farmers be fully advised as to where and how they can obtain the Genuine and Only Buckeye Mower. For that reason we announce here in the most positive manner that we are the sole and only general agents for the ORIGINAL BUCKEYE MOWER for California, Nevada and Arizona, and that no concern save only Aultman, Miller & Co., whom we represent, can justly lay claim to being the makers of the original Buckeye. The makers of the Adriance Mower, with their factory in the Empire State of New York, claim to make a Mower the very name of which is suggestive of Ohio.

The facts are these and cannot be controverted. The BUCKEYE Mower has been made by the BUCKEYE factory of Aultman, Miller & Co. in the BUCKEYE State for nearly forty years.

The patent was granted to Lewis Miller, of Aultman, Miller & Co. The first BUCKEYE was made by Aultman, Miller & Co., and they have made them ever since. In 1857, Adriance, Platt & Co. purchased from Aultman, Miller & Co. a license to make and sell the BUCKEYE in a LIMITED TERRITORY, and, by terms of the contract and in order that said licensees could commence the manufacture, they were furnished with patterns, castings and a pattern machine, and the records in the Patent Office will show that they paid a large sum for the license. Is this not proof positive that they do not and never did build the original Buckeye?

One week ago there was published in this valuable journal what purported to be a copy of an affidavit from O. Aultman, which the agent of the Adriance machine used to bolster up a claim that the Adriance is the original Buckeye. In answer to this we here beg to submit and extract from a widely distributed circular issued by Aultman, Miller & Co.

TRADE MARKS.

The provisions of the trade-mark law are presumably intended for the protection of legitimate interests; but they can also be plied by the unprincipled to the utmost detriment of vested interests. A glaring example is furnished.

"Aultman, Miller & Co. being secure in the possession of their mark, 'Buckeye,' by common law, did not resort to registry. It seems, however, that the Adriance concern was on the alert for this form of advantage, and registered the word 'Buckeye.' The fact only came to the knowledge of Aultman, Miller & Co. some years after its occurrence."

Respectfully yours, HOOKER & CO.



Vol. XLVII. No. 15.

SAN FRANCISCO, SATURDAY, APRIL 14, 1894.

TWENTY-FOURTH YEAR.
Office, 220 Market Street.

Sweet Peas at Sherwood Hall.

The sweet pea of to day is one of the most wonderful results achieved by modern horticulture in dealing with the flowers of our grandmothers. Many flowers there were in the old-fashioned gardens; only a few exist in glorified form in the gardens of the present. The greater part of the bloom we now cultivate is essentially new and has been developed from species brought from far beyond our national borders. Horticulture is now probably the most thoroughly international calling of mankind; it links all the civilized races in sentiment and in business relations. This interchange brings to all races pronounced novelties, and in their appeals for popularity they have crowded most of the old-fashioned flowers over the garden wall. Most conspicuous, perhaps, among the survivors of the old regime is the sweet pea, but it is not the sweet pea of the old time, after all, for it has assumed size and substance and hue and prolificacy of which the elders never dreamed. It has enjoyed the efforts of skillful hybridization, scrutinizing selection and intelligent culture until there is little left of the old-time sweet pea save the delicious sweetness, which comes down to us as a wave of incense from the past.

The engraving on this page represents a portion of the 100-acre sweet pea field of the Sunset Seed and Plant Co. at Sherwood Hall, Menlo Park, the home estate of Mr. Timothy Hopkins. Mr. Hopkins is a devoted lover and connoisseur of the sweet pea, and has given much personal attention to forming the collection which now is the basis of the commercial operations of the Sunset Seed and Plant Co. They have a separate acreage grown for blooms exclusively, which are supplied to the markets of the whole coast. These vines are kept in bloom for months and months in succession.

Continual picking of blooms insures subsequent blooming and prevents the formation of seed pods—for you cannot grow the same sweet peas for flower and seed at the same time, without defeating one or the other end. The blooms in the big seed acreage are not plucked by the Sunset Seed and Plant Company to meet their cut flower demands. The vines are left intact until the blooms ripen into pods, and when the pods are cured their horse power thresher spills into sack after sack the symmetrical, generous-sized sweet pea seed.

The growth of sweet-pea seed is really a very complex operation and involves many considerations, because each season brings a need for increase of quantities in certain varieties. It is obvious that as a given space must be used for the same variety year after year, to preserve purity of

stock, new acreage has to be used for additional product, to meet the increased demand. If last season there was sown an acre each of "Apple Blossom," "Boreatton," "Captain of the Blues" and "Delight," and this year two acres of each are to be grown, the grower is compelled to occupy new land that has not had peas on it previously and to plant on it the extra acre of each. Then, again, there is sure to be additional space needed in a successive season. That, as well as sowing for several years to come, has to taken into account. One could really go into sweet-pea seed growing on a large scale and at the end of a couple of years find his varieties so jumbled as to necessitate his abandonment of sweet-pea growing. It might take a couple of years to get his volunteer peas cleaned

Reducing Interest on Mortgage Indebtedness.

If some private mortgagees had as much sense as the railway managers they might also see that about the only chance the mortgager has to ever meet his obligations is to reduce the rate somewhat. We do not often have to commend the railway managers for common sense, but it really seems as though they were indulging in the use of that commodity. They have announced that interest on deferred payments on land bought from the company shall be at the rate of six per cent. This refers not only to contracts made on or after April 9, 1894, but on certain conditions to outstanding contracts. In regard to the latter the privilege of paying up ten per cent of the principal is the condition required under which the rate of interest on the balance will be six per cent. To illustrate the case: If a man owes a balance of \$1000 and his interest of seven per cent falls due next September he may pay \$170 at that time, being ten per cent of the principal and \$70 interest, and his account will then stand \$900 due at six per cent, or \$54 per annum.

The announcement affects contracts of over \$2,150,000, and refers to all lands sold by the Southern Pacific Company, whether through the Pacific Improvement Company in Capay valley or in Oregon. This will affect 2000 purchasers of land in various parts of this State and Ore-

gon. When the land department was formed in the rate of interest on deferred payments was 10 per cent. In 1880 the rate was lowered to 7 per cent, the outstanding contracts, however, being allowed to work themselves out at the original rate. The order now reducing the rate to 6 per cent was made by C. P. Huntington. He does not pretend that the reduction is made from purely philanthropic motives, but he desires to aid the landholders to as speedy a development of their holdings as possible, as the more rapidly the land is brought under cultivation the more freight there will be to handle. Whatever may be the philosophy of the matter, the fact will be welcome.

A LARGE and enthusiastic meeting of fruit-growers was held in Yuba City recently, at which was organized the Sutter, Butte and Yuba Fruit Exchange, with B. F. Walton as president. This organization represents about six thousand acres of bearing orchard, and will co-operate with the State Fruit Exchange. The capital stock is \$50,000. The principal place of business is Yuba City.

At Elgin, Ill., Matilda Althen, a girl of 20 years, captured 162 sparrows that fed upon the refuse from a brewery, taking advantage of their inebriation, and collected the State bounty of 3 cents per head.



PARTIAL VIEW OF LARGEST SWEET PEA FIELD IN THE WORLD.—SUNSET SEED AND PLANT CO., MENLO PARK.

out of the land, and when ready for planting afresh, on a revised schedule, the careless grower would find his trade gone to better calculators.

We are informed that the Sunset Seed and Plant Co. have sown for offering to the trade in bulk the coming spring and shipment next fall 64 distinct varieties of sweet peas. They have in the ground some 25 varieties additional, results from which, however, they will hold over and sow a second season so as to be able to offer in quantity to large wholesale buyers. They tell us that their sweet pea trade has grown enorm usly. The past season they have supplied by far the biggest seed merchants in Germany, France, Great Britain, Australia and the United States and Canada. They are particularly fortunate this season, because, notwithstanding lack of rain, a good crop of peas is almost a certainty. They were wise enough to get their seed into the ground early. Failure would mean not only a season's loss of trade, but also lack of return from a hundred acres.

A field of sweet peas in bloom is a gorgeous sight. Well does the writer remember the delight of a jaunt through the Sunset sweet pea fields last summer when the State Floral Society made a day at Sherwood Hall.

PACIFIC RURAL PRESS.

Office, 220 Market St.; Elevator, 12 Front St., San Francisco, Cal.

All subscribers paying \$3 in advance will receive 15 months' (one year and 13 weeks) credit. For \$2 in advance, 10 months. For \$1 in advance, five months.

ADVERTISING RATES.

	1 Week.	1 Month.	3 Months.	1 Year.
Per Line (agate).....	\$.25	\$.50	\$ 1.20	\$ 4.00
Half inch (1 square).....	1.00	2.50	6.50	22.00
One inch.....	1.50	5.00	13.00	42.00

Large advertisements at favorable rates. Special or reading notices, legal advertisements, notices appearing in extraordinary type, or in particular parts of the paper, at special rates. Four insertions are rated in a month.

Registered at S. F. Post Office as second-class mail matter.

Our latest forms go to press Wednesday evening.

ANY subscriber sending an inquiry on any subject to the RURAL PRESS, with a postage stamp, will receive a reply, either through the columns of the paper or by personal letter. The answer will be given as promptly as practicable.

ALFRED HOLMAN.....Editor
J. F. HALLORAN.....General Manager
E. J. WICKSON.....Special Contributor

San Francisco, April 14, 1894.

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The Week.

Apprehension about the drouth is becoming the leading theme of thought and speech. The peerlessly fine weather is doing much for the Midwinter Fair, but, unfortunately, it cannot do the same for the midsummer comfort of the people. We notice that the southern people are flying to the rain-makers as a last resort. It may give them some temporary comfort, and if the rain does come it will be cheap at the prices named, though the rain-maker will have no more title to it than he has to the cyclonic action which brings the storm. There is one safe thing about it, however: the rain-fakers cannot stop rain any more than they can make it, so let the people divert themselves if they so desire.

Naturally the markets are showing the unsteadiness which is usual in the face of a dangerous outlook. We do not look for any marked variation in the prices of staples unless adverse conditions should also visit other great supply regions. It must be remembered that this cannot be regarded on the whole as a dry year. Probably half the geographical and vastly more than half the arable area of the State has had a good rainfall and only needs the finish of showers to make fair crops. These may still come in time. Our columns this week contain very full reports of the present outlook in the different counties of the State. We expect to publish such reports weekly during the crop season.

It appears from the Government report, which is telegraphed April 10th, the terrible March weather did much harm to wheat as well as fruit. The injury to the crop is undoubtedly considerable, if not great. In the Eastern and Northern States the damage was comparatively slight. In the South Atlantic and Southern States the injury was marked and decided, with perhaps the exception of Texas, while in the States of Ohio, Indiana, Michigan and Kentucky the injury from frost is considerable, although it is somewhat contingent upon future meteorological conditions. The returns indicate that the freezing of the ground was quite prevalent in rich moist lands, but with roots left untouched, or at least alive, there are good prospects of recuperation on the recurrence of favorable weather.

IN MILDURA, an Australian irrigated colony, they have established a co-operative concern, to be known as the Planters' Union, which is to have a grading and packing

outfit, and besides is to do this complete coaching of its members: "To take the grower in hand at the beginning of the season, and to finance him until his fruit had been disposed of, providing him with trays, sweat-boxes, expert advice on the curing of his fruit, and doing his stemming, grading, dressing, packing, shipping and selling. The grower will be advanced money on his crop on a fair valuation, interest at the rate of eight per cent per annum being charged for such advances." This is much like the measures now being urged in this State.

Summer Crops for Moist Land.

While our readers are preparing to send us specific statements of just what they have done by turning a small piece of moist land to its fullest product of summer crops, we will indulge in a few general reflections which may perhaps suggest to correspondents that they can fill in the practical details from their experience.

Without stopping to scrutinize the rainfall record, we take it for granted that in some parts of the State this is the driest year since 1877. It is not a year of general drouth, as that was, but it is just as bad in special divisions of the State. This being so, let us turn back and see what was done in 1877 to meet the failure of crops on the lands upon which the farmer usually relied. Here is a little generalization from a contributor in the RURAL PRESS of October 13, 1877.

Every piece of available land where artificial watering could be practiced has been utilized, and the vegetable crop is in superabundance, and garden truck of all kinds is cheap. Everything that can be turned into feed for stock is being carefully boarded, so that there will be little difficulty in carrying through what stock small farmers may have, provided they are not overcrowded; and where this last is the case they are cutting down and thinning out.

This fragment from a correspondent shows how the supply of wholesome food for man and beast was secured in the face of drouth. Our correspondent does not refer to lands irrigated by a well-developed system. He wrote from a valley where there was no such system and where reliance rested upon the rainfall, which very seldom failed. He refers simply to what was done by small farmers by using moist low lands, or by taking water from spring or well and making it go as far as possible in the growth of summer crops. And it is chiefly for the small farmer that our suggestions are made. The colonist upon a small piece of the plain is included, for he usually has artificial water supply from well or ditch. It is, however, the farmer upon a few scores of acres, or a few hundreds of valley and hillside, with, perhaps, a riparian frontage and with springs and wells on the higher lands, who is usually best fixed to develop moist land in a dry year. The man who is most afflicted in a dry year is the great rancher with thousands of stock on thousands of arid acres. Such men are least able to help themselves, and have to make frightful drafts on their reserve capital, unless they have fortified themselves with some irrigated land and alfalfa against the failure of the upland pastures.

And this suggests the comforting thought of how much better we are conditioned to undergo drouth than we were in 1877. The irrigated area of California is certainly a hundred fold greater than it was then, and the area of land irrigated by underflow at least as much more. In 1877 there was hardly a green acre away from the river bottom and reclaimed land in the whole San Joaquin valley. Now there are hundreds of thousands of acres of alfalfa. In 1877 cattle were driven from San Luis Obispo county, for instance, clear over the country to the tule lands of the San Joaquin delta, which they reached in a perishing condition; now there is enough alfalfa on the west side of the San Joaquin to make them rolling fat before they traverse half the distance. In 1877 about all the land which could be used for summer cropping was swamp land which in ordinary years was too wet for culture; now there are townships after townships of land in which, either directly or indirectly, water has been brought near enough to the surface to sustain summer crops which will be worth growing in a dry year if not ordinarily. Even the young trees and vines should, under certain circumstances, divide their water supply with crops which would help out the family table and the feed rack. For such reasons as these, a dry year, though it will be hateful and injurious, need not have all the terrors of dry years twenty years ago when our people were nearly at the mercy of the elements.

Now, what we want to develop immediately, by the aid of our readers who are disposed to help each other, is, how can land which is usually too wet for cropping be made to yield maximum returns this year? and how can small areas of dry land be moistened enough for production, without greater investment than an ordinary farmer can afford to make? Please tell us, then, how you developed water; what your wells, pumping machinery and reservoirs cost and how they were constructed, and what crops you successfully produced by late planting. We are fully aware, for instance, that corn, sorghum, mangel wurtzel, carrots,

cow peas, horse beans, squashes, and the like, can be made to yield large weights of feed, even if planted on moist land as late as May, though earlier planting would be better. This gives considerable margin in time to prepare for such crops, if any land is or can be made suitably moist for them. We want to know the experience of readers on all these plants, of which it will not require much of an acreage to carry quite a little band of stock until grass grows again. For such crops low lands are not absolutely required. There are many swales on hill farms, which are usually boggy, which this year can be made productive, if broken up and worked down well before the present moisture evaporates.

The same sort of land indicated for stock feed is usually also available for staple vegetables for family use. The river bottoms and reclaimed tule areas will no doubt bring to the market immense weights of vegetables this year, and will amply make up for the loss on higher lands which may fail this year. It is some consolation then that though the year be dull and dry, good wholesome food articles will not be high, though they will probably well pay those who have suitable land. But the thrifty farmer who may have a short income this year will not wait to buy such things if he has any land upon which he can produce enough for his own use and a surplus to meet his store bill. By making a start as soon as possible now, he can get large weight of potatoes, cabbage, beans, tomatoes, beets, squash, carrots, etc., providing he can save the natural moisture by good cultivation, or can bring water artificially even to a comparatively small area.

In such undertakings do not cover too much ground. The crops will flag and fail even on moist ground if not most diligently and thoroughly cultivated, and if the supply of irrigation water is less than the needs of the tract little but disappointment will be realized. Make careful calculations as to the amount of work and water you can give the crop, and then make the area a little smaller than your estimate indicates. Good work is best of all in a dry year, and bad or shiftless work is most destructive.

Let us proceed with these subjects forthwith while there is still time to help each other by contributions from experience. And while we are doing this we shall all learn something which will be useful in other years than dry years. The whole drift of agricultural opinion and practice is toward irrigation. Even the short summer drouths of the East are too long and grievous to please progressive farmers, and summer use of water from other sources than directly from the clouds is now being planned for as never before imagined. If we get some good lessons for a dry year in 1894, they will be found to be lessons for all our farming lives.

The State Fruit Exchange.

Manager Adams, of the State Exchange, who has been spending some weeks in the Fresno raisin district, will hereafter be at his desk at the rooms of the State Board of Horticulture, except when called to the country to address meetings of fruit-growers. It is desired that those interested in co-operation in every neighborhood should agitate the subject and communicate with Mr. Adams at 220 Sutter St., who will arrange to address the fruit-growers wherever the interest is such as to ensure a good attendance. Mr. Adams and Col. Hersey are so much in demand for these occasions that to get proper results for their work it is highly important that the meetings be widely advertised in advance and the fruit-growers got out to hear them.

Mr. Adams is now engaged in preparing to issue a weekly bulletin similar to those issued by the Santa Clara County Exchange last year. To comply with the postal laws, which require all publications to have a regular date of issue and a regular subscription price if they are to be mailed as second-class matter, it is proposed to make it a regular weekly publication, with a moderate subscription price, say \$1 per annum—a matter, however, which has not been decided.

The directors of the Exchange are very earnest in their determination to discharge the trust committed to them to its fullest extent, but they propose to do one thing at a time and do that thoroughly, adding other features as funds accumulate. At present the pressing work seems to be the organization and giving out information.

PROF. SMITH, Chief of the Horticulture and Agriculture building, has now completed the arrangement of the exhibit of fruit models loaned to the Midwinter Fair by the Department of Agriculture at Washington, and should be seen by all fruit-growers of this coast. It is the most expensive and comprehensive exhibit ever made on this coast. The cost of these models, which were formed by the best artists that could be procured in this country, is over \$8000. Each sample of fruit was taken with the greatest of care, and is the perfect representative of the class of fruit shown. The exhibit is in the gallery of the Horticultural building.

From an Independent Standpoint.

The Industrial Army is assuming large proportions and is becoming a serious problem. Its divisions now number at least a dozen, each from one hundred to twelve hundred strong, and all moving eastward. Coxey's original division is still marching slowly on foot through Western Pennsylvania, gaining recruits as it goes. The Pacific Coast divisions travel by rail, the Los Angeles company having gotten as far as St. Louis, while the San Francisco company is at Ogden, in Utah. Wherever a division appears the public provides for it liberally, but it is with the idea of helping it to go on and away. It is deemed cheaper and wiser to feed and speed the "Commonweal" guests than to harbor them. In this spirit the people of Oakland received the San Francisco army graciously and generously last Thursday, but on Friday the police drove them out of town. The reception at Sacramento was similar and the departure was much the same. The division having traveled the whole length of the Central Pacific system is now at Ogden, where it is appealing, thus far in vain, to be hauled eastward over the line of the Union Pacific. Great indignation against the Central Pacific people has been stirred up at Ogden. In a suit hurriedly brought by the Governor the railroad company has been adjudged guilty of a misdemeanor in bringing the men into the Territory, and has been directed to return them from whence they came, or at least beyond the western boundary of Utah. This the railroad company refuses to do. In this situation one of two things will happen, namely, either the Union Pacific will relent and haul the men on eastward or the Utah authorities will seize Central Pacific cars and send the men back west. It is probable that some arrangement will be made with the Union Pacific. To haul the army back to the Utah line would be to turn them out to starve; and this, of course, will not be done.

There are now not less than thirty thousand men engaged in this absurd movement, and an equal number are organized in squads waiting to join the advancing columns. Of this host many are mere vagabonds, but the greater number are men who would work if they could find work to do. They have joined the Coxey army, not through any conscious sympathy with its political purposes, but because they have nothing better to do. The spectacle of a movement, organized and promoted as this is, is not a pleasing one; and it certainly is not a profitable one. It is a thing which will degrade not only the men engaged in it, but to some extent the whole body of American labor. As an object lesson to the young it is a painful and injurious thing. It ought to be stopped; and, we believe, the Government ought to stop it—not with Gatling guns, as some suggest, nor with policemen's clubs, but in an orderly and charitable way. This could be done by providing work in road making, or some other form of public advantage, at a nominal wage of forty or fifty cents per day. This would enable men to live until they could find better work at normal prices; it would not degrade labor by putting a premium on idleness; it would lift from private benevolence a burden of charity which it has borne long enough. During the past six months San Francisco contributed upwards of one hundred thousand dollars to feed the men who are now at Ogden; and other communities all over the country have been equally generous. The burden has become too great: in spite of all their efforts we see this disgraceful and degrading spectacle of the Coxey movement. It is time for the public in its organized character to take up the burden.

It will be objected that this proposition is "socialistic" in its tendency. Well, suppose it be all this, then what of it? Almshouses are socialistic, asylums for the insane are socialistic, the Protective tariff which most of us so eagerly support is socialistic, our system of free public instruction is in a sense socialistic and even government by the people is socialistic. For one, the RURAL has no fear of socialism in the form of assisting homeless and starving men to earn the means of life. It would be easy to turn such a scheme into mischief by paying too high wages or by making the work easy and a harbor for the indolent and the vicious; but this is not the plan in view. Let the wage rate cover bare subsistence; let good work be required. This would cost less than private benevolence; it would distribute the burden equitably and it would put a stop to private beggary, which is so often an injustice to him who gives and an injury to him who takes.

There has been a series of events in the coke districts of western Pennsylvania during the past week, in some respects similar to the troubles at Homestead two years ago. Some weeks back the furnace owners made a heavy cut in the rates of wages, and when the men struck, put new men in their places. The strikers attempted to persuade the new men to leave the work, and failing in this, forc-

bly drove them from it. A series of fights culminated last week in something very like a battle between the strikers on one side and the new workmen aided by guards on the other side. The fight did not reach a finish, for the general manager of one of the coke companies was among the first killed; and this made such consternation on both sides that activities ceased, the strikers slinking away. Since then the advantage has been wholly with the new men as against the strikers, though there is rarely a day when the dead bodies of from three to ten of the new workmen—or "scabs" as the strikers call them—are not found in out-of-the-way places. The criminality and wickedness of all this is not more to be condemned than the false principle out of which it grows. This principle, asserted and practiced by many of the labor unions, is that the right to strike implies the right to make striking effective; or, in other words, that strikers not only have a right to quit work when its conditions and terms do not suit them but the further right to prevent others from taking up the work so abandoned. Such a principle cannot be allowed, because it is utterly in violation of the right of new workmen who may be willing to accept the abandoned work upon the conditions and terms rejected by the strikers. What becomes of the individual right to labor upon such terms as may be agreed upon between master and workman, under the theory of the unions? In this view the proposition is of course absolutely untenable. In the attempt to enforce a false principle it would destroy a sound one which lies at the base of individual responsibility and of manly character.

The right to strike is an absolute right, as sound and as sacred as the rights of life and liberty; but it is no more sound or sacred than the right to labor. It is this sacred right—the right to labor—that is violated when a striker or unionist attempts by threats or force to drive another man from work which he has himself rejected or lost.

Within the past few days a decision has been rendered by Judge Caldwell, in the U. S. Circuit Court at Omaha, definitely in line with what is said in the above paragraph. The receivers of the Union Pacific applied to the Court for an order restraining the men from "associating and conferring together" with a view to securing an increase in their wages; also to restrain them from striking. In rendering judgment the Court said:

A corporation is organized capital. It is capital consisting of money and property. Organized labor is organized capital, its capital consisting of brains and muscle. What it is lawful for one to do it is lawful for the other to do. It is lawful for the stockholders and officers of a corporation to associate and confer together for the purpose of reducing the wages of its employees, or of devising other means of making its investments profitable. It is equally lawful for organized labor to associate, consult and confer with a view to maintain or increase wages. Both act from the promptings of enlightened selfishness, and the action of both is lawful when no illegal or criminal means are used or threatened.

This is sound sense and, we cannot doubt, sound law. It allows to workmen the same right of association and conference and combination allowed to capital, limited only by prohibition of illegal or criminal means or threats. If the spirit of this judgment can be impressed upon the employers and upon the workmen of the country—and one party needs it as much as the other—it will save repetition of such bloody and demoralizing events as that at Homestead in 1892 and that in the coke regions last week.

The most notable speech, in a purely political sense, made in the Senate during the present administration, was delivered on Monday by Senator Hill of New York. Hill is a Democrat and the friend of Tammany, and he combines political and personal enmity against Mr. Cleveland. While nominally on the question of the Tariff, Senator Hill's speech was an all-round attack on the administration. Against Mr. Cleveland it was charged that he had been false to his party in putting a Republican (Gresham) in charge of the State Department. The Hawaiian policy he declared to be a stupendous blunder. Coming down to the tariff, he declared the Wilson bill undemocratic, both in principle and make-up. The income-tax clause he denounced as "unnecessary, ill-timed and mischievous, suddenly sprung upon the country in the hour of its distress, undemocratic in its nature and socialistic in its tendencies." Against it, he said, he uttered the protest of New York. He would not, he declared, vote for the tariff bill with the income scheme attached to it. Referring to the general features of the Wilson measure, he said that they were framed in disregard of the prostration of industry; and in a spirit which should have no place in the legislation of the country at such a time.

The significance of this speech lies wholly in its political suggestions. It is the beginning of war against Cleveland on the part of old party liners of the New York type who resent the ascendancy of the Mugwumps in Mr. Cleveland's councils. That Hill should break out against Cleveland was expected, but it has been the general expectation that it would take the form of a combination

with the opponents of the President's financial policy. On this question he stands ground with the President and gives the Populist movement some hard slaps which will make it impossible for him to work in combination with the Southern and Western Democrats, who are ardent in support of the income tax and equally ardent in support of free silver coinage. Mr. Hill has chosen deliberately between the friendship of the Southern and Western element of the party and the support of his own State, deeming it wiser evidently to keep his fences at home in good condition than to increase his popularity abroad. It is, perhaps, too well understood to need explanation that Mr. Hill is purely a machine politician and that he never holds or expresses an opinion excepting from motives of policy.

The Republicans are, of course, greatly pleased with Hill's speech because of its pledge against the Wilson bill. Hill always speaks for his colleague (Murphy) as well as for himself; and two Democratic votes against the measure is deemed a good beginning of the campaign.

The Raisin Situation.

TO THE EDITOR:—Replying to your request for a review of the raisin prospect from my standpoint, after some weeks of study, I will write frankly how it appears to me, promising that, as you know, I cannot approach the subject from the standpoint of an expert. There is no doubt that more raisins are produced than can be sold at prices remunerative to the majority. It is not popular to say there is over production, especially as a large acreage is not in full bearing. Most people here prefer to think, not that too many raisins are produced, but that there are not enough eaten. It is true, at any rate, that there are raisins now here, and in store East, whose owners wish to sell and cannot do so. It is also true that the prices realized for those thus far sold have, in some cases, been less than the cost of labor expended upon them, and in no case, I presume, has any return been received in the way of interest on the investment, or any progress been made from sales of raisins toward paying off mortgage indebtedness. Of course I do not know these things, but the situation is what I gather from conversation with scores of growers, and from their remarks at the many meetings I have attended. It is, of course, not a year for money making in any branch of industry, and the great stringency which certainly exists in the raisin district is doubtless in part due to large mortgage indebtedness, carried at high interest, on land purchased in the expectation of getting five or six cents for raisins in the sweat box forever.

While this condition is unquestionably due in large part to bad judgment on the part of growers in supposing that any agricultural investment could long continue to yield the returns realized by raisin growers there for some years, and in incurring indebtedness on that basis, the people are none the less deserving of sympathy. If mankind were alike in judgment, means of information and strength, there would be little pecuniary trouble.

The question of overproduction is hard to settle. The best evidence I know of is the action of dealers. When the natural demand for any commodity is not less than the supply speculative buyers are always in the field to take all offerings, seeking the goods even to the doors of the producer. There is a market at home and it costs nothing to sell at living prices. When the supply outruns the demand, buyers become few and wary, and the pressure to sell induces consignments, and when those have once begun all buying from first hands ceases, the producers engage in a scramble of consignments and a general slaughter ensues. This is unquestionably the present condition of the raisin trade, and would unquestionably show overproduction were not nearly all commodities in pretty much the same condition. The worst thing about the raisin trade is that this condition of things began in 1892, when the country was prosperous and the output less than the past season, which in turn was less than is expected the coming year. By this year, or 1895 at latest, the maximum raisin crop is expected, as planting ceased two or three years since, and enough vines are being taken out to offset the increasing age of those remaining. Some grapes have not been picked at all this year, except by the hogs, which would be very largely used as harvesters, especially for the second crop, if it were not for lack of proper fencing. A few have turned in hogs and herded them, and a good many of the inferior raisins are being used for hog feed.

There is a great difference in the land. The best dark sediment sub-irrigated land will yield a living, I am told, and perhaps a fair interest on a reasonable valuation, at two cents per pound, while some other vineyards might starve their owners at 3½ cents. There is in the counties south of here much land of this best quality not occupied by fruit. If the demand is not largely increased and it is found that raisins enough can be produced on the still unoccupied lands of this quality to supply the demand, it would seem there was danger that the most productive lands would ultimately be devoted to this crop and starve the owners of the lighter lands out. Happily, at present there is no movement that way, and it is the general opinion that by prudent and concerted action the crop of the existing vineyards can be marketed at living rates. No more bonanzas are expected in the raisin business.

I must not be understood as a calamity howler, but as reporting the facts as I find them. I do not find that the raisin or any other fruit industry is gone to the dogs, but I do find that many individuals who engaged in the business with small capital and unreasonable expectations are headed that way. I believe that prudent co-operation will save many who would otherwise go, and enable others who would otherwise lose all to save part. But I do not believe

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, April 11, 1894, are from official sources, and are furnished by the U. S. Weather Bureau expressly for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total rainfall for the week.	Total seasonal rainfall to date.	Total seasonal rainfall last year to same date.	Average seasonal rainfall to date.	Maximum temperature for the week.	Minimum temperature for the week.
Yuma.....	2.16	1.36	3.12	92	54	
San Diego.....	4.76	9.07	9.10	64	50	
Los Angeles.....	6.40	26.19	17.27	74	46	
Fresno.....	6.17	11.10	7.90	90	46	
Sacramento.....	13.85	22.62	18.02	84	48	
San Francisco.....	16.10	21.44	22.60	75	48	
Red Bluff.....	19.16	31.28	21.40	82	48	
Eureka.....	.68	49.78	44.28	64	42	

Crop Condition and Outlook.

Reports from Nearly All Counties.

Following is a synopsis of the crop bulletin for the past week received by Director Barwick, of the State Weather Service, from voluntary observers:

The average temperature during the week ending April 9th was, for San Francisco, 56°; Eureka, 50°; Red Bluff, 64°; Sacramento, 64°; Fresno, 68°; Los Angeles, 58°; and San Diego, 56°. As compared with the normal temperatures there was an excess of heat at San Francisco of 1°, Eureka 1°, Red Bluff 5°, Sacramento 6°, and Fresno 8°, while south of Tehachapi, in southern California, there was a deficiency of heat at Los Angeles of 1° and San Diego 2°. This excess of heat in the great valleys of the Sacramento and San Joaquin has rapidly advanced the growth of fruits, but with the constant north winds there has been a bad effect on the cereal crops. Early-sown and summer-fallowed grain stands the drouth much better than the late and the winter-sown grain. This dry weather will allow the low, tule-land farmer to get in grain or other products that otherwise would be left uncultivated were rain of any great amount to be precipitated. The present prospects and outlook are certainly bad for the grain yield.

SISKIYOU (Yreka).—Fall-sown grain doing well; farmers seeding; highest and lowest temperatures, 76 and 25 deg.

BUTTE (Gridley).—Peaches, almonds, pears and other fruit looking well. Apricots injured by the March frosts. Dry weather has not injured the grain prospects, but if the northers continue and the rains keep off there is a likelihood of short crop of grain. Highest and lowest temperatures, 81 and 46 deg., with .01 of an inch of rain on the 6th.

SHASTA (Anderson).—Too much north wind; lack of rain makes orchard work slow; ground quite dry and hard on top. Nothing suffering up this way; grain can stand the dry weather for some time yet. The fruit crop promises to be a large one. Highest and lowest temperatures, 76 and 40 deg.

TEHAMA (Red Bluff).—Grain in fine condition. Fruits of every description never were so thrifty. In the lower part of the county rain is needed. Highest and lowest temperatures, 79 and 44 deg.

SUTTER (West Butte).—Wheat and barley on summer-fall-wed land looks fairly well; late winter-sown poorly. Orange and apricots unusually full of blossoms. Highest and lowest temperatures, 73 and 50 deg. (Yuba City).—Early-sown and summer-fallow grain resisting the drouth very well; late-sown showing bad effects. No injury to fruit as yet. Our county resists drouth well, but are unable to state the effect of no more rain, as no season like this has been recorded since the fruit interests assumed such large proportions. Early vegetables are suffering; berries all right. Rain will not be of much benefit unless it comes soon.

YUBA (Wheatland).—Grain looks well and promises a good yield, especially summer-fallowed. North winds baking the surface of the ground; a good rain would be beneficial. Cherries and apricots promise a heavy yield. Hops are making vigorous growth and are earlier than last season. Highest and lowest temperatures, 83 and 42 deg.

AMADOR (Oleta).—Fruit and nut trees well set and uninjured; summer-fallow grain doing well; winter-sown not so good. All crops need rain.

PLACER (Auburn).—Fruit crop, excepting apricots, promises a large yield. The grain crop in lower end of county will be excellent; a fair yield without rain, but a much better one if rain comes soon.

EL DORADO (Georgetown).—Fruits looking well; unless late frosts make their appearance our foothill fruit yield will be large. Rain badly needed for grain and garden stuff.

SACRAMENTO (Folsom).—The fruit crop will be a large one. Apricots will be a large yield. All early fruit will be large crop. (Walnut Creek).—Very dry; much need of rain; fruit advancing rapidly.

ALAMEDA (Niles).—Late-sown grain very backward; hay crop will be short; apricots and peaches full crop; almonds too soon for prediction. Late frosts in March near Pleasanton killed the crop of almonds. Cherries in full bloom; ground crusted badly and very difficult to work.

HUMBOLDT (Eureka).—Season backward. Ground yet too wet in places. Prospects never brighter for fruit and grain. Cold weather in February and March kept back the bloom on fruit trees till now. Damage from frost is over. Feed good and plentiful. Rainfall for season 50 inches.

MENDOCINO (Covelo).—Rainfall to date 43.66 inches. On account of excessive rains, grain is now being sown that should have been sown earlier. Early-sown grain injured by the wet, that on high ground is looking well. (Ukiah).—Vegetation has come forward rapidly, but there is beginning to be felt a want of rain, on account of surface drying up too fast for good of the crops. Fruit trees generally in bloom, but not so early as usual. Highest and lowest temperatures 74 and 35.

LAKE (Upper Lake).—Rain is needed very much, as orchards, vineyards and summer fallow are too hard to plow. Pastures are looking well, but are not making the growth they should. Highest and lowest temperatures 79 and 39.

SONOMA (Forestville).—Grass backward and feed short. Early-sown grain looking well. Alfalfa making rapid growth. Present prospects indicate a heavy fruit crop. Highest and lowest temperatures 76 and 40. (Bennett Valley).—Orchards in bloom and the

that co-operation or anything else will enable the raisin business to pay interest on land bought at boom prices. As a test I spent one or two days getting stock for the State Exchange from growers having from 20 to 80 acres, all of whom believe in the Exchange and wish to help it. In the older colonies, where land was bought at from \$30 to \$50 per acre, and the improvements modest, the majority that we called on were able to subscribe moderately, but enough, and pay the required 25 per cent then and there; but in some newer districts, where land was bought at from \$100 to \$200 per acre and largely mortgaged, while I found the disposition to help even greater, I also found cash for ready payment almost absent. The people of course were exactly alike. Hence I conclude that those who are able to consider their raw land worth say \$50 per acre are as well off as other agriculturists this year, while those who by reason of mortgages are compelled practically to yet buy the land at the boom prices are in distress. These are the facts as nearly as I can find them. Those who have land to sell will not like to have them published, and may dispute them; those who contemplate buying ought to know them; so, I think, ought those who are wearing out their lives in hopeless struggle, and there are some such. If the exact truth is not known, I think the danger is that the reaction will be even more unreasonable than the boom, and that those compelled to sell will be unable to get even actual values. The raisin interest will always be an important one; vineyards will always be changing hands, as it is extremely desirable to all parties to know what is a fair price to ask and pay. I think the danger just now is that vineyards will have to be sold as much below their real value as they formerly brought above it.

The depressed condition of the market during the past two years has, as is well known, induced a strong disposition toward co-operation among the growers. The first aims in this direction were exceedingly ambitious, being nothing less than a straight combine among growers to insist on a fixed price for raisins in the sweat-box. This failed, as all such attempts must fail. Indeed, dealers mostly refused to buy raisins at all for packing, but would only receive to pack and sell for account of the growers. Last year the growers were somewhat more moderate, not insisting on sales in the sweat-box, but individuals and commission packers united in an agreement to sell only at certain fixed prices, which promptly went to pieces, as all co-operation based on mere compacts must. All growers and dealers insist that everybody else broke the agreement first, but it appears to have been neck and neck.

This year for the first time the largest growers have taken an interest in co-operative work. Those who are in debt are beginning to suffer with their weaker brethren. These growers, however, being entirely new to co-operation, were entirely ignorant of the possibilities in that direction, and yet by their influence have been able to dominate the movement. The measures which they have favored, if carried out, would be effective, but they have either required money from growers which growers did not have or proposed to pay for the use of money an enormous price under contracts running for a term of years, and which any one who had actually worked among small growers for such purposes would know would not be signed.

The simple and economical methods of organization which the State Exchange has adopted are now universally favored, I think, by those who understand them; and if the work of the Exchange had not been crossed by other plans involving an assurance of private profit to individuals who are not growers, an organization which would have accomplished all that can be reached at the first step would be well under way. But the people are impatient and are easily led to consider plans which propose to remedy everything at the first bound and restore prosperity at once, which is impossible. The Exchange in its work there has been patient and stood ready to be helpful in promoting any plan which the people believed in and which did not contravene our fundamental principles that the growers should control their own business and reach out for financial independence of dealers. One by one the proposed panaceas have been found unworkable, and the simple plan of local organization in connection with the State Exchange, as a preparation for more effectual work when experience has shown them how, is coming to be understood as the only thing possible. The people there have certainly been educating themselves faithfully, and I am satisfied will finally learn to work together. Outside of Fresno county the sentiment is all in favor of firm local organization in connection with the State Exchange, and the work is progressing as fast as the active persons in the different neighborhoods get such knowledge of details as enables them to move. In Fresno county the people, of course, are the same as elsewhere, but have been so bedeviled by conflicting propositions, all promising immediate prosperity, that they have become wholly unable to disentangle them or know which is which. Fresno is a noble county and will come out all right.

One of the pleasant meetings I have attended was at Orosi, in the "Smith mountain country" in Tulare county, where there is as intelligent a community as one would wish to see, settled upon a delta of as rich land as there is in the State. They are alive to co-operation and desired me to remember them, as I had opportunity, to the RURAL PRESS, which they swear by. I am delighted to comply with their request.

EDWARD F. ADAMS.

Poisoned Figs for Bud-Eating Birds.

TO THE EDITOR:—The most effectual remedy against birds that eat fruit buds is to take dried figs, cut them in two pieces lengthwise, and on the seed dust strychnine. Then hang the figs thus poisoned about in your trees. This is the most effectual remedy, if properly done, I have ever seen used.

C. J. BERRY.

Visalia.

AMERICAN COTTON-SEED does not succeed in the experiments conducted in India under government auspices. They propose now to experiment with seed from other regions of the earth.

promise for fruit is good. (Sonoma).—The warm weather is beneficial to all crops. Hay, grain and pasturage in this valley have a good start and a heavy yield is assured. An exceptionally fine fruit crop will be raised in this valley.

NAPA (Napa).—Crops looking well in this valley. Grain growing fast, but would be much benefited by copious showers. Fruit crop promises to be abundant.

SOLANO (Elmira).—No rain means short crops. (Dixon).—Indications show that this county will have the best fruit crop in years, as the March frosts did no perceptible damage to fruit.

SANTA CLARA (San Jose).—There has been 90 per cent of sunshine during the week, with one cloudy and one foggy morning. There were four light frosts, but they did no damage to crops. The seasonal rainfall is very low (10.50 inches). No crop is suffering for want of moisture. Highest and lowest temperatures 75 and 33. (Mt. View).—A little rain would help the crops, but they are not greatly in need of it in the mountains.

MONTEREY (Gonzales).—Rain is needed, and needed badly.

SAN LUIS OBISPO (Arroyo Grande).—Weather dry, and with two days of north wind has had quite a bad effect on crops, and especially on feed in the hills and small valleys. Rain would save most of the crops, and also help feed. Valley bean-raisers are irrigating for beans. Fruits show a good prospect. Highest and lowest temperatures 76 and 50.

SAN BENITO (Hollister).—The weather dry and warm throughout the county, causing vegetation of all kinds to grow rapidly. More rain must fall to insure the grain crop. Hay and fruit crops are reasonably assured. Crops in this vicinity are not suffering to any extent as yet, but in the southern part of the county they are suffering for want of rain. An inch or more would be of great benefit.

SAN JOAQUIN (Lodi).—Grain needs rain. Fruit trees two weeks late in blooming. Almonds, apricots and peaches full of young fruit. Apples and pears shedding their bloom. Grapes budding. Pasturage short and requires rain. Ground too dry and hard to put in good condition for melons. (Bethany).—Warm weather with north winds has had a bad effect upon the crops, and if the present weather continues two weeks there will be no grain and but very little hay.

MERCED (Los Banos).—Seasonal rains light. The heavy north winds dried the ground very much. Nearly all the grain outside of the canals is so stunted that rain would be of little or no benefit.

MARIPOSA (Mariposa).—Grass and grapes need rain; both look green and fresh. With rain in ten days crop would be an average; grass, however, will be short. Fruit crop very promising. Highest and lowest temperatures, 74 and 47 deg.

FRESNO (Fresno).—Wheat on west side about gone and on east side of valley suffering from drouth. Cut worms destroying almond and peach buds. Apricot buds killed by the strong winds and frosts of March. Other fruits doing well. Highest and lowest temperatures, 82 and 41 deg. (Caruthers).—Winter-sown wheat not yet affected by the drouth, although rain is needed to make good crops. Dry-sown is almost a total failure; the winds do a great deal of harm. Highest and lowest temperatures, 80 and 50 deg.

MADERA (Madera).—Grain suffering very much for want of rain, but the fruit outlook is most excellent.

TULARE (Tulare).—The fruit crop in this vicinity is not as much injured as at first supposed. There will be a good deal of fruit on the old orchards. (Visalia).—North winds, very dry, and all crops are suffering for the want of rain, the latter being 2½ inches short for this season. Highest temperature, 79 deg.

KERN (Tehachapi).—Cold spring has retarded all crops. Cereals are not more than three inches high. A large acreage sown, and, with the usual spring rains, will bring them forward rapidly. Fruit trees leafing. (Rosamond).—Crops backward. Trees and vines doing well; never looked better at this season of the year and setting very full of fruit.

LOS ANGELES (Nee Nach).—Crops in this section of Antelope valley look well. Season two weeks later than last year. One copious rain this month will insure good crops. Prevailing north-west winds prevent scorching. (Los Angeles).—Dry weather continues. Grain greatly in need of rain. Deciduous fruits promise well. (Pomona).—Grain and hay crop bids fair to be a total failure; very little will be worth anything even if rain comes at once. Fruit-growers are irrigating their citrus and other fruits. Highest and lowest temperatures, 88 and 42 deg. (Colegrove).—Early-sown barley and volunteer barley and oats beginning to head. Crops will be light. Corn, pumpkins and melons being planted. Everything looks fresh and green yet.

VENTURA (Hueneme).—The continued dry weather is not proving very favorable for barley, and in some places there is but little chance for hay.

SANTA BARBARA.—The dry year, if it lasts, will injure barley and feed; fruit trees will not suffer to any great extent.

RIVERSIDE (Arlington Heights).—Rain has held off so long now that the grain is coming on very fast and in many places is heading, though but a few inches high. Rain now would help late-sown grain, but on those ranches depending on rain for a crop the prospect is very poor. All our orange and lemon trees are in a good condition of vigorous growth; irrigation necessary this year earlier than usual. (Winchester).—Unless this section is favored with a soaking rain within the next two weeks the growing grain will be badly injured and the crop a very short one.

SAN BERNARDINO (Chino).—Average temperature 59 deg. Foggy mornings, followed by clear days and some clouds, gave hopes of rain, but none has fallen. Barley will be a very short crop, in many places not more than one-half on account of the drouth. Sugar beets on the upland will suffer if rain does not come soon.

SAN DIEGO (Escondido).—The grain crops are still in a flourishing condition.

Faster Fruit Trains Promised.

G. W. Luce, general freight agent of the Union Pacific, said to a reporter on April 7th that the improved fruit-train service, so greatly desired by the California growers and shippers, has been practically decided upon.

"Fruit trains will be run this season in 120 hours, or five days, from Sacramento to Chicago," was the gratifying assurance. "That will be the schedule time, and we shall make no discrimination between ventilator cars and the heavier refrigerator cars. Our expectation is that the improved service will, to a great extent, dispense with the use of refrigeration. This is the Union Pacific's position in the matter."

"It would be much better for all concerned if the fruit could be laid down in Chicago without refrigeration. After it has been on ice it does not keep well when exposed to the heat."

"The fruit-growers are sensible in saying they need faster service rather than reduced rates of freight. And the Union Pacific has always been willing to do what is reasonable. The new service will be over the Central and Union Pacific, and by either the Northwestern or the Milwaukee line from Omaha to Chicago. I presume the formal announcement will be made shortly, as the schedule has been fully arranged by the different roads concerned."

The farm in Kentucky where Abraham Lincoln was born has been bought by a syndicate, and the old cabin where Nancy Hanks Lincoln gave birth to the future President will be restored as nearly as possible.

THE FIELD.

Beet Sugar Interest in the United States.

The production of beet sugar is now receiving so much attention in this State that many readers will be profited by a general review of the industry in this country and a descriptive narrative of the ways and means employed. Dr. H. W. Wiley, who is at the head of the Division of Chemistry of the Department of Agriculture and has immediate charge of the sugar experiments and investigations made by the Government, has the following admirable article, of the scope indicated above, in the April issue of the *Engineering Magazine*:

The beet-sugar industry in the United States is in its infancy, there being only seven manufactories of this product in operation in this country. The oldest of these, at Alvarado, California, was erected about 15 years ago, and has been operated every year since. The factories next in order in seniority are those at Grand Island, Nebraska, and Watsonville, California. Still younger than these, by one year, are the factories at Norfolk, Nebraska; Lehigh, Utah; and Chino, California. The youngest and smallest of the factories, located at Staunton, Virginia, has been operated only one season. The increase in the rate of beet-sugar production in the United States during the past few years is shown as follows:

	Pounds.
In 1887.....	600,000
In 1888.....	4,000,000
In 1889.....	6,000,000
In 1890.....	8,000,000
In 1891.....	12,004,838
In 1892.....	27,083,288
In 1893.....	43,648,797

The next table gives the production, during 1893, at the different factories, as follows:

	Pounds.
Staunton, Virginia.....	36,458
Grand Island, Nebraska.....	1,835,900
Lehigh, Utah.....	3,750,000
Norfolk, Nebraska.....	4,000,000
Alvarado, California.....	4,486,572
Watsonville, California.....	14,500,000
Chino, California.....	15,036,867

The amount of capital invested in the seven beet-sugar factories is about \$2,000,000. Tributary to these factories, under cultivation in beets, are about 20,000 acres of land. The value of this land has greatly increased since it has been used for beet-growing, especially near Chino, California, where the price per acre has become very high, as much as \$200 having been paid in some cases. The cost of cultivating this land in beets is considerably more than \$500,000 a year. The production of beet roots for sugar-making purposes in the United States during the past year approximated 200,000 tons, and the average price paid to the farmers for this raw material was \$4.50 per ton.

It will be seen that a large investment of capital in land and machinery and a large outlay of money for labor are needed to produce a little over 200,000 tons of sugar per year. It is not difficult to foresee the large amount of capital that would be absorbed, the immense amount of labor that would be employed, and the great extent of land that would be placed under cultivation, if even half of the sugar consumed in the United States were made from beets grown within the country. The yearly consumption of sugar in the United States is now approximately 2,000,000 short tons, while the total production of all kinds of sugar—beet-root, cane, maple and sorghum—is about 300,000 short tons, showing that a little less than one-sixth of the total amount consumed is produced at home.

The manufacture of beet sugar in this country is a matter for serious consideration. By reason of the restricted area suitable for the cultivation of sugar cane, it is not to be expected that, under the most favorable conditions, the production of cane sugar in Louisiana, Texas and Florida will ever largely exceed 1,000,000 tons. On the other hand, there are no limits to the possible amount of beet sugar which can be manufactured.

BEET FARMING IS HIGH-CLASS WORK.

The production of sugar beets is of itself an art. The ordinary forms of agriculture cannot be used for this purpose. Sugar-beet culture is in every sense intensive, and not extensive, farming. High-priced lands can be used for sugar-beet culture on which it would be impossible to grow profitably the staple crops. Intensive culture, high fertilization, and scientific care in every respect characterize successful beet-sugar culture the world over. The sugar beet requires a deep mellow soil, perfect tilth, entire freedom from weeds and grass, and a great deal of hand-culture. The sugar beet absorbs large quantities of water in its growth; it is fond of potash and phosphoric acid, and is not averse to nitrogen. It is a crop which should not be grown more than once in four years upon the same field, and this field, by judicious rotation and fertilization, is brought during this time into perfect condition again for the production of a maximum crop of beets. The establishment of beet-sugar culture in a community gives an object-lesson in the highest art of agriculture. It acts reflectively upon every other branch of agriculture, so that in countries which grow sugar beets there are better crops of wheat and maize, of barley and hay; there are better classes of live stock, finer horses and cattle, and in general the whole tone and character of agriculture are elevated by reason of the influence, direct and reflexive, of the culture of the sugar beet.

The sugar beet has been brought to its present state of efficiency by the application of scientific principles of culture in the production of seed. The mother beets selected for seed the previous year are chosen on account of their perfect form and size. They are preserved during the winter in silos. In the early spring they are removed and a diagonal core taken from each one is analyzed. The

beets are in this way separated into grades; those showing above a certain percentage of sugar forming the *elite* or first grade, those falling within another class the second grade, with a third class lower, while all those which fall below the standard fixed for the lowest grade are rejected. Little has been done in this country in the way of the production of beet seed, but for three years the United States Department of Agriculture has grown the highest-grade seeds at its station at Schuyler, Nebraska, in accordance with the principles set forth above. The careful experiments undertaken by the Department at this station at Schuyler have shown that beets quite equal to the best grown in Europe are easily produced in the United States.

HOW THE BEETS ARE HANDLED.

The sugar beets, which mature in September or October, are carefully harvested, and the foliage, with a portion of the neck of the beets, removed by a knife. Each beet must be handled separately for this purpose. A portion of the top of the beet is removed because that portion contains a large percentage of the salts found in the beet. These salts—chiefly potash—exert a very injurious effect upon the sugar juices during the process of manufacture. They are bitter; they unite with any oil which the beet may contain and form soap, and they prevent large quantities of sugar from crystallizing.

The sugar beet, having been brought to the factory prepared as above, is passed through a long trough by means of a screw, through which water flows in the opposite direction from the movement of the beets. The beets are thus thoroughly cleaned, all fragments of soil and pebbles being detached therefrom. Thorough washing is highly important, since the presence of sand, or soil, or grit of any kind upon the beets when they reach the cutting machine rapidly dulls the knives and produces bruised and imperfect cuttings. The beets, having been washed, are elevated to a cutter immediately over the diffusion battery. This cutter is a horizontal disk, carrying several corrugated knives. These knives slice the beets, usually into V-shaped pieces, so that, when placed in a trunk, water may freely circulate among them.

The beet cuttings, called "cosettes" or "schnitzel," are next conducted to the diffusion battery—a piece of apparatus designed for the extraction of sugar by means of the osmosis of the sugar juices with the water which is brought into contact with the beet cuttings. The diffusion battery consists of from 12 to 14 cells so arranged that a liquor can be passed at will from one to the other and drawn off from any one of them at any time. The hot water which is used for the extraction passes from one cell to another, becoming more and more charged with sugar juices. When it has passed through a sufficient number of cells—usually 10 to 14, according to the size of the battery—it reaches finally the cell last filled with beet cuttings, and from this it is drawn off into a measuring tank. When the battery is once filled its operation is continuous, one cell being filled with cuttings and the exhausted cuttings being discharged from another every time a portion of juice is drawn into the measuring tank. The exhausted pulp is passed through a press by means of which a large portion of the water is forced therefrom, and the residue makes a most excellent food for cattle. This ration, however, is not a well-balanced one, and certain nitrogenous and fatty bodies are mixed with it in order to make a perfect food. Oil cakes are very suitable for mixing with exhausted pulp for this purpose.

The sugar juices, withdrawn from the battery as above mentioned, are passed into large tanks, where they are saturated with lime, from one to three pounds of which are used for each hundred pounds of juices. The temperature of the mixture is then raised gradually, and meanwhile a stream of carbolic acid is blown through the mixture. By this treatment the lime is precipitated as carbonate of lime, carrying down with it a large portion of the impurities originally contained in the beets. Beet juices, when first extracted, are usually of a dark, almost inky color. After treatment with lime and carbon dioxide in the manner above described, they are usually perfectly brilliant and of a beautiful amber tint. After the lime is all precipitated the juices are passed through filter-presses, on the cloths of which the lime and impurities are retained while the bright juices run through. A second treatment with lime and carbon dioxide is uniformly employed, and sometimes a third, in order to secure sugar juices of high purity. The carbon dioxide used for this purpose is derived from a lime-kiln in connection with the factory, which also furnishes the lime necessary for the precipitation of the impurities.

The purified juices, treated as above described, are next conducted to a multiple-effect evaporating apparatus. Here the juices are concentrated to syrup, the vapors from one of the multiple effects being used to boil the liquor in the second, and the vapor from the second being used to boil the liquor in the third. When this apparatus has two pans, it is called a double effect; when three, triple; they rarely contain more than four, while three is usually the number found.

The syrups, treated as above, if only raw sugar is to be made, are carried directly to the vacuum-strike pan. Small quantities of syrup are first taken into the pan and reduced to the crystallizing point. When fine crystals of sugar appear, additional portions of the syrup are drawn into the pan, continuously or from time to time, and the small microscopic crystals first formed begin to grow to the required size. The operation usually requires from three to sixteen hours, according as the pan is a quick or slow-boiling one.

The sugar thus crystallized during the process of boiling is removed from the pan into a mixing apparatus, where it is thoroughly mixed by means of revolving arms. It passes then directly into the centrifugal apparatus, which, having perforated sides and revolving with great rapidity, quickly removes the molasses from the crystals, leaving the latter in a very dry form and suitable for transmission to the refinery.

In some beet-sugar factories the refining is done during the process of manufacture. In this case the syrups, before concentration, are filtered through bone-black or satu-

rated with sulphurous acid. By these methods a pure white crystal of sugar is obtained, which, on being dried in a granulating apparatus after coming from the centrifugal, forms granulated sugar.

The molasses which is obtained by the above process is reboiled, and a second crop of crystals obtained therefrom. The molasses from this second crop of crystals is reboiled, placed in tanks, and left to stand for five, six or even eight months, at the end of which time another crop of crystals, dark and mushy, has been formed, which can be separated by the centrifugals in the usual way. The final molasses, which contains a considerable quantity of sugar, is used either for distilling purposes, for fertilizing purposes, on account of the large amount of potash which it contains, or it may be subjected to treatment with freshly burnt and ground lime, at a low temperature, in which way the sugar which it contains is precipitated as sucrose of lime, from which the other impurities can be separated. The sucrose of lime can afterward be beaten up with water into a paste and the lime precipitated with carbon dioxide as above described for purifying the juices. In this way almost all the sugar which was present in the molasses can be recovered.

The manufacture of sugar is a continuous process, *i. e.*, the operations go on day and night. It is probably 24 or 48 hours from the time the beets enter the factory before the crystals of sugar secured therefrom appear, and the process is of such a nature that it cannot be broken except, usually at the end of a week or two weeks, when the house is shut down for repairs or renovation. An ordinary beet-sugar factory has a capacity for the consumption of about 250 tons of beets per day, and should make from 200 to 240 pounds of sugar per ton. In Europe, larger factories are very common, capable of working from 400 to 600 tons of beets per day. In central factories there is a large number of diffusion batteries situated at different points, in which the juices are extracted. From these different places the juices are delivered to the central factory by means of pipe-lines, usually laid under ground. A central factory of this kind will be found able to take care of the juices from 1000 tons of beets per day.

Every one who desires to see the prosperity of American machinery, American ingenuity and American agriculture should favor the development of the beet-sugar industry. There is no other way in which the plethora of agricultural products can be so readily relieved and renewed prosperity brought to our agricultural interests, thus stimulating every other interest in the land. The total consumption of sugar in the civilized world is not far from 7,000,000 tons, of which the United States uses two-sevenths. Of the 7,000,000 tons, over 4,000,000 are made from sugar-beets. It is thus seen that in the race for the markets of the world the sugar-beet is already ahead of its most dangerous rival, the tropical sugar-cane. There is room, however, for both these sugar-producing plants, and there is reason to believe that, with favorable conditions, a great indigenous sugar industry, including cane and beet sugar, can be established in the United States.

That Russian Thistle.

Terrible troubles are told of the Russian thistle, for the extermination of which the Government is asked by a North Dakota Senator to appropriate \$1,000,000. The pest was taken to North Dakota in the seed grain of some Muscovite immigrants, and has spread within a few years over the Dakotas, Nebraska, Iowa, Minnesota and northern Wisconsin. It is a plant of astonishing vigor and fecundity, growing up and out rapidly "to the size of a sod cabin," shading the surrounding crops and monopolizing the moisture and nutrition of the soil, and then scattering its seed far and wide on every wind. So tough and poisonous are its prickles that men and animals are said to be compelled to wear sheet-iron bootlegs in passing through the thistle fields, and it is related that in Siberia the plant has simply conquered large stretches of land and driven agriculture away from it. Heroic measures are demanded to cope with this scourge, says Senator Hasbrough, and if all that is said is true, such is certainly the case.

THE BOTANIST.

Grass Specialist of the Department of Agriculture.

The recent determination of Secretary Morton to secure the services of a capable agrostologist, whose entire time should be devoted to the subject of grasses, has resulted in the selection of Prof. Frank Lamson-Scribner, who has accepted the position offered to him.

There are no means for estimating with any degree of accuracy the total value of the grass production of this country, but the value of the average hay crop exceeds \$400,000,000; and while no data are available to estimate the annual value of the pasture lands, it is clear that, added to the hay value, a total grass product will result probably more valuable than any other single crop in the country. The importance of collecting and imparting useful information regarding our grasses is therefore evident. The duties of the agrostologist are thus summarized in a letter in which the place was tendered to Prof. Scribner: * * * "The identification of grasses and the investigation of forage plants in this Department * * * To prepare monographs on grasses; care for the grasses of the herbarium; to identify such as may be sent here for that purpose; to conduct correspondence on this subject, and to have charge of any special investigation of grasses and forage plants which may be undertaken by this Department."

The manner of Prof. Scribner's selection for the place testifies strongly to the high place he holds in the estimation of the leading botanists in the country. As soon as the creation of the place was decided upon, letters were

addressed to 24 of the leading botanists in the country, advising them of this intention, and they were invited to suggest the names of persons whom they regarded as best fitted for the place. Ten of the parties so addressed replied recommending Prof. Lamson-Scribner, and four others speak of him as the right man provided his services could be secured.

Prof. Scribner, who is now director of the Tennessee Agricultural Experiment Station and Botanist, was born in Massachusetts in 1851. His family name was Lamson; but, having early lost his parents, he was adopted into a family of the name of Scribner, living near Augusta, Maine, and there he was brought up. From his youth Prof. Scribner showed his natural bent for botanical pursuits. At the age of 18, while still on the farm, he prepared a treatise on the "Weeds of Maine," an illustrated pamphlet of 62 pages, prepared for the State Board of Agriculture, and his first botanical collections, made in 1866-67, were acquired by Bowdoin College.

In 1870 he entered the State College of Agriculture and the Mechanic Arts at Orno, from which institution he graduated in 1873 with the degree of B. S. In May, 1885, Prof. Scribner was appointed Assistant Botanist in the Department of Agriculture and later became Chief of the Section of Pathology. Prof. Scribner is a member of a number of scientific societies, and in 1889 he received from the French Government, for his services in matters pertaining to viticulture and the diseases of the vine, the Chevalier's Cross of the Order of Mérite Agricole. He has written extensively upon botanical subjects, and especially on grasses, and has one of the largest private collections of grasses in the country, numbering nearly 5000 specimens.

Showy Plants.

Mrs. Theodosia Shepherd has written for the *California Cultivator* the following interesting notes:

About the middle of December the most gorgeous plant to be seen in California is *Poinsettia Pulcherrima*. It might be called a most gorgeous tree, for in size here it is a tree. It is not uncommon to see it 10 feet in height, with a spread of 15 feet. The branches of these large plants are numerous and each one is terminated with bracts of the most intense and brilliant scarlet, the largest of which measure from 15 to 18 inches across. They bloom for three months and are invaluable in our gardens, having a brilliant effect and bloom most profusely when other flowers are scarce.

They are popular for decoration and ship reasonably well. When withered, if they are put into hot water they will revive and keep fresh a day or so. The plant is the sumac of the Western States. After losing its foliage it should be cut back to within a few eyes of the old wood. It grows readily from cuttings, which here can be started in the open ground. On large grounds it is very effective planted in groups.

There is a double variety which bears brilliant rosettes of floral bracts the same as the single, but much more beautiful. It is very rare. There are two or three of the single varieties, the difference between them being in the size of the bracts and variation in the shade of coloring. There is also a white variety which I have not seen, so that I cannot say how it compares with the scarlet. The stem of the *Poinsettia* on the large plants often measures from 12 to 15 inches in circumference.

Another plant remarkable for its handsome red flowers, a summer bloomer, is *Erythrina Christi Galli*, or coral tree. It is deciduous and rests three months during the winter. The flowers are very large, pea-shaped, brilliant red shaded with maroon. They grow in spikes not infrequently measuring two feet in length in large specimens. When in full bloom this splendid tree is a most striking object. It is propagated from seed or well-grown cuttings. A seven-year-old plant from seed, if full grown, will form a tree measuring 18 inches in circumference, 12 feet in height, with a spread of 20 feet. It should be trimmed back every year, thoroughly cultivated and the soil enriched, as should all plants of strong growth.

Nandania Domestica is a very beautiful shrub with ternately compound leaves growing around a central shoot, at first of a beautiful dark red color, and afterward changing to a dark green. Sometimes the young growth is green, shaded with brownish yellow, and the plant has at all times foliage in different stages of growth, and even so that the effect is very striking. The foliage is very pretty for bouquets, is very handsome pressed and is fine for decoration. The flowers are in terminal compound panicles, white, with yellow anthers, and the plant is said to have red berries about the size of peas, though I have never seen them. Its habit is quite peculiar, every shoot coming direct from the root to the height of several feet, like canes. It never has any branches, so that it is very circular in growth and always symmetrical. It is a native of China and Japan, where it is grown very extensively. It was first introduced to cultivation in 1804. It is propagated from cuttings of the well-ripened wood or by shoots which it throws up every year. In this way it spreads, but not very rapidly. It is rarely seen in gardens. It is quite hardy here, and never affected by cold weather. It is liable to be troubled by scale if not watched with care and properly cultivated and thoroughly watered at intervals.

No insects infest *Poinsettia* or coral tree, which is greatly in their favor. I have never known the *Poinsettia* to seed in this country, though I notice seed is advertised in foreign catalogues.

Wild Flower Exhibit at Midwinter Fair.

The California State Floral Society will hold a Wild Flower Show in the show-room on the horticultural floor from April 19th to the 21st, inclusive. The committee in charge state that they will receive and install exhibits from all parts of the State.

Wells, Fargo & Co., upon application, will carry pack-

ages of wild flowers for this exhibition free of charge to the San Francisco office, provided they do not exceed 20 pounds in weight.

There will be no charge for space.

COMMITTEE IN CHARGE.

Mrs. O. E. Babcock, 2615 San Jose Ave., Alameda.
Mrs. L. O. Hodgkins, 3410 Sacramento St., S. F.
Mrs. L. E. Wiester, 2933 Folsom St., S. F.
Mrs. W. Chandler, 213 Duncan St., S. F.
Miss Ella F. Bailey, 214 Ashbury St., S. F.
Mrs. Helen A. Cross, 718 Waller St., S. F.
Mr. H. B. McGowan, Box 131, Oakland.
Prof. E. J. Wickson, Berkeley, Cal.
All communications regarding the exhibits should be addressed to members of the committee.

THE GARDEN.

Vegetables Under Glass.

Although our mild winters make it possible to grow in the open air in California many vegetables which require heat and glass at the East, there are still strictly tender vegetables which can often be profitably produced out of season by use of heated greenhouses near our larger towns. In case any of our readers may desire notes of the latest forcing ways and means at the East, we quote from an essay recently read before the Massachusetts Horticultural Society, by W. D. Philbrick. Of course, in this State we do not need such complete protection against cold, nor do we need to build houses strong enough to sustain snowfalls and blizzards; still, Eastern experience will be found interesting and suggestive.

In his essay Mr. Philbrick said that practically most of the present large business in this line has grown up within the last 50 years. The first use of glass for vegetables was by Solomon De Caus, at Heidelberg, a winter storehouse for orange trees with glass sides, but it had an opaque roof. This was in 1619. In 1664 a house like the Heidelberg orangery was built at Chelsea, England, for fruit trees. Another of like character was erected in New York in 1764.

The hot bed is very simple in construction and was long in use for growing vegetables before it was thought practicable to grow them in greenhouses. The hot bed has the advantage over the early style of greenhouses in giving plants more air and thus preparing them for removal to open ground.

In the vicinity of Boston gardeners have grown lettuce for the New York market during the past 50 years, and it is probable that more than half the crop now grown in this district is consumed in the great metropolis. The hot-bed system was the main dependence as long as the necessary amount of horse manure could be had. About 28 years ago gardeners in Newton and Belmont began experimenting in greenhouses built of hot-bed sash, and nearly as flat roofed as hot beds. Others experimented in regular greenhouses, and found that as good crops of lettuce and cucumbers could be grown in higher-roofed structures as in low ones. The greenhouses are heated with hot water or steam, and manure is required only as a fertilizer. Although the hot bed is used more now than ever before, by far the larger portion of the crops for the past 20 years has been grown in greenhouses.

The hot beds are prepared in November. The site should be one well drained, and if it has a gentle slope to the south or southeast it will be better. A tight-board fence, 6½ feet high, and slanting one foot to the north, should be built along the north side of the range. The land south of the fence should be enriched with fine manure or chemical fertilizer, harrowed until thoroughly fine, and so graded that the surface shall slope a little from the fence, but be nearly level from east to west. The plank for the sides should be of pine, spruce, or cypress; that for the north side 2x12 inches, and for the south, 2x10 inches. The former is set two feet from the fence and held in place by stakes driven into the ground outside the plank, then nailed to them. The plank on the south side must be set exactly six feet, outside measure, from that on the north side, and so adjusted as to be about four or five inches lower than the other; that is, sufficient for drainage. Braces will be needed every ten feet, to keep the planks from springing. Earth should be banked against the outside of the plank to within five inches of the top, and before the ground freezes the whole should be covered with straw, coarse hay, or coarse manure, to prevent freezing until the bed is required for use. When that time comes the covering is removed, and the soil thrown out to the depth necessary to accommodate the required "heat" (hot dung) and soil, and leave room for the plants under the glass. The "heat" varies from 6 to 14 inches deep, and the loam from 6 to 8 inches, according to crop and season.

The greenhouses now devoted to these purposes are built, some of them, 50 feet wide and 400 feet long; the roofs have a pitch of 20 to 25 degrees, and the ridge is 20 feet above the beds. The materials now prepared for roofs are cypress-wood sash bars, supported by iron-pipe posts, and covered with 18x24 plates of glass. The amount of glass in hot beds and greenhouses within ten miles of Boston now used for forcing vegetables is probably about 15 acres. Nearly four acres are found on the farm of Warren W. Rawson, in Arlington. In the larger establishments the heating is done by steam; in the smaller by hot water. The former require a night fireman to attend to the boilers. Bituminous coal is used, which is not only lower priced, but will produce more speed per ton than will anthracite coal. The fire, to be worked economically, should have a strong draught, and frequent additions of coal.

By this system the larger part of the heating power of coal is utilized, but with a slow fire much heating power goes up the chimney as carbonic oxide, and is lost. However, on smaller places, where the saving of heating power

will not pay the wages of a night fireman, a slower fire of anthracite coal is preferable. In steam heating especially, the relative elevation of the radiating pipes above the boiler, necessary to secure continuous circulation, must be carefully determined, as the water from condensed steam, if not quickly returned to the boiler, will be liable to over-balance the steam pressure. Two feet head of water will offset one pound of steam pressure; but the steam pressure constantly loses power as the distance from the boiler increases.

The vegetables forced for market are the following, which are named in the order of importance: Lettuce, cucumbers, radishes, dandelions, beets and beet greens, parsley, mint and cress. Mushrooms are also largely forced, but not under glass, dark pits being used for this purpose. Lettuce is by far most largely grown and used. Most establishments produce two or three crops each winter, followed by a crop of cucumbers. The immensely increased annual demand has fully equalled the supply until this season, when the general depression of business and consequent decrease of incomes among those who have usually bought these delicacies, together with the unusually good supply from Southern growers, has forced the prices below the cost of production. But this is a temporary condition; already the reaction has set in, and probably the near future will bring an equivalent return.

Experiments With Celery.

Professor Coote, of the Oregon Agricultural College, gives in a recent bulletin an account of his experimentation with celery in 1893. His plants were started in a forcing house. As soon as the third leaf appeared the plants were pricked out into flats or boxes, three inches deep and twelve inches wide, which were kept in the house for a month. The last of April they were put in a cold frame to harden for two weeks. At the expiration of this time the plants were transferred to a well-prepared and well-moistened bed, where they were set four inches apart, rows being six inches apart, the tap root being shortened. The plants were liberally supplied with water, and after some days were transferred to ground spaded fifteen inches deep, in order to permit water to drain through.

For rows Nos. 1 and 2 trenches ten inches deep were dug and in them placed three inches of well-rotted stable manure mixed with hardwood ashes, one part to five. This compost in the ditch was then spaded to the depth of five inches, thus mixing the eight inches of compost with two inches of soil. This being completed the plants were set out twelve inches apart, in a single row. The ditches were four feet apart, thus affording plenty of room for earthing up. Each row contained fifty plants.

Row No. 3 was given a top dressing of loam, ashes and manure in equal parts without any apparent results.

Row No. 4.—The trench was dug out thirteen inches deep, and six inches of fresh cow manure well spaded into the soil at the bottom of the trench. Much better heads were obtained by this treatment, the plants made a much more rapid growth, and were of better quality.

During the dry season plenty of water was given, never permitting the plants to become dry. Under this treatment a good growth was kept up during the season.

Golden Yellow.—This variety was the first to mature, is good in quality (a few plants rotted during the season), is valuable for early use, as it bleaches very quickly after banking up.

White Plume.—Heads small, requires but little banking up. Matured a few days later than Golden Yellow. The quality is not so good as some others. Its whiteness makes it easy of culture, and it is becoming quite popular for early use.

Solid Ivory.—An excellent variety. Stands winter well without rotting, has a good nutty flavor, is free from stringiness. Heads quite large, valuable for late use.

Grant Pascal.—Resembles the Solid Ivory in flavor and texture; head does not grow so large as the former, but makes a very solid, compact growth; as the season advances becomes quite pithy.

THE IRRIGATIONIST.

Wells and Windmills.

TO THE EDITOR:—Please give us all the information you can through the PRESS about irrigation with windmills, as we need it this year. There have been several good articles in this line recently.—JOHN MARDEN, Estrella.

This is quite in the line we marked out last week, and we expect to pursue it. We shall be glad to have letters from all who are successfully using wells and windmills or other motive powers for pumping. Nothing could be more timely and important. At the moment we happen to have at hand a copy of the *Southwest Texas Magazine* which describes an enterprise of that kind in that region. We quote as follows:

The Kohler & Heldenfels fruit and vegetable farm lies about a mile and a half due west of Beeville. My business with these gentlemen was to purchase several carloads of onions which they had raised by irrigation. Mr. Heldenfels took me out to the farm, and what I saw there was a surprise to me. They had several hundred acres of fine corn on one side of the road, and on the other side are their fruits and vegetables. They have erected a nice residence for their gardener, Mr. W. Maxwell, and his family. Here is the first and only place I ever saw the practical benefits of irrigation in Texas.

Two years ago a large tank was constructed on the farm, capable of holding 700,000 gallons of water. This tank is about 100 feet in circumference and 16 feet deep. The earth was excavated to a depth of six feet, and a ten-foot embankment thrown up. The earth was then packed perfectly solid and the inside cemented. The tank is round

and much resembles an immense washbowl. A well was bored to a depth of 107 feet, at a distance of 30 feet from the tank. A windmill and pump were placed in position, and at every stroke of the piston a gallon of water is discharged into the tank. A similar well was bored a short distance farther from the tank, and a windmill and pump placed thereon with a like capacity for supplying water. It is of good drinking quality, flat in taste, and about as warm as ordinary river water in the summer months, and is pure and clear.

The catch basin or water tank is on the highest point of land, and when water is needed to irrigate, all that is necessary is to open the floodgates. The finest crop, largest yield and best Creole onions ever seen in Texas are now in the field near the tank, and there are several carloads of them. Irrigation on this farm has demonstrated what can be done in Bee county if you will only go down after water about 100 feet, and bring it to the surface with windmills. The tank, well cemented and capable of storing nearly three-quarters of a million gallons of water, cost between \$500 and \$600. The two windmills and pumps placed in position cost say \$150 each. Here we have an outlay of between \$800 and \$900. But look at the results. The land has produced over ten tons of onions to the acre, which at the prevailing price of \$40 per ton on board the cars to-day, is \$400. The crop gathered from two acres of onion seed pays for all the improvements, and the tank has a capacity to irrigate 20 acres.

The experiments of Kohler & Heldenfels will prove of great benefit to the farmers of Bee county. The rain-maker's vocation is gone, and well-borers and tank-makers will henceforth be welcome guests in the homes of men who settle upon our long-neglected and fertile lands.

The Irrigation Movement.

Active preparations are now being made for the next National Irrigation Congress to be held about September 15th, at some point in the West not yet determined on. The last Congress, which was in session about a week in Los Angeles, October, 1893, appointed commissioners in every Western State and Territory, whose duty it is to prepare a report to be submitted to the coming Congress covering all the features of special interest in each State and Territory of the arid West. These reports will show the amount of arid and semi-arid land; the amount of land now irrigated, and the acreage believed to be irrigable; the sources of water supply, developed and possible of development; the cost of procuring, storing, and delivering water on lands; State legislation, in force and needed; national legislation as to the disposition of arid lands and Government control of water sources; and such other points as may suggest themselves to each commission as being pertinent to their own State.

The commission for California is composed of Eli H. Murray, San Diego, chairman; C. C. Wright, Modesto; Will S. Green, Colusa; John A. Pirtle, Los Angeles; L. M. Holt, Los Angeles; Frank Robbins, San Diego, secretary.

The citizens of this State are cordially invited to correspond with any of these gentlemen, and give them such information as they may possess on the points to be covered by their report, as it is designed to cover every point of interest which can be suggested. Information covering the work of the national committee can be obtained from Fred L. Alles, secretary, Los Angeles, California, and information as to the work in this State from any of the commissioners named above.

POULTRY YARD.

Commencing Poultry Raising.

Mrs. Robert Dunn of Garden Grove, Los Angeles county, writes to the *Cultivator* as follows: I have been asked so many times if poultry keeping pays. Of course it pays, if properly attended to. But the one who makes it pay must commence at the beginning, not at the middle or end, as so many do in California. I have had some ask me how I have made it pay. They could not, and yet thought they ought to, because they started with buying 100 good hens, and had their houses and yards made, bought incubators, brooders, feed cutters, bone cutters, and, in fact, every little thing they could buy, and then sat down for those 100 hens to do the work. Then because every one of those hens did not lay every day, and some were taken sick and died, and the eggs did not hatch well in the incubator, the cry is, "What is the cause? I thought I had bought everything that was right and needful; I gave them every kind of feed that was required, and water; I used tonics which I thought were best, and yet I cannot make it a success. How is it?" Why, just because you commenced at the middle or end, instead of at the beginning.

Now, my readers and new beginners, I think it by far the most sensible plan to start on a small scale. As the saying is, "We must learn to crawl first before we are able to walk; then when we can stand firmly on our feet, we can run and, likely, jump." Now, suppose you buy one dozen good, true-bred hens, say of the Leghorn breed, as they are the greatest egg-producers in the world, at least I have found them to be during my experience of 16 years of different thoroughbreds. It costs no more to feed a pen of well-bred fowls than it does the mongrel fowl. Then get a thoroughbred cock, and with those 13 fowls you have a start. Place them in your yard built of laths, six feet high, and 24 feet square, with a house at the back to suit your taste. I say that because some prefer tight houses and some open. For my own use I like one 3x7 feet, and 4 feet high in front, with shake roof, and a 1x3-foot roost, or wider, as I prefer wide roosts—they are a preventative of crooked breast bone. Now, the next thing you need is a few old mother hens, Plymouth Rocks, Brahmas, or Lang-

shans—the older the better, for they will commence to set the sooner. Those you want to keep by themselves, without a male, as you don't want to breed from them—only from your pen of thoroughbreds. By not having a cock with them—the mother hens I mean—if one should, by chance, lay an egg after she has been setting for a day or two, and you have not noticed it, that egg will not hatch, thereby causing you to have a cull and to wonder how it came there when you had been so very particular in setting from your thoroughbred pen. Now, when those old hens are ready to set, get an oil can, open one end of it and put in some fine hay or grass, thus making a nice, cosy nest. Mark your eggs with the day of the month and place your can in front of a square or long coop, and have a board ready to slide in front of the can. Put your eggs inside and get the hen in your arms; talk to and pet her for a little while in order to get her quiet, and then put her lightly on the eggs in the can and push the slide so that she is in the dark for 24 hours or longer; then take the board or slide away and let her come off at will to feed and to water. Just take a peep at the eggs. If she has all things comfortable, leave her for 15 or 20 minutes; then see that she goes on her nest again; if not, you must put her on and shut her in, and after doing it once she will come off and on without your help. It is best to place your nest in a shady, cool location, and do not set too many times in one place, as that will cause you to have mites, etc., and generally they are the commencement of disease.

Now, from those thoroughbred hens you ought to raise nearly 100 pullets the first year; then, you see, by commencing that way, you have not been at a very great expense. In the meantime, you have found out if you like the poultry business. I think you have seen the point and are now an enthusiast and ready to start in with an incubator and brooder on a small scale also. First get an incubator house, also a brooder house—not too expensive nor too cheap an affair—and get some one who understands the incubator thoroughly to help you or to give you advice if you do not understand the directions that accompany the machines. Then you can get the feed and bone cutter; that is all to your own taste. Of course, all those things make work light and enjoyable. Get your yards and houses ready also. Dispose of your mother hens and start in to raise your incubator chicks. If you are, as I hope, a true fancier of poultry, you are not afraid of a little outdoor work, or of getting your hands soiled. I have had a great many complaints that "it is such dirty work." The answer I make is, "a fortune is not gained without some dirty work." Also, you will know what I mean by commencing at the beginning, instead of at the middle or end, or, in plain words, commencing with a California rush, which means that anything done anyhow will do.

I enjoy my business thoroughly, and I am not happier than when out with my chicky-biddies, feeding and tending them. I am very careful to give the growing chicks all the food they can eat without wasting any, and all the good fresh water they require, also keeping their brooders clean.

Roup Remedies.

Roup is the terror of poultry-keepers, being both epidemic and contagious, and in its worst form almost impossible to subdue. Entire flocks of chickens have been exterminated by it, and in the yards which they had contaminated no fowls could be safely kept for a season afterward. In its milder form, however, the disease, if properly attended to, is often manageable, though should the foul be very badly off before it is discovered, it is best to kill at once, as recovery will be slow and tedious.

In the first stages of the disease the fowl seems afflicted with a very bad cold, there is a "villainous rattle" in the throat, a discharge from the nostrils; then a deposit something like that formed in diphtheria appears in the mouth and throat, accompanied by an extremely offensive odor, the nasal passages become clogged, the fowl refuses to eat and soon becomes unable to swallow. Great thirst is manifested, but the affected bird should not be allowed access to the common drinking trough, as it is in this way that the disease is communicated to others.

Almost every poultry-keeper has a different remedy for roup. One of the simplest, and one which I should be inclined to try first, is plain North Carolina tar and honey, equal parts, with a few drops of carbolic acid added. Anoint the mouth and affected parts lightly with the mixture, and put a little at the root of the tongue so that the fowl will be compelled to swallow it. This should be applied every other day, and is said to be a sure cure.

Another remedy highly recommended is this: 4 ozs. sassafras oil, 2 ozs. carbolic acid, 4 ozs. alcohol; when mixed thoroughly, add 10 ozs. of water. This would be sufficient for a large flock, but the proportions could be easily reduced. Choose the warmest part of the day, and first wash the fowl's head and throat thoroughly in water as hot as can be borne, cleansing nasal passages and all as well as possible; then anoint freely with the mixture the head, throat, face and mouth.

A mixture of turpentine 1 oz., kerosene 1 oz. and glycerine 3 ozs., is also said to be very good. Shake well together before using, and with a sewing machine oil can force a few drops into each nostril and moisten well the inside of the fowl's mouth and throat. Anoint also the head and face twice daily. Others again prefer turpentine one part, with sweet oil or vaseline three parts.

The head and face of a fowl affected with roup is generally much swollen, and sometimes badly broken out, one eye usually appearing much larger than the other. When first noticed, treat as you would for a heavy cold, giving first a purgative, then a five-grain capsule of quinine and dozer's powder. An adult fowl can take as large a dose of medicine without danger as a person can. All diseased fowls should be kept away from the flock, in a dry and temperately warm apartment. Encourage them to eat wholesome, nutritious food, and if unable to swal-

low, force a little down the throat. There is nothing better for them than flour bread moistened in rich, sweet milk, adding a little pure lard. When a fowl is indisposed it generally refuses to eat, and often by a little feeding once or twice a day (not stuffing it, by any means), we may keep up its strength until the disease is cured.

As long as there is any sign of roup among the flock, all the water given should be disinfected. Permanganate of potash, just enough to give the water a slight pinkish color, is both harmless and tasteless, and is said to destroy the germs of all diseases. Others prefer pure carbolic acid, say five or six drops to a gallon of water. And when from any cause our poultry appear out of condition, the judicious use of Douglass' mixture, given as a tonic, is excellent.

Roosting in drafty quarters, cold, dampness and uncleanliness are considered the main causes of roup. Its great prevalence during the past winter may be attributed to the many sudden changes of the weather. After weeks of pleasant days—so warm that flowers began to bloom out of doors—the thermometer would suddenly drop 40 or 50 degrees. This, to fowls roosting in open houses, or in the tree tops, as most of our turkeys did, was enough to kill them.—A Farmer's Daughter, in Country Gentleman.

SHEEP AND WOOL.

Australian Wool Growing.

So much is said of the Australian product of wool as having the call upon the wool markets of this country under imminent conditions, that the following statements are interesting. The tendency is toward shearing in the grease because the price obtained for washed wool is not commensurate with the cost of washing. Over 96 per cent of the sheep shorn in New South Wales in 1891 were shorn in the grease; in 1880 the number did not exceed 70 per cent, 17 per cent being creek-washed. The average weight of fleeces shorn in the grease in 1891 was five pounds nine ounces, packed in bales measuring about five feet in length and two feet two inches in breadth and depth, and weighing about 450 pounds. The bales are afterward subjected to hydraulic pressure, and reduced in size about one-half before exportation.

Wool is transported from the stations to the nearest railway by wagons, drawn either by horses or oxen, 20 of the latter often being yoked to one wagon, upon which is loaded as many as 25 bales of wool, and in exceptional cases as many as 50 bales. The cost of cartage overland is at the rate of \$1.25 per 100 pounds per 100 miles. Should the distance exceed 100 miles, a discount of 20 per cent from this rate is made for the additional number of miles. The railway freight from Hay, for instance, to Sydney, a distance of 454 miles, is about 70 cents a hundred pounds of greasy wool; from Bourke to Sydney, a distance of 503 miles, the freight is about 98 cents a hundred pounds; and from Mudgee to Sydney, a distance of 195 miles, the freight is about 66 cents a hundred pounds. It is a matter of report that "not so very many years have elapsed since the Queensland squatter, after seeing his last wagonload started from his station for the coast, would take a run home to England, returning to the colony in time to meet his wool on its arrival at the port of shipment, so long and tedious was the journey. Drays and impromptu slides had to be made; creeks and rivers to be crossed; droughts killed off the bullocks for want of feed and water; floods converted the banks of rivers, etc., into 'tent fields' populated by drivers, whose rations often ran low; bush fires menaced the safety of the men, cattle and freight, besides the occasional attacks by natives. In short, wool, while in transit from the far-back stations to the seaport, had an adventurous and risky career. There have been instances of two different years' clips being on the road at the same time."

Freight rate from Sydney to London is from about 75 cents a hundred pounds by sailing vessel to \$1.25 to \$2 a hundred pounds by steamer.

Nearly all the wool sold in Australia is disposed of by auction to the highest bidder at the principal colonial markets. These sales have grown in popular favor and importance, having amounted to 697,705 bales for the season of 1891-92 for all the colonies. For that season 42 per cent of all the sales were effected at Melbourne and Geelong and 40 per cent at Sydney.

The chief and almost only increase in the world's production of wool is in Australia. For the ten years ending with 1892 the wool production of Cape of Good Hope increased about 36,000,000 pounds; that of the Argentine Republic about 66,000,000 pounds, and that of North America about 13,000,000 pounds—in all about 115,000,000 pounds—while that of Australia increased about 278,000,000 pounds, or over 70 per cent of the total increase. These figures are based on the imports of wool into Europe and North America, where they are alone manufactured, and where they are wholly shipped. Practically the wool production of the world seems to be stationary or on the decline in all wool-producing countries except Australia. Nearly 30 per cent of all the wool consumed is from the flocks of Australasia, and this proportion is increasing every year.

Sheep on Alfalfa.

The experience of practical men has shown that 11 or 12 sheep per acre may be kept on alfalfa the year round—in a mild climate—except for about two months, during which they may be pastured on the wheat stubbles. During those two months the alfalfa may be allowed to grow to a good length and then be harvested and stacked for use in the cold weather of winter, when green feed becomes somewhat scarce, even on the Pacific coast. In a very good

season, even 15 sheep may be kept per acre, and they will be more profitable than grain farming. There is great danger of sheep bloating if moved suddenly from short grazing or dry feed to rank clover or alfalfa; and this must be guarded against by not allowing them to remain too long on a field before they are removed to a fresh one. Lumps of rock salt kept constantly in the field, in covered troughs, will also serve as a preventive of hoven.

What An Oregon Man Thinks.

Charles A. Buckley writes from Oregon to the *American Sheep Breeder* as follows: We are owners of 10,000 sheep, and never before, during the ten years we have been engaged in the business, have we said that we did not know what we were worth in gold coin. There is no substantial market for either sheep, wool or sheep ranch. As I previously said, we have been in the business ten years, and up to last June we had made about \$25,000. I now consider that ten years' profit, which we had accumulated by hard toil, exposure and deprivation, has all been swept away by "Democratic rule." If you know of any party who thinks that free trade in wool will help the wool grower, please give him our address, and if he desires to invest in sheep we will fit him out with one of the best improved "sheep ranches" in eastern Oregon, with 10,000 sheep, at half of the valuation of a year ago.

Mr. Wilson claims in his speech that we can produce wool as cheaply as Australia. It is a false statement. This country cannot raise wool for double the amount that it is grown for in Australia. We pay good wages, provision our camps abundantly, and have to contend with severe winters and pay high rates for transportation. Now, in Australia, a sheep-herder will look after a herd of 4000 or 5000 for \$15 per month, while we pay from \$35 to \$40 per month for herding 1500 or 1800. Many of our herders are men of intelligence, and respectful and good citizens, and they obey the laws of the country. The majority of the herders of Australia are outlaws, of a low class, and who are willing to work for small pay herding, for they know the work takes them almost out of the way of civilization and almost beyond the reach of the law.

HORTICULTURE.

How to Have Clean Fruit.

J. H. Hornbeck gives the *Sonoma Farmer* the following as the result of his experience and observation:

Right now is the time to spray trees for the pear scab or cracking, sometimes called blight. Use the Bordeaux mixture made as follows:

Put 16 pounds of bluestone in a gunny sack and hang it in a barrel containing about 22 gallons of water; it will dissolve much sooner than to let it fall to the bottom. In another vessel put 30 pounds of lime, and slack in sufficient quantity of water. When it gets cold mix the two liquids together slowly, stirring well, and add water to make 45 gallons. This will color your trees very blue, and they will retain that color for a year. No spores of the fungus will grow where the blue is. As soon as the blossoms fall off spray again with the Bordeaux mixture as follows: Six pounds of bluestone and 6 pounds of lime, mixed as above, making 25 gallons of wash; into this put 2 ounces of Paris green and you will catch the codlin moth. One or two more sprayings during the summer with this last formula will save 75 per cent or more of your fruit and clean your trees of all fungoid growths and leave them in good condition.

It may cost about two cents per gallon for the first wash and for those afterward 1½ cents per gallon. Say for three sprayings about five cents per tree for the season; that is, for trees 10 years old; such trees are usually about 12 to 14 feet high, and half as much in diameter. The labor of putting it on ought not to cost more than two cents per tree each application, which would be for the season less than 12 cents per tree. It looks like a good business proposition to expend 12 cents per tree and get a crop that is worth something, compared to what it would be without such expenditure. All of these parasitic fungoids are on the increase, and if we do not exterminate them it will not be many years till we have no fruit fit for even hog feed.

Spray your grape vines with same wash, commencing now with the first-mentioned formula and again when in bloom with the last. Six pounds bluestone, 6 pounds lime and 25 gallons of water; leave out the Paris green; and, if mildew is on them, apply it every four weeks till within one month of gathering time.

This Bordeaux mixture is the best fungicide known, and is cheap and easily prepared, and there is no need of having moss-grown trees and diseased vines. Every person who owns an acre of trees, or even less, should have their own spray outfit and teach all the family how to use and take care of it. Persons who have gone to the expense of getting such things do not like to lend and hire them, and they are perfectly justifiable in not doing so. A small outfit will get an outfit sufficient for several acres, and if rightly cared for will last for several years.

When pruning and cultivating mark every tree you see that has scale on it and attend to it as soon as possible. By following this plan your orchard need never get very much infested, and you will keep it clean at very little expense. Always wash out your spray tank and hose and put them away clean, and keep your tank always full of clean water when not in use.

San Jose Scale at the East.

The U. S. Department of Agriculture will issue in a few days an emergency bulletin treating of the San Jose Scale of California, sometimes called the Pernicious Scale (*Aspidiotus perniciosus* Comstock).

This insect, which is the most serious insect-enemy

which the growers of fruits in California have to contend against, first made its appearance in the Eastern States last year, when it was found in the vicinity of Charlottesville, Va., and the State Board of Agriculture of Virginia, with the help of the U. S. Department of Agriculture, has just completed a series of fumigating operations which it is hoped have practically destroyed it in that locality. It has just been discovered, however, in two other Eastern localities, at De Funiak Springs, Fla., and at Riverside, Charles county, Md. In the latter locality it has severely injured an orchard of 300 peach and apple trees. How the insect was introduced into these three localities is not yet known, but it was probably brought upon nursery stock imported from California and sold by Eastern nurserymen.

The seriousness of this condition of affairs can hardly be exaggerated, and active measures will at once be taken to destroy the insect in all localities where it is found.

Dried Fruits, Raisins and Nuts at Midwinter Fair.

The classified exhibit of dried fruits, raisins and nuts will be held in the north gallery of the Horticultural and Agricultural building. Tables have been prepared to receive exhibits. A charge of twenty (20) cents per square foot will be made for space to cover the cost of tables. Exhibits for competition will be received from April 9th to 14th, inclusive. All entries must be made in the name of the producer.

Nuts must be exhibited in packages of not less than one nor more than twenty-five pounds. Figs, raisins, apricots, prunes, peaches, pears, nectarines and other dried fruits must be exhibited in packages of not less than one nor more than twenty-five pounds.

Whenever it is possible both dried fruits and nuts should be shown in commercial packages. Where the exhibitor has only fancy packages, he can furnish a guaranteed sample of the same kind, not less than one pound, for the judges to test, thus preventing the destruction of the packages.

Fruits in Glasses Preserved in Solutions.—Several tables have been set aside for the purpose of a display of fruits preserved in solutions, and all the counties are requested to send sample jars, showing typical specimens produced in their several localities. Upon these jars can be placed neat tags stating the name of the exhibitor, locality, county, etc. No charge will be made for space occupied by these jars. Exhibitors, however, will be expected to occasionally look after their jars, in addition to the janitor service furnished by the department.

EMORY E. SMITH,

Chief Departments Horticulture and Agriculture.
April 3, 1894.

THE VETERINARIAN.

Horse with Lymphangitis.

TO THE EDITOR:—I have a valuable horse that has been in poor condition for several months. His legs have swollen, one after another, and one of the fore legs discharged at top of hoof with much inflammation, and at length the entire hoof came off. I have made a boot for the foot, and keep it clean, applying bluestone. But now the other ankle is running at the top of the hoof. Is there any hope of saving the animal? Can you kindly tell me what to do for it? Will the hoof grow on again?

Two other horses were affected similarly with legs swollen and lame, but no discharge, and recovered. One began at the hock, the swelling extending down to the pastern joint in both hind legs. A five-year-old colt had swelling begin suddenly in all of the legs. It grew thin and was dumpish, but recovered in about a month.
Pentz, Butte Co. J. G. CURTIS.

This horse is suffering from lymphangitis. The horse is in apparent good health, when suddenly an acute swelling of one or more legs is noticed, and if not properly cared for a discharge will be noticed between the hair and the hoof, and in a very acute case the hoof is apt to slough off. The treatment and preventative for the disease is to avoid feeding grain, particularly barley. Feed plenty of grass and vegetables. Shake the hay well and pour hot water over it; then use any easily digested food. Examine the foot for gravel and any signs of matter. Use poultices of hot flaxseed. Apply hot fomentations to the legs where swelling is most acute. Take heavy woolen cloth, soak it in hot water and wrap it around the swollen legs. At night take off the bandages and rub the legs dry (do this very gently), and then rub them over carefully with extract of witch hazel. Give the following powders internally: Nitrate of potash, 4 ounces; iodide of potash, 1½ ounces; pulverized gentian root, 1 ounce; pulverized nux vomica, ½ ounce. Mix and divide into 12 powders and give three daily—morning, noon and night—in bran mash. The hoof will grow on again. Don't use bluestone for any case. Use iodoform ointment on absorbent cotton, and bandage after soaking the foot in warm water. Take a bucket and put in each bucket of warm water two tablespoons of carbolic acid. Write and let me know how the case is progressing; also if boils appear on the swollen legs.
San Francisco. DR. E. J. CREELY, D. V. S.

Fruit Destroyed in Arkansas.

The Weather-Crop Bulletin of the Arkansas Weather Service says:

The temperature during the week ending April 2d has averaged about nine degrees below the normal; on the 26th, 27th, 28th and 29th, the temperature fell below the freezing point and, with clear skies, caused very severe frosts, which killed peaches, plums, pears and strawberries in all parts of the State, and badly nipped the trees. The same weather conditions have prevailed throughout the whole State during the week, all suffering alike from the low temperatures and frost, which were followed on the 28th by a severe snow storm, leaving the ground in such

condition that work will be delayed for at least a week. Farmers in the northwestern part of the State, where the frost seems to have been the most severe, are very much discouraged over the loss of their fruits, it being thought that everything is injured except late apples.

The Red Gum.

TO THE EDITOR:—The word "desert" was left out in the quotation printed in the *RURAL* from Baron Von Mueller's last letter to me. The quotation should read: "The two largest and best desert eucalypts are *E. rostrata* and *E. microtheca*."

We have the *rostrata* in California but thus far know only of young trees true to name. We know, however, from ten years' experience, that the *E. rostrata* or red gum stands many difficult conditions in California better than the blue gum, and while growing more slowly matures a more valuable timber. It is probably the best gum for Arizona, if not one of the few that will do in that territory. The trouble is to obtain seeds or trees true to name when starting a red gum plantation. Half a dozen species have been sold and planted in California as red gum. The principal one of these has been the *E. viminalis* or manna gum. This is a good tree and a frost resister, but it is not the red gum, nor can it take its place in the specialties of that tree as to heat resistance or vitality. A curious thing about the *viminalis* in this State is the absence of the manna or melitose exudation from which its popular name is derived in Australia.

No precaution should be omitted in procuring seeds or trees for any planting. This general rule has the additional reason for special application to the eucalyptus gums on account of the ignorance of the seedsmen and nurserymen as to all but one or two of its 170 species. Thus the planter with careful study makes gross mistakes in these trees through no fault of his own and through no intentional fault of others.
ABBOT KINNEY.

Lamanda Park.

The Cold Wave in Florida.

From the Weather-Crop Bulletin of the Florida Weather Service, for the week ending April 2d, we quote as follows:

The weather during the first part of the week was such as to cause great apprehension among farmers and fruit-growers. The unusually mild weather during the preceding three weeks, and the fact that it was past the average time for spring frosts in this latitude, gave rise to the belief that spring had come, and when the Weather Bureau announced the approach of a cold wave that would cause severe frosts in the northern and central sections of the State, much concern was felt for the safety of fruit and crops. The wonder now is how, with such cold weather and vegetation so far advanced, anything escaped, especially in the sections where it was cold enough to make ice. The lowest temperature occurred generally on the morning of the 27th, and ice formed in all the western and northern counties of the State, but fresh winds continuing all night prevented the general destruction of crops and fruit.

The month of March, 1894, was one of the warmest in 20 years, and the period from the 1st to the 25th has probably never been equalled in point of warmth since observations were begun in the State. Much damage was done in western Florida by the cold wave. Ice or severe frosts occurred on five days, beginning with the 26th. All tender garden and field crops were greatly damaged, and in most places replanting is necessary and seeds are in great demand. Peaches and pears are reported killed and oranges damaged in places, while in other sections they are said to have sustained little or no injury. It is impossible to determine the damage so soon, but those correspondents who estimate it at about half the crop are in the majority. In sheltered localities the damage is light.

Considerable damage to crops is reported in the western and very little in the eastern counties of the northern district. No damage reported from the strawberry growing sections. Cold killed cotton, beans and other tender vines and plants in the western portion and injured corn and probably fruit to some extent.

Not the slightest damage is reported to oranges in the principal orange-growing section of the State. Slight damage to the most tender plants and vines is reported in some places in the northern counties where the cold also retarded the growth of crops, but in the central and southern counties great improvement is noted, especially in tomatoes.

Oregon Weather and Crops.

From Crop-Weather Bulletin No. 1 of the Oregon State Weather Service, for the week ending Tuesday, April 3d, we take the following:

Compared with previous years the present season is fully three weeks in advance of the season of 1893. Almond trees are in full bloom in the southern counties. Peach and plum trees are blooming in many sections under favorable conditions. Grain and grasses are making rapid progress. Wheat on well-drained land has a healthy green appearance. On low land it has not recovered from the effects of the excessive rains, and is slightly discolored. Wheat stood well, and the prospects are good for a superior crop. Plowing and seeding spring grain has commenced.

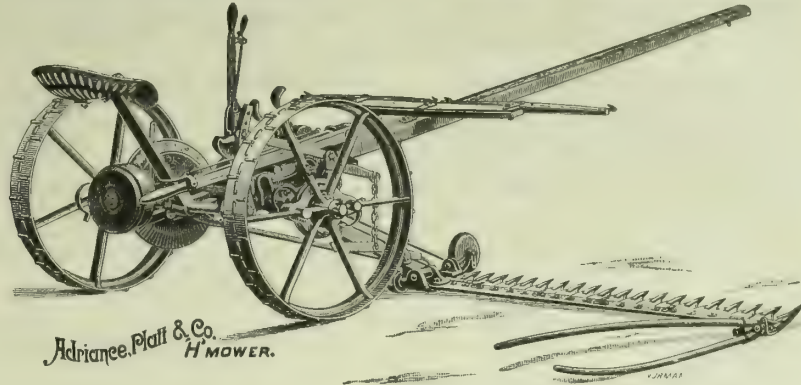
Pastures have become green; clover especially has a stout and vigorous growth. Owing to the condition of grass on the range feeding of stock will shortly cease. All kinds of stock have wintered well.

Wheat, the staple product of the Columbia valley, is in the best condition known for years. The prospects for a good crop in the Columbia and Walla valleys are excellent.

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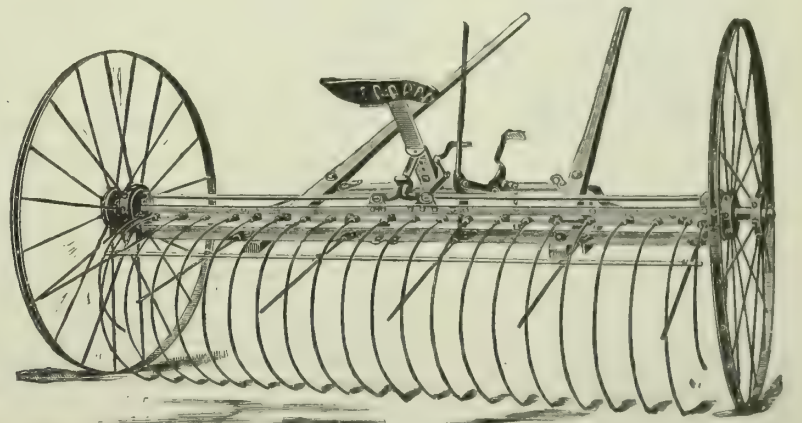
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THE HOME CIRCLE.

Spring.

From age to age, from year to year,
As time goes on and Spring draws near,
In each and every magazine
An ode on "Spring" is ever seen.
In all of these she trips her way
With smiling lips and aspect gay.
The flowers spring 'neath the earth she treads,
And, nodding, show their dainty heads;
And every bird bursts into song
The moment that she comes along.
No bitter wind, no frost, no snow,
And not a bud but lives to blow.
We likewise see, if we attend,
An exclamation at the end.

Sometimes the poets, strange to tell,
Forsake the theme they love so well,
And turn their wondrous powers of rhyme
On only one month at a time.
March often escapes; they do not care
To chant her doubtful charms and rare;
But when they do, naught does avail,
'Tis lion's head and lambkin's tail.
They finish April with a word,
And, farther onward ever lured,
The merry months of May and June
Perpetuate in doubtful tune.
Perhaps, in some forgotten day,
A poet first sang, "May, Sweet May;"
But now we hardly ever meet
The month of May without the sweet.
Her azure skies and balmy breath
Have also nigh been sung to death.
And, in her time, the smell of hay
Drives other perfumes far away.
Oh, would that we could only find
That genius with the monster mind,
Who, after life-long toil and strife,
The "purling brook" had brought to life!
In our days forth from every book
A-babbling runs a purling brook;
And "purling brooks" have swamped the land,
Until we have not room to stand.
Small honor be unto the pen
That wrote, "When swallows come again,"
And took no patent for the thought
Which condescending muse had brought;
All rhymers have with might and main
Now seized upon the threadbare strain,
And warble with a dash and sigh
Of "When the swallows homeward fly."

The world is fair, its wonders new;
But, then, expressions are so few.
There never is a thought infused
But has before been tenfold used;
So I'm compelled, most gracious Spring,
To think the thoughts I fain would sing.

A. B.

Race.

I.

Leave me here those looks of yours!
All those pretty airs and lures:
Flush of cheek and flash of eye;
Your lips' smile and their deep dye;
Gleam of the white teeth within;
Dimple of the cloven chin;
All the sunshine that you wear
In the summer of your hair;
All the morning of your face;
All your figure's wilding grace;
The flower-pose of your head, the light
Flutter of your footsteps' flight;
I own all, and that glad heart
I must claim ere you depart.

II.

Go, yet go not unconsoled!
Sometime, after you are old,
You shall come, and I will take
From your brow the sullen ache,
From your eyes the twilight gaze
Darkening upon winter days,
From your feet their palsy pace,
And the wrinkles from your face,
From your locks the snow; the droop
Of your head, your worn frame's stoop,
And that withered smile within
The kissing of the nose and chin;
I own all, and that sad heart
I will claim ere you depart.

III.

I am Race, and both are mine—
Mortal Age and Youth divine;
Mine to grant, but not in fee;
Both again revert to me
From each that lives, that I may give
Unto each that yet shall live.

—W. D. Howells in Harper's Magazine for April.

An Intercepted Letter.

I WOULD like to know what we shall do now," said Aurora.

The dreary equinoctial rain was over; the oblique autumn sun glinted on matted drifts of wet leaves and pools of water in the road; a solitary red chrysanthemum lifts its tufts of flowers under the window. They had opened the windows wide to let in the air and light, after Grand aunt Miriam's funeral. There were the wheelmarks and deep ground ruts yet in the road, where the hearse had been driven up to the gate; but the yellow hickory leaves, fluttering down like golden rain at every gust of wind, were fast obliterating them.

Grand aunt Miriam was dead and laid to rest in the sunny corner of the village churchyard, and Adeline and Aurora were left alone in the world.

"I'm sure," said the widow Allston, who

lived in the next house, "I don't know what's to become of them gals. They ain't been brought up to do nothin'. And they're dreadful ordinary lookin' gals. They wasn't pretty when they was young, and the youngest on 'em is turned forty now."

And that was precisely the problem which was in Aurora Field's mind when she sat before the crackling fire, with her elbows on her knees and her chin in her hands and looked dreamily across the hearthstone at her sister Adeline.

"What can we do?" said Adeline, who was the meeker and less enterprising spirit of the two.

"We've got to live," declared Aurora.

"Oh, of course—we've got to live."

"And we've got nothing to live upon but this old house and thirty acres of rocky, up-hill ground!" said Aurora. "Grand aunt Miriam's pension died with her, and she never saved a penny out of it—though, indeed, how could she, poor old thing? And I don't see that there's anything left for us but to keep boarders."

"But who will board with us?" said Adeline, in her feeble, inefficient way.

Aurora shrugged her shoulders impatiently.

"You never had any faculty, Addie," said she, "and I s'pose it's too late for you to begin to reform now. But I should think you might have had the common sense to put two and two together. Ain't there that big red-brick factory a-buildin' by Lemming's Falls, and won't it be full of girls in two month's time? And won't they be glad to have a handy place to board? I've been counting up—there are four, five, six rooms we could spare as well as not. And I'm a pretty decent cook if I could get the materials to cook with, and I s'pose you could, at least, look after the rest of the house?"

"Yes, I could do that, I think!" said meek Adeline, who always had a sense of inferiority in her sister's presence. "At least I would try!"

"Then," said Aurora, "let's go right to work and get the house thoroughly cleaned the very first thing."

"Now?" gasped Adeline.

"Of course, now! Do you suppose I meant next year?" retorted her sister, irately. "The house is full of old truck and furniture, and will have to have half a dozen bonfires, at least, before things'll be decently cleared out. And we've got to do it ourselves, Adeline! We can't afford to hire any one to help us. And so the sooner we begin the better."

"Yes, I suppose so!" assented Adeline.

So the next morning the Field girls set themselves diligently to work. Aurora had a certain hard-headed energy of purpose that rather enjoyed toil and bustle, but poor Adeline's heart failed within her at the prospect. The tears came into her eyes as she took Grand aunt Miriam's old faded clothes and books and papers out of the nasty-smelling drawers.

"Where am I to put these?" she asked.

"Burn 'em!" was her sister's curt reply.

Adeline looked aghast. Grand aunt Miriam had been a stern old tyrant to her, it was true—a domineering mistress who exacted everything from her, and gave her, in return, nothing but the merest subsistence. Grand aunt Miriam had ruthlessly crushed in the bud that one only little love affair which she had ever known. Not, she thought, that she had any right to call it a love affair at all. Doctor Hunt—he was only a young medical student then—had walked home from the historical lectures with her, one bleak March evening, and Grand aunt Miriam had never asked him to come in and warm himself.

"If you're goin' to keep company with any one, Adeline," the old woman had sourly uttered, "let it be with some one that can support you decently. I hain't no faith in these sproutin' doctors."

There was the end of it. Doctor Hunt never came again, and poor Adeline remained an ungathered rose upon the family stem. She had liked Francis Hunt; she had even been wild enough to fancy that he liked her. But Grand aunt Miriam had decided the matter for her, as she decided everything else.

Yet, in spite of this, poor Adeline cried when she put the old woman's dog-eared books and crumpled papers into the fire, with the yellow letters that Grand uncle Fossett had written her before they were married, and the lock of faded flaxen hair that she had cut off from the cofined head of her only baby, dead sixty years since.

"This letter is a different color from the rest," she said mechanically, as she sorted out the discolored heap. "Look, Aurora, do you think—"

She checked herself abruptly as she fitted on a pair of spectacles (that first concession to the standard of approaching old age) and

scrutinized the folded piece of paper still more closely.

"Why," she said, "the seal ain't broken! Why, it's directed to me!"

It was directed to her, and in Doctor Hunt's peculiar, angular hand-writing that she would have known if she had seen it in China or Patagonia. She turned pale and began to tremble.

"Why, Addie, what's the matter?" said Aurora, looking up from a chest of mildewed garments, which she was examining.

"Don't come near me!" flashed out Adeline. "It's my letter—I'm going to read it myself!"

Aurora looked at her in silence.

"It's from Doctor Hunt!" gasped poor Adeline. "Written twenty odd years ago, and asking me to be his wife. And Grand aunt Miriam had hidden it away, and I never knew anything of it. O Aurora! O Aurora, what must he have thought?"

And the poor, faded little woman burst into tears—the tears which in middle age are so fearfully unbecoming!

"It's queer enough, ain't it?" said Aurora.

"What would you do, Aurora?" faltered Adeline. "Would you go to him? Would you—"

"I don't know what I would do," Aurora answered slowly. "Twenty years ago is twenty years ago!"

"But he wrote this letter to me, and I never got it! And he has a right to an answer!"

"Yes, I s'pose he has."

Adeline thought it over all day. There was no more work for her. She sat at the window, with the time-yellowed letter in her lap, staring out at the autumn leaves as they floated down through the misty air outside, thinking—thinking! Aurora glanced at her sometimes, but she did not speak. She herself, a hard-favored, masculine woman, had never had a lover; she could not help feeling a secret reverence for the sister who had attained this crown of womanhood.

At sunset Adeline rearranged her hair, bathed her face and tied on her little crape bonnet, with the stiff, white frill in front.

"What are you going to do?" Aurora asked.

"I'm going to him," said Adeline. "I'm going to show him this letter and tell him all—how it happened."

But as she trudged along the leaf-carpeted autumn lanes Doctor Hunt's carriage whirled by. He was sitting in it, and he was not alone. As Adeline stopped and looked after it, the doctor checked his horse. A pretty, red-cheeked girl got out. And then the doctor drove on. Still Adeline stood there, looking at the dust that followed the wheels.

"Oh, Adeline," said Eustacia Bent, "we were just going to your house! I wanted to see if I could get you and Aurora to do some sewing for me. Doctor Hunt was taking me there when I met you. He asked me to be his wife. I am to be married to him in January."

Eustacia Bent's fair, dimpled face was all aglow; her blue, long-lashed eyes shone like stars; the roses of last June were not pinker than her cheeks. She was two-and-twenty. Adeline Field was forty. The elder woman, with a pang, recognized the contrast, and in that moment all the newly revived hope died out of her heart forever.

"No," said she, "we can't take in any sewing. We're getting ready for boarders. We are busy. I guess you'll have to get some one else, Eustacia. But—but I wish you joy, all the same. I hope you'll be very happy—you and Doctor Hunt."

She turned and crept home again. The sun had dipped below the horizon now; the air was chill and gray and frosty—fit omen of her coming years of solitude. As she walked spiritlessly along, she felt as if her heart were a lump of lead within her.

"Well?" Aurora breathlessly asked, as she re-entered the dismal old house where the neglected fire was dying out on the iron dogs, and a melancholy cricket chirped on the hearth. "What did he say?"

"Nothing; I haven't spoken to him," said Adeline, mournfully. "I met Eustacia

Bent. She's going to be married to him in January, and that ends the whole thing."

She took the letter from her pocket and threw it on the embers. It blazed fitfully up, and then went out in a little drift of gray ashes, and with it died out all the light and life of Adeline Field's heart.

"Yes," said Aurora, "that ends the whole thing."

Grand aunt Miriam, sleeping under the churchyard wall, might have been content. She had had her own way.—Amy Randolph.

Fashion Notes.

A silk season is predicted for the next summer, especially of the very light silks that are made in this country, the taffeta, demi-taffeta, lustrating, foulard, or the so-called China silks, and the useful surahs.

Soft gray effects are charming in the new silks, and will rival the clearly defined white and black silks that came into favor last summer. These grays are very effective in bengaline stripes of satin and moire pointille with yellow or rose color, or else with the gay pompadour blossoms strewn upon them.

The new blouse waists do not end with the belt, but flare out over the hips in a variety of patterns, all of them, however, having more or less method in their arrangement. Dressmakers are at last submitting to the inevitable, and are giving up their opposition to the silk waist which they have vainly tried to suppress; and several firms are now wisely making them a specialty, giving them a cut and elaboration that it is the despair of amateurs to imitate. The basque part of the new waists may be a ruffle; or it may be finished in box plaits, or "rippled" like the seamless collars and capes on the jackets. One very pretty model is made with a yoke, below which are three broad box plaits in front and three behind which are graduated in to the waist, the side pieces being fitted smooth. Below the waist are eight box plaits, broad at the bottom and graduated at the waist, the extra two being over the hips, while a pretty effect is produced by glimpses of silk of another color between the box plaits. The graduated plaits cause the waist to look very small. Another charming design in black chiffon has three accordion-plaited ruffles on the yoke, edged with an extremely narrow white picot edge of guipure, and two accordion-plaited wings on each shoulder, also finished with the tiny edge. The front is gathered in, exceedingly full, and brought to a point at the waist, where it is finished with a draping of black moire ribbon caught up with a bow on the left side.

A pretty home gown is made of silk and wool novelty goods of a warm maroon shade shot with brilliant colors, and reddish-brown velvet. The trimming is a very narrow gimp of jet, steel and bronze spangles; several rows are put on the skirt in deep vandykes, while a single row edges the blouse, sleeves, ruffles and belt, and outlines the yoke. The skirt has a yoke with front and side gores, and full, straight breadth in the back. The blouse is slightly full over a fitted lining, and the skirt part is cut in a circle. The sleeve, ruffles and yoke are of velvet, and it is also a popular fancy to make the yoke and lower part of the sleeves of astrachan or of Persian lamb.

Historical.

In 1556 Francis I gave his queen the equivalent of \$16,000 in our money to buy her a hat.

Philippe le Bel of France ordered that no tradesman's wife should wear a gown made of stuff costing more than twenty cents a yard.

In 1364 the pointed hoods worn by the ladies often reached four feet above the head, making the lady's face appear about the center of her body.

The longest train on record was that of Catherine de Medici on the occasion of her marriage. It was forty-eight yards, and borne by ten pairs of pages.

Fifty-dollar gold pieces were never coined by the United States Government; there

Highest of all in Leavening Power.—Latest U. S. Gov't Report.

Royal Baking Powder
ABSOLUTELY PURE

were, however, private issues of octagonal gold coins of this value in California in 1851, 1852, 1853 and 1855. In 1851-55, also, round fifty-dollar pieces were issued in California. They received their full value when deposited at the United States assay offices. By the now-existing laws of this country there can be no revival of private coinages bearing such close resemblance to authorized mint issues.

Frederick Hudson says that the first printed newspaper was the *Gazette*, published in Nuremberg in 1457, and thereafter at intervals. In 1534 appeared in the same city the *Neue Zeitung aus Hispanien und Italien*, and at a date between these two appeared the *Cologne Chronicle*. These early newspapers are not contained in any library, so far as Hudson indicates; the earliest printed newspaper in existence is called the *Gazetta* of Venice, is dated 1570, and is represented by a few copies in Venice in the Magliabecchian Library.

Commodore Decatur's first command was the *Norfolk*, in 1802; later he commanded the *Enterprise*. In 1804 he commanded the *Intrepid* in destroying the Philadelphia in the harbor of Tripoli. In September, 1804, he commanded the *Constitution* and later the Congress, and in 1809 commanded the *Chesapeake*. In 1810 he took command of the United States frigate. In 1814 he commanded the President, frigate, which he had to surrender to four British vessels. In 1815 Decatur commanded a squadron in the Mediterranean, and humbled Algiers, Tunis and Tripoli, and returned home in 1816 to become a member of the Board of Navy Commissioners. He never went to sea again, and was killed in a duel March 22, 1820.

Gems of Thought.

Contentment is better than divinations or visions.—Landor.

He who reigns within himself and rules passions, desires and fears, is more than a king.—G. Massey.

Be your character what it will, it will be known; and nobody will take it upon your word.—Chesterfield.

Men of earnest thought and quiet contemplation exercise a wonderful influence over men of action.—Robertson.

Endurance is the prerogative of woman, enabling the gentlest to suffer what would cause terror to manhood.—Wieland.

Like a beautiful flower full of color, but without scent, are the fine but fruitless words of him who does not act accordingly.—Buddha.

Wherever I find a great deal of gratitude in a poor man I take it for granted there would be as much generosity if he were a rich man.—Pope.

If you can't pay for a thing, don't buy it. If you can't get paid for it, don't sell it. So you will have calm days, drowsy nights, all the good business you have now, and none of the bad.—Ruskin.

He who would do some great thing in this short life must apply himself to the work with such a concentration of forces as to spectators, who live only to amuse themselves, looks like insanity.—John Foster.

The dreariness of drudgery may be changed to the blessedness of drudgery, if the daily duty be regarded as the college of life for growth in mental power, and as a gymnasium for building up character.—Chicago Interior.

Let men but speak forth with genuine earnestness the thought, the emotion, the actual condition of his own heart, and other men, so strangely are we all knit together by the tie of sympathy, must and will give heed to him.—Carlyle.

Though an inheritance of acres may be bequeathed, an inheritance of knowledge cannot. The wealthy man may pay others for doing his work for him; but it is impossible to get his thinking done for him by another, or to purchase any kind of self-culture.—Samuel Smiles.

Cease from this antedating of your experience. Sufficient for to-day are the duties of to-day. Don't waste life in doubts and fears; spend yourself on the work before you, well assured the right performance of this hour's duties will be the best preparation for the hours of ages that follow it. * * 'Tis the measure of a man—his apprehension of a day.—R. W. Emerson.

The latest fad in the treatment of small-pox is to shut up the patients in a room from which ultra violet rays are excluded by red window panes or by red shades. All the patients thus treated in the Bergen Hospital, Norway, recovered soon and with few scars.

The Boston Public Library has 556,000 volumes; that of Chicago 230,000.

Tree Language.

Come tell me of thy favorite tree,
The one thou lovest with thy soul,
And I will read thy heart for thee
As if it were an open scroll,
For, knowing this, I know the whole.

Our fathers loved the stately elm,
Which like a tower its head uprears—
Fit type of those who held the helm
Amid the storms of early years,
Sedate, unmoved by idle fears.

Is Norway's rugged pine thy tree,
Or Ceylon's teak, or England's oak?
Thou lovest war, an angry sea;
Thy spirit brave has ne'er been broke
And thou wouldst die 'neath slavery's yoke.

Or lovest thou by the setting sun
The redwood with its giant mast,
The cedar hoar of Lebanon?
Thy life is in the golden past,
A love for ancient things thou hast.

And if the laurel and the bay
Have charms above all other trees,
The graceful birches robed in gray,
The aspen quaking in the breeze,
Thy poet's soul rare beauty sees.

Perchance the willow is thy tree,
The cypress with its robes of gloom,
The olive of Gethsemane;
Ah! thou hast toyed with Fate's sad loom,
Or thou hast bended o'er a tomb.

Is it the tropic tamarisk,
The palm, the citron or the plane,
The orange with its golden disk?
The hot blood throbs in every vein,
Thy home should be in dreamy Spain.

It may be that thy spirit roves
Amid acanthus o'er the sea,
Or in the Attic ilix groves;
Thy dreams are of the Cyclopes,
Of Plato and Socrates.

And shall I now my tree reveal?
I love the hemlock's shaggy bole,
His robes of gloom, his limbs of steel,
His form uncouth on Maine's wild shoal—
Now who from this can read my soul?

—Fred Lewis Patte in Youth's Companion.

Curious Facts.

The middle book of the Old Testament is Proverbs. The middle chapter is Job 29.

The University of Oxford in England has the reputation of having been founded by King Alfred in 872.

Alum and plaster of Paris mixed with water and used in a liquid state form a hard composition and a useful cement.

In 1842 the British customs tariff numbered 1200 articles. Now it contains but 19, the principal of which are tobacco, tea and liquor.

Mulhall estimates the number of individuals who emigrated from Europe in 72 years, 1816 to 1888, at 27,205,000. Of these, 15,000,000 came to the United States.

Gurit has collected figures which show that there is one death to every three thousand administrations of chloroform, while with ether there is only one fatal case in fourteen thousand. Ether is dangerous to the lungs; chloroform to the heart.

A hollow celestial globe of copper at Pembroke College, Cambridge, England, was constructed in the last century as a lecture-room, and will hold a half dozen persons or more. The constellations are depicted on its interior, and it rotates on its axis.

The total number of deaths in the United States in 1892 was about 900,000; the number of persons cremated that year, 503. As crematories have been in existence in the United States since 1881, these statistics indicate that the movement favoring the burning of the dead is not making much progress.

Snails Live Indefinitely.

The Smithsonian Institution has hit upon something extraordinary in snails, says the Washington correspondent of the *Providence Journal*. The creatures may be slow, but they hold the record over all other animals for prolonged vitality under adverse conditions. Stories of toads dug out of rocks, in which they have been imprisoned for ages, are apocryphal; but recent discovery has established the credit of this humble mollusk as number one in tenacity of life. Only the other day a specimen from an island off the coast of California, inclosed in a drawer with part of the molluscan collection, was found to be alive. It had had no food or water for more than six years. When placed in a box with moist earth it protruded its foot and began to move about, and seemed to be as well as ever. Some time ago a few snails of a different species, gathered in Mexico, reached the Smithsonian Institution and were placed in a box. They remained undisturbed for two years and three months, at the end of which time they were put into a glass jar with some chickweed and a small quantity of tepid water. Pretty soon they waked up and appeared quite active.

Bits of Household Fact and Fancy.

Your can't have your name on both God's and the devil's pay roll.

If sassafras bark is sprinkled among dried fruit it will keep out the worms.

It is not necessary to leave the strings in string beans to prove them genuine.

True modesty avoids everything that is criminal; false modesty everything that is unfashionable.

Clothespins boiled a few minutes and quickly dried, once or twice a month, become more durable.

Milk in boiling always forms a peculiar acid, so a pinch of soda should be added when beginning to cook.

To clean silk, sponge it with equal parts of black tea and vinegar. Shake until nearly dry and then press with an iron that is half hot.

No wonder the way of the transgressor is hard when you take into consideration the number who travel his route.

Somebody has invented the word "grip-let," to describe an attack that is worse than a cold, but not so bad as the gripe.

A household without children is a bell without a clapper. The latent sound would be beautiful enough were there something to awaken it.

To exterminate moths from trunks and chests wash well with borax water, and after drying use benzine. Air and sun well before using.

Born on a Monday, fair of face;
Born on a Tuesday, full of God's grace;
Born on a Wednesday, merry and glad;
Born on a Thursday, sour and sad;
Born on a Friday, godly given;
Born on a Saturday, work for a living;
Born on a Sunday, never shall want;
So there's the week and the end on't.

—Old Superstitions.

For an informal or family breakfast cream-tinted damask cloths, with borders in bright colors, are liked. The napkins match and are finished with fringe.

Let your light shine in your home and don't be afraid that it will become too bright. Don't be turning it down all the time, as some people do their gas.

Laziness begins in cobwebs and ends in iron chains. The more business a man has to do the more he is able to accomplish, for he learns to economize his time.

How He Chose a Clerk.

A lawyer advertised for a clerk. The next morning the office was crowded with applicants—all bright and many suitable. He bade them wait until all should arrive, and then arranged them all in a row and said he would tell them a story, note their comments, and judge from that whom he would choose.

"A certain farmer," began the lawyer, "was troubled with a red squirrel that got in through a hole in his barn and stole seed corn. He resolved to kill the squirrel at the first opportunity. Seeing him go in at the hole one noon, he took his shotgun and fired away. The first shot set the barn on fire."

"Did the barn burn?" asked one of the boys.

The lawyer, without answering, continued: "And seeing the barn on fire the farmer seized a pail of water and ran to put it out."

"Did he put it out?" said another.

"As he passed inside the door shut to, and the barn was soon in flames. When the hired girl rushed out with more water—"

"Did they all burn up?" said another boy.

The lawyer went on without answer: "Then the old lady came out, and all was noise and confusion, and everybody was trying to put out the fire."

"Did any one burn up?" said another.

The lawyer said: "There, that will do; you have shown great interest in the story." But observing one little bright-eyed fellow in deep silence, he said: "Now, my little man, what have you to say?"

The little fellow blushed, grew uneasy and stammered out: "I want to know what became of that squirrel; that's what I want to know?"

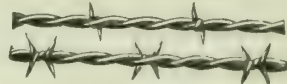
"You'll do," said the lawyer; "you are my man; you have not been switched off by a confusion and barn burning, and the hired girls and water pails. You have kept your eye on the squirrel."—Fact in Court.

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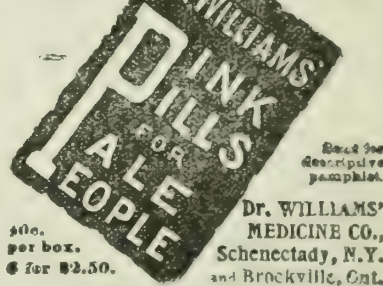
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PATRONS OF HUSBANDRY.

Bro. Messer at Tulare Grange.

TO THE EDITOR:—Saturday was a gala day in Tulare Grange, the special occasion being an official visit from Hon. Alpha Messer, of Vermont, Lecturer of the National Grange, accompanied by Bro. Sage, a prominent patron of Massachusetts.

Bro. Messer is making an official tour of the granges of California, will deliver a course of twenty or more lectures, and opened his course before Tulare Grange and invited guests.

Bro. Forrer, of the U. S. Experimental Station, read his meteorological observations for the past month: Rain on the 2d, .61; on 16th, .15; on 19th, .01; total, .77 of an inch. Highest temperature, 92° on 23d; lowest, 28° on 3d and 22d; light frost on 4th, 5th, 20th, 23d and 24th; killing frost below 30° on 3d, 18th, 21st and 22d; clear days, 12; fair days, 12; cloudy days, 7; prevailing wind, northwest.

By resolution, W. C. Barr was selected to solicit and collect milk for the Zumwalt creamery and cheese factory.

At 2 P. M. the master declared a recess, the doors were opened to visitors and the room was soon comfortably filled with patrons and friends of the order.

Bro. Shoemaker introduced Bro. A. P. Roache, master of the State Grange, who was welcomed to Tulare and Tulare Grange by Master Premo. Worthy Master Roache then introduced National Grange Lecturer Messer, and welcomed him to California, it being Master Roache's particular business here to meet Bro. Messer and to accompany him on his tour through California.

Bro. Messer delivered an interesting address of an hour and a quarter, which was listened to with marked attention and received frequent applause, explaining the grange in its social and educational features and its universal membership of men and women. During his address Bro. Messer spoke of the mistake to think a boy or girl had completed their education on receiving their college diploma. Their education of life and the world was then to commence. He spoke of the evils parents do their children at the present day in teaching them to avoid work, seeking frivolity and shirking labor; that manual training will do more to make the good and honored man and woman than the literary or classical education, and in this connection the intention of the law of Congress providing for the maintenance of colleges of agriculture and mechanic arts has been subverted by the association of the same with the classical universities. This subject has not received the public attention it should have received; but the grange has given it good attention, and through grange efforts in all of the States where it has obtained its greatest usefulness and comes nearest to serving the purposes for which it is intended. It has been separated after great exertions and a long fight with the faculties of the universities, now making useful agricultural and mechanical educational institutions. That this much-to-be-desired end has been obtained in every New England State except his own (Vermont). It has been obtained through grange work, and through grange work will be obtained in his own Green Mountain State.

In matters of taxation and legislation Bro. Messer advised more attention on the part of Patrons. That, as a rule, outside of party measures legislators desire to be honest and impartial and will assist in all measures promotive of the community good. That, bearing this in mind, avoiding strictly partisan measures for the time and advocating such measures outside of partisan ones as are necessary and useful, the patron can promote his own and the public good, developing the usefulness and establishing the reputation of our own dear order of Patrons of Husbandry. That every boy and girl should be taught to labor; for labor is character, is ability, is industry, is reputation, is patriotism.

Bro. Messer's address was thoughtful, was earnest, was judicious, without effort or attempt at oratorical display, and will have good effects.

The musical part of the afternoon's programme was more than well rendered. Mr. Tarkington's "If I Were a Knight of the Olden Time" was well rendered. Mrs. Allen's "My Mountain Home" was more than sweet, her voice being at its very best, while the quartets, accompanied by Mrs. Oakford on the organ, were spirited and expressive.

Tulare Grange and friends had a very pleasant afternoon.

Random Thoughts.

By A. P. ROACHE, W. M. S. G. of California.

If love were shrouded in every heart
The ills of life would soon depart.

In the language of the immortal Perry, "We have met the enemy and they are ours!" That is to say, we have met the generous, hopeful, progressive farmers of Tulare City and county, and the smoldering embers of grangerism which the combined efforts of natural and artificial law had vainly attempted to annihilate have been kindled to a glowing flame. The meeting was fairly large and unusually intelligent, and the beautiful decorations, the fine choir, enthusiasm of the workers, and the splendid speech of the national lecturer, which carried conviction to head and heart alike, rendered it one of those rare occasions which ever leave a tender memory in the minds of all participants. Bro. Sage, a friend of Bro. Messer from the Old Bay State, proved by his sage remarks and good advice that he was a wide-awake patron. State Steward Shoemaker, State Deputy Woods, Worthy Master Premo and good Bro. and Sister Tuohy did a gallant work, and are entitled to our thanks and commendation, while the moral support of the local press, Bro. Mackie, Bro. Chapin, Bro. Wright, Captain and Sister Merritt, and others whose names I cannot now recall, added much to the pleasure and interest of the occasion. Thus the first gun has been fired in the Southland, and if as well-sustained and patriotic an effort is made by all, the echoes from that gun will reverberate along the entire route and again unite in fraternal fellowship the progressive yeomen of progressive California.

Bro. Messer arrived on time, hale, hearty and ready for any amount of work, only a little travel tired, for from his farm in the Green mountains of distant Vermont to the alfalfa fields of Tulare is quite a trip. He reports the granges in his State in a prosperous condition, as does Bro. Sage those in Massachusetts.

The evolution of the day is great and wondrous strange,
But it evolves our toiling sons and daughters to the grange,
And teaches at its mystic shrine the duties of a life,
And binds with truth and purest love the husband and the wife.

The State and county deputies are now hard at work preparing their meetings for the national lecturer. Do what you like, sisters and brothers, in the way of programmes, but leave out the "feast," its preparation tires our sisters all out, and they are then in no condition to appreciate the lecture, because of mental and physical exhaustion. Let us now begin the reform of an abuse which is a burden to them and adds many a weary step to their already overtasked strength.

Every grange should embrace the opportunity now offered to have the national lecturer visit them. Those granges which have had no dates fixed for meetings can, by assuring the executive committee that they will secure a meeting, have a date secured for a lecture, by giving the committee immediate notice. Remember, patrons, these lectures will not cost you one cent, and no trouble, without you wish to entertain the speaker while with you, which most granges insist on doing, but which is perfectly optional with yourselves. Carpenteria Grange has just initiated a class, while Tulare Grange has one almost ready. The unpromising season and hard times is having the effect of inducing the farmer to look about for some means to better his condition by reducing expenses. The co-operative principles of the grange fully meet this great need, and the farmer is no longer slow either to see or secure this beneficial feature of the order which has already saved millions to the farmers of the United States.

Lecturer's Notes.

"Cause and Cure of Tramp Nuisance."

S. GOODENOUGH, Lecturer C. S. G.

A principal cause of the "Tramp Nuisance" is a native indisposition to work on the part of an appreciable percentage of our population. This is fostered by a real difficulty in securing employment at times. When the man who has a natural reluctance to exert himself has to work hard to get work he readily drops into vagrancy.

Just now we have fallen upon exceptional conditions. There is an undoubted and tremendous shortage in the demand for labor. An inevitable consequence will be the swelling of the tramp contingent of our population. That contingent had already grown to number fully 50,000 in our country before the present depression began—

"hobos" from pure love of tramp life. The body of the enforced unemployed at present exceeds one million, and some careful estimates put it above two million, which means that between 10 and 20 per cent of our entire able-bodied male population is reduced to idleness and desperation. Probably not many of them have yet joined the tramp cohorts, but it is to be feared that a considerable percentage of them will fall into habits of vagrancy because of the enforced wandering from place to place in the honest pursuit of employment.

There is strong enticement in an open air, irresponsible, vagabond sort of life, especially in our seductive climate. It has the charm of ease and novelty. The exercise is light—just enough for good health. The burden of care is reduced to the minimum. The exactions of social and civil duty are escaped. It grows to be an ideal kind of existence. Much is surrendered, but it is in the direction of greater liberty. Much that is surrendered is soon contemplated as an undesirable burden, not willingly to be resumed. What use has the tramp for soap and civilization? He prefers license to laundered linen. He regards it as the acme of independence. Doubt about the quality and quantity of the next meal is not to be compared to the drudgery and anxiety of earning an honest living. He enjoys classification with the "fowls of the air" and the "lilies of the field," which neither "sow nor reap nor gather into barns," which "toil not, neither do they spin." He is content that somebody else should do all that, while he comes in for a share of the product. The "glory" of his "array" may not rival Solomon's, but his confidence of being fed is superb. He considers himself a pretty good Christian also, for does he not construe literally the Master's language: "Therefore take no thought, saying, what shall we eat, or what shall we drink, or wherewithal shall we be clothed?"

At all events he becomes fixed in the habit of vagabondage. He and his kind constitute a growing menace to social and economic welfare and an occasion of no inconsiderable anxiety and expense in every community. The lady of the lonely farmhouse lives in continual dread of them, not without cause, and in less degree of dread the lady of the city home. Even men fear them and often yield to their imprudent demands rather than risk the dangers of refusal.

How to eradicate this evil is becoming a serious question—more serious now than ever before. It is to be deplored that this objectionable class is almost certain of large reinforcements from the vast army of the unemployed. The magnitude and difficulty of the problem is thus greatly increased, and the necessity of dealing with it vastly intensified. The schemes of "General" Coxey & Co.'s "industrial army" or "commonweal army" are likely to be effective in little else than as a school of tramps so far as their ranks embrace genuine workmen. While the great body of these aggregations is probably made up of professional "hobos," it is to be feared that there are some real workmen among them. It is to be feared also that they will become inoculated with the wandering spirit and be lost forever to the army of honest industry. Once a tramp, always a tramp, unless heroic measures are adopted.

Will the schemes of Coxey & Co. accomplish good results? I think not. It is not difficult to understand why genuine workmen join in them. The sufferer from the agony of rheumatic fever will insist on frequent change of position at the cost of inevitable accentuation of pain in the vain hope of relief. In the agony of want and distress, some of the unemployed turn blindly to the Quixotic movements on foot in the futile hope of ultimate benefit, though certain of the aggravation of immediate suffering. For them I am sorry. They are attempting to solve the problem of their suffering in an impossible way.

Genuine workmen, desirous of employment, could not more certainly defeat such a purpose than by massing in the large numbers contemplated. It is impossible to give employment to thousands of men while concentrated in one body. It can only be furnished to them singly or in small numbers at scattered points. If they really desire work, they should not mass themselves, but disband and scatter as widely as possible.

Massed in constantly augmenting numbers, their track must become a scene of increasing devastation and danger, kindling growing hostility and oppression. They would soon become too formidable for control by the ordinary civil authorities, until there would be no choice but to accede to their demands. Practically they would forcibly quarter themselves upon the people resident along their line of march. Their insolent exactions might soon grow into pillage or worse crimes. Nothing less than

the power of the State, wielding the military arm, would be able to control them. Woe to the communities upon which such swarms swoop down. They would become worse than the plagues of Egypt.

Suppose State and municipal authorities continue to ignore their progress, for the sake of escaping a disagreeable and serious responsibility, until at last the converging contingents are massed at Washington 500,000 strong, or any other number. What can they do? They can only exercise the right of petition, without inaugurating a rebellion. The right of petition is as readily exercised in California as on the banks of the Potomac. If the purpose is to overawe with the covert threat of gathered hosts, it is more than petition; but anything that shall bear even the appearance of coercion can not be tolerated for a moment. The first step beyond the simple right of petition will be met by the irresistible power of the government and crushed. If Coxey asks for legislation with an army of vagrants at his heels, he invites refusal. Congress cannot afford to encourage a form of demonstration so objectionable and dangerous, and will be likely to deny what might receive favorable consideration if preferred and urged in the ordinary manner.

The wisdom of the proposed legislation is questionable. The issue by the Government of \$500,000,000 of treasury notes would be good money, but how is the "commonweal army" to get hold of them? By force? Preposterous! Only by earning them can they acquire them, and the mere printing of more money does not open new avenues of labor. The extensive road improvements to be urged are hardly practicable. The Nation long ago relegated to the States the opening and maintaining of highways, and the States relegated the same to the counties and municipalities. Washington is not the place to bring pressure to bear in the matter of roads, and only a certain mild degree of pressure is tolerable anywhere. The American temper will not submit to more than a very mild degree of pressure.

Look at it as you will, this march to Washington appears to be unqualifiedly a "fool's errand." It would be wholly farcical if it did not contain so many intimations of tragedy. With only one of its propositions am I in hearty sympathy, viz.: "Exclusion of foreign immigration for a period of ten years." Of this, more anon. In all this there are sharp lessons for us, to some of which, fellow patrons, I shall invite your attention next week.

The Secretary's Column.

Ho for the Grange Congress on the 13th and 14th of April, 1894! A good programme and enjoyment for all.

The S. F. & N. P. R. R. will allow one fare for round trip on regular trains from all points north of San Rafael, tickets good going and returning on Friday, 13th, and Saturday, 14th, and returning on Sunday, the 15th.

It is expected that a great number of the citizens of Sonoma county will avail themselves of the reduced rates and attend the fair.

Sonoma county's exhibit will keep open house on Saturday, the 14th, in honor of the occasion. All members of the order are cordially invited, where they will be entertained by Sonoma's fairest; (T. A. Close, manager). Don't forget to partake of their hospitality (Horticultural Building).

Bro. G. P. Loucks, of the Executive Committee, has been ill with a severe cold, but hopes to meet with the patrons on the 13th and 14th.

I take the following extract from the *Farmers' Friend and Grange Advocate*: Patrons throughout the country will learn with deep regret of the death of Worthy Past Treasurer of National Grange, F. M. McDowell, of New York, which sad event occurred on the 22d of March. Bro. McDowell was an exemplary patron, a steadfast friend, a good citizen and an earnest business man. The funeral of Bro. McDowell was held on Saturday afternoon. Rev. Dr. Trimble delivered an address at the obsequies.

Bro. Alpha Messer, Worthy Lecturer of the National Grange, arrived in Los Angeles, April 2d, safe and sound, but somewhat fatigued after his long ride. He addressed Tulare Grange on the 7th; Selma on the 9th; Merced on the 10th; and will meet with the citizens and patrons at the Congress on the 13th and 14th.

A programme has been arranged by the Executive Committee of California State Grange for Worthy Lecturer Messer in dif-

(Continued on page 298.)

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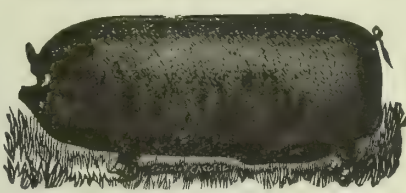
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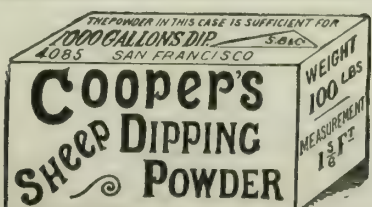
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AGRICULTURAL NOTES.

CALIFORNIA.

Alameda.

Pleasanton Times: A spin through the hop-yard Thursday morning revealed the fact that the company have not been idle this spring. The yard presents an entirely different appearance to that seen this time last year. The first plowing is finished and the work of pruning the vines was also completed Wednesday. The men are now engaged in planting hops. About 14 acres are to be added to the old yard at the western side; this done, the old yard will then be a 40-acre plot. The new water tank and tower have been completed, and at a height that water can be thrown over the highest building on the ground. Water pipe will be laid through the buildings and grounds for fire and other purposes. The engine and boiler are placed in position near the tank tower to be used for pumping water into the large tank. In a few weeks more a decided improvement in the looks of the place will be seen, as the ground will be thoroughly cultivated and the vines will be started.

Butte.

Oroville Register: Major Frank McLaughlin has one of the largest orange groves in the world in Thermalito opposite this town. The tract embraces 147 acres, and nearly all of this is planted to oranges of different varieties. Three years ago the land was rough, uneven and covered with oak and pine, while there were numerous old mining shafts. These have been filled, the land put in splendid condition, pipes run through it in all directions, and many handsome improvements made of different kinds. When the grove is in bearing it will typify its name, Rancho Golden Grove, and will be visited by thousands of persons. A large sum has been expended in bringing this vast orange grove into its present condition, and the day will not be distant when large returns may be expected from it.

Oroville Register: The Oroville Olive Co. has 40 acres of its land cleared, plowed and ready to be planted to olives, mostly of the Nevedillo Blanco and Manzanillo varieties. Eighty acres more will be planted to olives during the coming year. It would be difficult to pick out a more suitable tract of land for olive culture, as the soil is rich and irrigation facilities are of the best. A. Ekman is superintendent, and this alone insures the stockholders an economical and successful management. We expect to see this orchard in a few years one of the leading ones in our vicinity.

Fresno.

Exponent: Although it cannot be said that much of the grain in this section is really suffering for want of rain, still a good rain at this time would be of vast benefit. Nearly all of the grain is of splendid good color and is growing well. That which is needing rain most is summer-fallow on what is known as hog-wallow land, and it is needing it badly. Seven-tenths of an inch is the greatest rainfall we have had in any April for the last six years, and three-tenths of an inch the smallest. But seven-tenths of an inch at this stage of the grain will make an immense increase in the crop.

Enterprise: There were anxious inquirers about water among vineyardists and orchardists who had bought water leases. The condition of a good deal of the irrigated ground is such that plowing cannot well continue until the water is put on, and if not furnished at once, when it does come the need will be so immediate that there will be difficulty in supplying every leaseholder; but Thursday morning the water came down the canal in a flood. The mill will be put on water power to-day.

Humboldt.

Watchman: W. H. Roscoe, of Upper Mattole writes: "Seeding is nearly done here, so far as small crops are concerned. Fruit prospects are good. The roads from here to Petrolia are in as good condition as common in the spring. The fact is, the condition of all the roads in this section is remarkably good, considering the amount of rain that has fallen; and the reason for this is that they have had better care than formerly during the late fall and winter months, and this plainly shows that more attention during the winter months would be a great saving to the road fund. With the water properly turned off there would be but comparatively little work to be done in the spring. Lack of proper care of our roads during the winter months has been costing Humboldt county many thousands of dollars each year."

Kings.

Tulare Times: Mr. Harding, an Armona fruit-grower, says his crop of apricots and peaches will not bring him anything this year. Last year his fruit brought him \$8000.

Hanford Journal: S. Richmond of Armona will engage in a little scheme of his own to dispose of his last year's raisin crop, which is in the Home Packing Company's warehouse at Lemoore, having been packed in 50-pound boxes by that company last summer. Mr. Richmond will ship his raisins remaining on hand to Nashville, Tenn., and sell them direct to the retail dealers; but before making the shipment, he will go to Nashville and make a survey of the surroundings. The experiment will be watched with great interest by the growers of this section.

Hanford Journal: Lung Chung, a Lemoore Chinaman, who has made considerable money in past seasons buying orchards, has gone broke by reason of the recent frost. He paid \$9000 cash for the Ham-Dingley orchard, and the frost came, killed the peaches and apricots and left Lung, as he states it, "dead bloke."

Los Angeles.

Pomona Progress: Our best-posted horticulturists say that we are going to have an extraordinary crop of prunes this year and a large yield of peaches.

Monterey.

Salinas Journal: The sugar-beet farmers have about finished putting in their crop in this part of the valley. The crop never went in in better shape, and with a few showers an immense crop will be grown.

Salinas Democrat: A great number of good-sized

carp are being caught by anglers in the lagunas near town. They are said to be better eating than those caught other years, owing doubtless to the great volume of fresh water that has poured into the lagunas during the recent freshet of the streams heading in the Gabilan mountains.

Napa.

The Register says: "D. E. Greninger of Yountville was in Napa to-day. He has for some time had charge of the Groezinger vineyards. He says only 15 acres of the old vines of that property remain. Every year since phylloxera made its appearance, diseased roots have been removed and phylloxera-proof stocks have been planted and grafted until now there are 166 acres of the choicest varieties of grape vines on the old Groezinger place. Of these, about 100 acres are in bearing.

Riverside.

Press: Notwithstanding that all the pickers who can be secured have been at work picking oranges in the valley for the past ten days, and that the packing houses are running to their fullest capacity, the Fruit Exchange finds it impossible to keep up with the orders received, and has concluded to accept no more orders until those now in have been filled, regardless of advanced prices being offered. Offers are made of \$1.50 for Seedlings and \$2 for Navels. There are yet 67 carloads of unfilled orders on hand.

San Benito.

Advance: Some time ago a brace of Chinese pheasants were turned loose in the Gabilan mountains. Several of their progeny have been seen there this spring. The Chinese pheasant is an impudent and warlike fellow, and he will soon be king of the Gabilan hills. We are told that in Oregon, where they are plentiful, they will enter farmyards and engage in successful combat with roosters.

San Bernardino.

Chino Champion: The first planting of beets are ready for thinning, and some have already been thinned. Every team in the country is busy, and planting is going on as fast as it can be done. We need rain, and need it badly, although the beets so far planted are doing well. The force at work in the sugar factory now numbers about 75 men. The foundations for the new buildings are being gotten in, and the work will be rushed forward as fast as it can possibly be done. The new boilers will soon be in place, and the addition to the boiler house will then be built. The immense amount of work to be done will require a large force from now until the opening of the campaign.

Citrograph: A carload of Redlands fruit, which was sent to Liverpool, England, netted the growers \$2.49, and a correspondent of George W. Meade in England recommends further shipments, predicting even higher prices as the quality of Redlands fruit becomes better known.

Citrograph: We have this week noticed a rare quotation of prices in Redlands, it being eggs at 12½ cents per dozen. We do not believe that such figures can be looked upon with favor. There has been a revival of interest in poultry raising in California that gave promise of making our State self-sustaining in that respect; but at the prevailing figures it is cheaper to buy eggs than to feed poultry, and the importations of Eastern eggs, kept so long as to become an inferior article, and then thrown on the market at such figures, must discourage every attempt to meet demands with a home product.

San Diego.

National City Record: The 20-acre lemon orchard of Prof. Henry at Chula Vista is evidently doing finely in the lemon-producing line, as it is estimated that the trees now have on them in the neighborhood of 3000 boxes of fruit. The system of cultivation in use on the place is original with the owner, who was offered for the orchard the sum of \$14,000 this week. D. K. Adams is the manager of the ranch.

Santa Cruz.

Pajaronian: The strawberry season is very near, and the Pajaro grower expects to commence his regular annual exhibit in the San Francisco market before the close of the month. The season has been delayed this year on account of the weather.

Watsonville Rustler: M. A. Hudson is making extensive improvements on his 60-acre berry patch on the San Juan road. The ground is already flumed and water for irrigation will be turned on next week. When the berry season opens Mark will be strictly in it.

Solano.

Colusa Sun: We are not expert on pruning trees, but in riding over to and through the orchards of Vaca valley, the other day, we observed that almost every tree of a kind was pruned to look just like almost every other tree of the kind, and we concluded that experience had taught those people something about the way to do it. When we come home we do not find the trees alike; we find none of them looking like the Vaca valley trees. Now, we do not know that the Vaca people do the thing right, but there ought to be a right way to do the work, and if our orchardists are right the Vaca people are all wrong, and there should be a parley to see which is right, and one system adopted.

Sonoma.

Petaluma Courier: C. W. Adamson's fruit drier will be enlarged and otherwise improved for the coming season. This enterprise has been a success from the start, and it speaks well for the energy of the proprietor that the facilities have to be enlarged to accommodate the increasing business. A large number of hands will be employed in caring for the crop of this season, and much money will be put into circulation in Petaluma as a direct result. The enterprise started in a very modest way, without any flourish of trumpets, and it is a satisfaction to note its continuous prosperity.

Yorkville Cor. Cloverdale Reveille: Henry Baker, a stock buyer of Hopland, passed this way with a drove of swine, en route to Cloverdale, where he will ship to the San Francisco market. Mr. Baker offered 3½ cents here or 4 cents delivered in Cloverdale, for hogs.

The stockholders of the Hunt Bros. Fruit Packing Company of Santa Rosa have decided to increase the capital stock of the concern from \$50,000 to \$100,000. A strong effort is being made to

HORSE SENSE IN A FEW WORDS.

Stubblefield
April 8/94

"Ordinary" Mowers & Gentlemen
You have got the
hardest pulling mower I
ever backed up against.
I tackled one of them two
years ago and stuck to it
till it knocked me out.
The draft is the heaviest I
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pattern after the McCormick
No. 4 Steel Mower? Its draft
is extremely light making it
very easy on horse flesh.
Yours Truly
C. Horse

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THE WORLD'S FAIR

Committee, who tested the McCormick No. 4 Steel Mower in the only regular exposition field trials, in a heavy growth of timothy and clover, said, in their official report: "The efficiency of the machine is thus, under fair conditions, nearly 70 per cent. Ordinary figures for ordinary mowers are at least twenty pounds higher in total draft, with an efficiency of not above 60 per cent., which latter figure good machines should be expected to exceed." The McCormick is the lightest draft, and most effective grass cutter yet produced. [Highest Medal awarded.]

strengthen the company, to be in readiness for the opening of the fruit season.

Sutter.

County Treasurer Cope of Sutter county informed an Appeal reporter Saturday that jackrabbits are all the rage in Sutter county at the present time. The supervisors recently had increased the bounty from three to eight cents, and since that time one man appeared in the treasurer's office with 470 scalps. The sum of \$300 was paid out for jackrabbit and gopher scalps yesterday morning.

Tehama.

People's Cause: Stage driver Bouton took 22,000 hop roots to Mantion to-day. The roots arrived here from the Wheatland hop fields last evening. Six thousand of them belong to Myron Yager, 8000 to J. L. Burnham and 8000 to H. H. Wiendieck. Another consignment of 20,000 roots will arrive here to-night for Mr. Yager. About 1800 roots are planted to the acre. The Mantion country will soon have extensive hop fields.

Tulare.

Times: Capt. Berry is distributing German sugar-beet seed among our farmers for planting near and around Visalia in order to test our lands for sugar-beet culture. The product of this seed will be sent to the sugar factory at Watsonville for analysis and test as to its qualities in saccharine or crystallizable sugar. There is every likelihood of it proving a success.

Cor. Times: The water is low in the '76 ditch at present and farmers are complaining. The fruit crop is destined to be immense in this section this year. Unless we are favored with a good shower of rain within two weeks, the wheat crop will be a partial failure. While in the Hanford country last week, your correspondent noticed many wheat fields that are sadly in need of moisture. A rain just at present would certainly be a great boon to the tillers of the soil, and would do much toward relieving the present financial stringency.

Times: J. C. Brown brought a monster hen egg to the Times office Monday. It was produced on his ranch and measures 6½ inches in circumference the short way around and 7½ inches the long way around it. A dozen of such eggs would be worth as much as three dozen common eggs.

Ventura.

Democrat: This is a dry year. We would just as well look facts and the situation square in the face and admit it. The time has now passed when we could reasonably expect much more rain the present season, and the indications in that regard do not hold out much hope. And even if we should get rain, unless it comes within a very few days, it would not do much good so far as cereals are concerned. Much of the earlier-sown barley is turning yellow and sere and may be set down as beyond recovery. The later crops are looking better, and in many places are vigorous enough yet, and a very little more moisture this month would bring them out so that they would yield some grain and a good deal of hay. This applies particularly to grain which was sown on bean land; crops on other lands and on alkali tracts are already gone. Quite a number of acres of barley will be raised throughout the county, however, by irrigation, and there is not much danger of a hay famine under any circumstances. Fruit, so far, looks promising, and as the soil has plenty of moisture underneath, a heavy crop may be reasonably looked for. Two inches more of rain, which might accidentally come before May 10th, would produce corn and beans.

I WANT

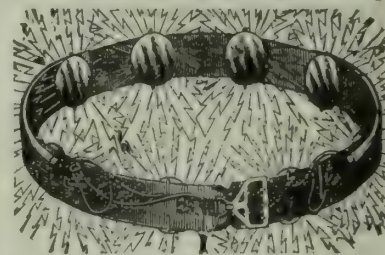
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ASK FOR THIS AXE.
USE NO OTHER.

Wood-choppers, try the

Kelly Perfect Axe

It will cut more wood

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The sharp in the blade

keeps it from sticking in

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Plants of this wonderful fruit can be had at Pajaro
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A fine assortment, best varieties, free from pests of
any kind. Prunus Simoni, Bing, Rostraver and
Murdoch Cherries, Black California Figs;
Rice Soft Shell and other Almonds, American
Sweet Chestnuts, Prapatariens Walnuts.
Hardy mountain grown Orange Trees. Our Oranges
have stood 22 degrees this winter without injury.
Dollar Strawberry, the best berry for home use or
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ALL KINDS OF
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Tokay, Emperor, Cornichon, Black
Ferrara, Black Morocco, Muscatel,
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\$5 and \$6 per 1000.

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ONE OF THE FOLLOWING COLLECTIONS OF PLANTS:

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- 15 Heliotropes,



- 20 Assorted Summer Flow-
ering Plants,
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- 10 Oleanders,
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DISTINCT VARIETIES. ALL PLANTS LABELED. TRUE TO NAME.

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Trees at prices to suit all purses. The Best Trees grown. We grow ALL our Trees and they are HARDIER than
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We have a few Foster, Early and Late Crawford, Susquehanna and Wager Peach trees and Simon, Clyman,
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01 Citrus Tree Collection.—1 Wash. Navel, 1 Med. Sweet, 1 Lisbon Lemon, 1 Tahiti and 1 Trifoliata Orange.

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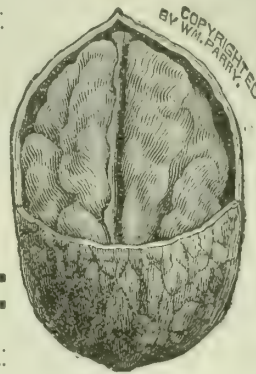
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:- SOFT SHELL :-

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Our Stock of TREES and VINES is Most Complete
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Best Assortment of RAISIN and TABLE GRAPES in California.

Early Shipping Plums a Specialty.

SPECIAL PRICES FOR TREES IN LARGE QUANTITIES.

DURING the last three years, trees grown on the FEATHER RIVER BOTTOM LANDS, at RIO BONITO, BUTTE
COUNTY, have been much sought after, and the demand for them is increasing all over the State where they
have been planted. Owing to the peculiar adaptability of the soil and climate of this section for growing nursery
stock, the trees making a very large and well-furnished system of root growth, and maintaining a correspondingly
strong and vigorous top, maturing the wood thoroughly, we are enabled to supply our patrons with the best of
trees, healthy in every respect, entirely free from insect pests, and in perfect condition for transplanting.

If You Are Going To Plant Trees, It Will Pay You To Corre-
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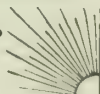
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JAPAN PLUM TREES.

Apple, Almond, Apricot, Cherry, Prune,
Peach, Fig, Olive, Orange and Lemon

TREES.

Small Fruits, Grape Vines,
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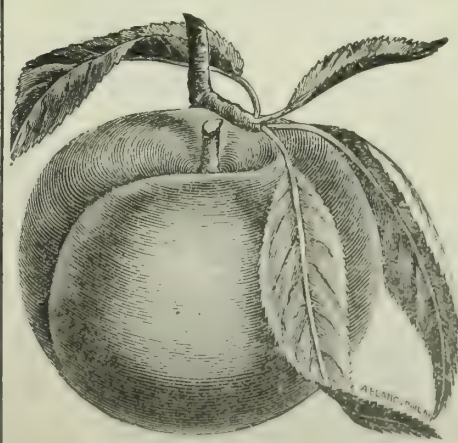
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FRUIT & ORNAMENTAL TREES
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Famous Meteoric Stones.

A meteoric stone, which is described by Pliny as being as large as a wagon, fell near Ægospotami, in Asia Minor, in 467 B. C. About A. D. 1500 a stone weighing 1400 pounds fell in Mexico, and is now in the Smithsonian Institution at Washington. The largest meteoric masses on record were heard of first by Captain Ross, the Arctic explorer, through some Esquimaux. These lay on the west coast of Greenland, and were subsequently found by the Swedish exploring party of 1870. One of them, now in the Royal Museum of Stockholm, weighs over 50,000 pounds, and is the largest specimen known.

Two remarkable meteorites have fallen in Iowa, says the San Francisco Call, within the past 20 years. February 12, 1875, an exceedingly brilliant meteor, in the form of an elongated horseshoe, was seen throughout a region of at least 400 miles in length and 250 in breadth, lying in Missouri and Iowa. It is described as "without a tail, but having a flowing jacket of flame. Detonations were heard so violent as to shake the earth, and to jar the windows like the shock of an earthquake," as it fell about 10:30 P. M., a few miles east of Marengo, Ia. The ground for the space of some seven miles in length by two to four miles in breadth was strewn with fragments of this meteor, varying in weight from a few ounces to 74 pounds.

On May 10, 1879, a large and extraordinary luminous meteor exploded with terrific noise, followed at slight intervals with less violent detonations, and struck the earth in the edge of a ravine near Estherville, Emmet county, Ia., penetrating to a depth of 14 feet. Within two miles other fragments were found, one of which weighed 170 pounds and another 32 pounds. The principal mass weighed 400 pounds. All the discovered parts aggregated about 640 pounds. The one of 170 pounds is now in the cabinet of the State University of Minnesota. The composition of this aerolite is peculiar in many respects; but, as in nearly all aerolites, there is a considerable proportion of iron and nickel.

It is generally held that meteors at one time or another formed integral parts of a comet. The meteor enters the earth's atmosphere from without with a velocity relative to the earth that is comparable with the earth's velocity in its orbit, which is 19 miles per second. By the resistance it meets in penetrating the air, the light and the other phenomenon of the luminous train are produced.

Florida Ants.

There are more ants to the square mile in Florida, says the Savannah News, than in any other country in the world. There are ants which will measure more than half an inch in length, and then there are ants so small that they can scarcely be seen to move with the unaided eye. There are red ants and black ants and troublesome ants. But as bad as they are, I have never heard of them eating out the seat of a man's trousers, as a missionary, the Rev. Mr. Wilson, once told the writer he saw the army ants do in India while the man was sitting on the earth for a few minutes beside him. But the Florida ants will take out lettuce and other minute seeds from the soil in which they are planted and actually destroy the beds. They will suck the life out of acres of young cucumbers and melon plants, uproot strawberry plants or cover the buds with earth to such an extent as to kill them. They will get into pie, pickle, sauce, syrup, sugar, on meat, in hash; will riddle a cake or fill a loaf of baker's bread till it is worthless. All remedies failing, I took to baiting them near their nests with slices of meat, bones, apple and pear parings, and when I had from 50,000 to 100,000 out, I would turn a kettle of boiling water on them. I have killed during the past week over a million in the space of a quarter-acre lot, and I have almost wiped them out. I had to do this to secure any lettuce plants, and many unobservant farmers complain of seedsmen when they should attribute their troubles to insects.

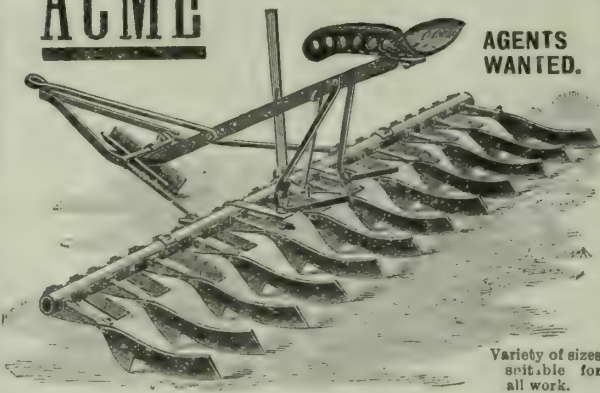
How's This!

We offer One Hundred Dollars Reward for any case of Catarrh that cannot be cured by Hall's Catarrh Cure.

F. J. CHENEY & CO., Props., Toledo, O. We the undersigned have known F. J. Cheney for the last 15 years, and believe him perfectly honorable in all business transactions and financially able to carry out any obligation made by their firm. WEST & TRUAX, Wholesale Druggists, Toledo, O. WALKING, KINMAN & MARVIN, Wholesale Druggists, Toledo, O.

Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Price, 75c. per bottle. Sold by all Druggists. Testimonials free.

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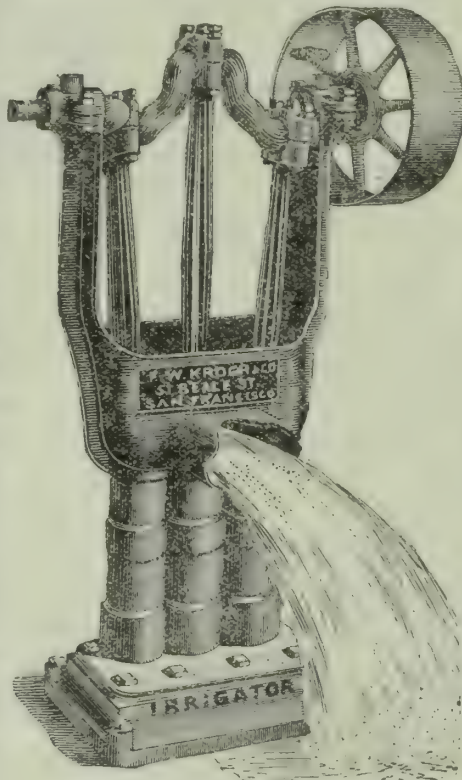
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Made entirely of cast steel and wrought iron and therefore practically indestructible.

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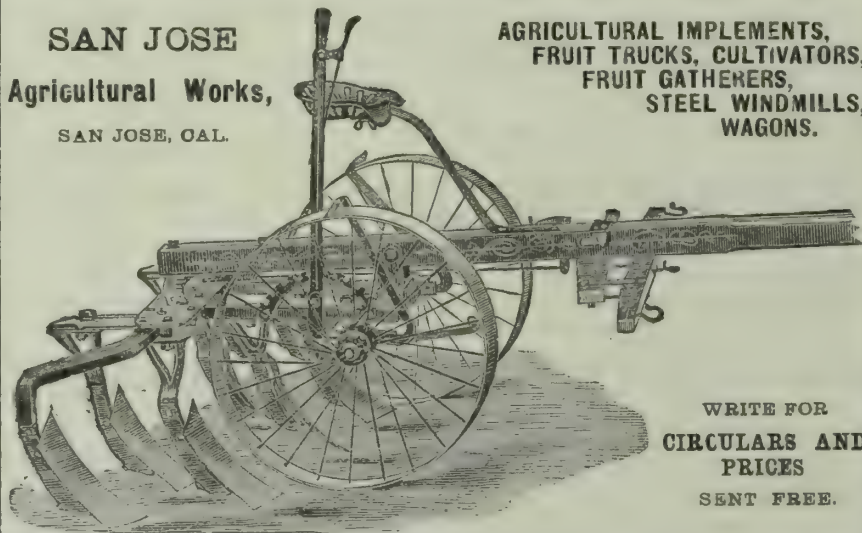
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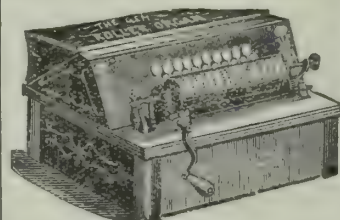
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Dividends paid to Stockholders.... 832,000

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FRANK McMULLEN.....Secretary
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S. F. MARKET REPORT

Market Review.

SAN FRANCISCO, April 11, 1894.

Wheat.

The quotation of 95c per cwt for the better class of shipping quality is largely nominal, as there is no buying for export purposes. Milling Wheat is lower, quotable at \$1.05@1.07 1/2. In the Call Board this morning there was weaker feeling, sales of spot Wheat, season's storage paid, being made at \$1.05 against \$1.10 yesterday.

Barley.

Sample trade is of modest proportions, but prices continue to show firmness. In the Call Board there is lively movement at irregular prices, though generally tending upward. There was a marked decline in December Barley yesterday afternoon, though prices recovered this morning under liberal transactions. We quote: Feed, 95@97 1/2c for fair to good quality and 98 1/2c@1 per cwt. for choice bright; Brewing, nominal at \$1.02 1/2@1.05, no sales being reported.

Dried Fruits.

Apples and Peaches are in limited offering. More attention is given to Prunes, and prices are advancing. Apples, 5 1/2@6c per lb for quartered, 5 1/2@6c for sliced, and 6@10c for evaporated; Pears, 5@8c per lb for bleached halves, and 2@4c for quarters; bleached Peaches, 7 1/2@10c; sun-dried Peaches, 5@6 1/2c; Apricots, Moorpark, 11 1/2@12 1/2c; do Royals, 10@12c for bleached and 6@7c for sun-dried; Prunes, 5@5 1/2c per lb for the four sizes; 5 1/2c for the five sizes, and 3 1/2@4 1/2c for small; Plums, 4 1/2@5c for pitted and 1 1/2 to 2c for unpitted; Figs, 3 to 4c for pressed and 1 1/2 to 2c for unpitted.

RAISINS—Trade light. Prices still favor buyers. London Layers, 75c to \$1.15; loose Muscatis, in boxes, 50@75c; clusters, \$1.25 to \$1.50; loose Muscatis, in sacks, 2 1/2 to 2 3/4c per pound for 3 crown, and 2c for 2 crown; Dried Grapes, 1 1/2c per pound.

General Produce Market.

OATS—This article shares in the general buoyancy now prevailing in the cereal market. Stocks are of good proportions, but no heavy arrivals are expected in the near future. Trade is active and of fair volume, so that the advantage of the situation is rather favorable to sellers, independent of other influences. We quote as follows: Milling, \$1.07 1/2@1.20; Surprise, \$1.25@1.30; fancy feed, \$1.20@1.22 1/2; good to choice, \$1.10@1.17 1/2; poor to fair, 90c@1.05; Black, nominal; Red, nominal; Gray, \$1.05@1.15 per cwt.

CORN—The market is decidedly against sellers. Stocks are being narrowed down pretty close, being in few hands. Besides fair local custom, there is still demand for export, some 9000 cwt going to Central America by steamer. Quotable at \$1.15@1.17 1/2 per cwt for Large Yellow, \$1.17 1/2@1.20 for Small Yellow and \$1.27 1/2@1.40 for White.

CRACKED CORN—Quotable at \$25.00@26.00 per ton.

CORNMEAL—Millers quote feed at \$24.50@25.50 per ton; fine kinds for the table, in large and small packages, 2 1/2@3 1/4c per pound.

OILCAKE MEAL—Quotable at \$37.50 per ton from the mill.

COTTONSEED OILCAKE—Quotable at \$32.50 per ton.

SEEDS—We quote: Mustard, brown, \$2@2.25; Yellow, \$2.75@3; Trieste, \$2.50@2.75; Canary, 3@4c; Hemp, 3 1/2@4 1/2c per lb; Rape, 2@2 1/2c; Timothy, 6 1/2c per lb; Alfalfa, 10@11c; Flax, \$3@3.25 per cwt. MILLSTUFFS—We quote: Rye Flour, 3 1/2c; Rye Meal, 3c; Graham Flour, 3c; Oatmeal, 4 1/2c; Oat Groats, 5c; Cracked Wheat, 3 1/2c; Buckwheat Flour, 5@5 1/2c; Pearl Barley, 4@4 1/2c per lb; Normal Nutrient, \$3 per case of 1 dozen cans; Breakfast Delight, \$3.25 per case of 2 dozen packages.

MIDDLINGS—Quotable at \$17@19 per ton.

BRAN—Is firm with advancing tendency. Quotable at \$15@16 per ton.

HAY—Unless rain comes very soon prices are likely to be further advanced. Choice offerings are held firmly at full figures. Wire-bound Hay sells at \$1 per ton less than rope-bound hay. Following are wholesale city prices for rope-bound hay: Wheat, \$12.50@17; Wheat and Oat, \$12@15.50; Wild Oat, \$12@13.50; Alfalfa, \$9@11.50; Barley, \$11@14; Clover, \$9.50@11; Compressed, \$11@14; Stock, \$9.50@10.50 per ton.

STRAW—Quotable at 75@85c per bale.

HOPS—Market inactive. Quotable at 14@16c per lb.

RYE—Is steadily going up in price. Quotable at \$1.05@1.10 per cwt.

BUCKWHEAT—Quotable at \$1.20@1.25 per cwt.

GROUND BARLEY—Quotable at \$21@22 per ton.

POTATOES—Some 128 sacks new crop arrived yesterday, being small in size and not quick of sale. We quote: New Potatoes, 1 to 2 1/2c per lb; Sweet, 75c@1.25 per cwt; Early Rose, 30@40c; River Burbanks, 25@40c; River Red, 20@30c; Oregon Burbanks, 50@90c; Oregon Garnet Chiles, 75@85c per cwt.

ONIONS—Quotable at \$2@2.50 per cwt for good stock and as high as \$3 for a fancy article.

DRIED PEAS—We quote: Green, \$1.25; Blackeye, \$1.65@1.65; Niles, \$1.50@1.75 per cwt.

BEANS—There is strong tone to the market. Some holders are asking fancy prices and expect to realize if rain keeps off much longer. We quote: Bayos, \$2.10@2.20; Butter, \$1.75@1.90 for small and \$2@2.20 for large; Pink, \$1.65@1.80; Red, \$2@2.35; Lima, \$2.65@2.80; Pea, \$2.25@2.50; Small White, \$2.30@2.50; Large White, \$2.40@2.50 per cwt.

VEGETABLES—Receipts of asparagus yesterday were 1662 boxes, and trade was not large enough to clean up, so that much surplus was on hand at a late hour. Rhubarb is as plentiful as ever, the arrivals yesterday morning footing up 536 boxes. About all the poor Green Peas were closed out yesterday at 25c per sack. Offerings now are good and fresh, the supplies yesterday being nearly 400 sacks. No Tomatoes around just now. Consignments of String Beans continue limited. We quote as follows: Cucumbers, 40@50c per dozen for common and 75c@1.25 for good to choice; Asparagus, 50@75c per box for the ordinary run and \$1@1.25 per box for choicer

quality; Rhubarb, 40@75c per box; Green Peas, common, 2 1/2@3c per lb; Sweet do, 3 1/2@4 1/2c; String Beans, 25c per lb; Marrowfat Squash, — per ton; Hubbard Squash, — per ton; Green Peppers, — per lb; Tomatoes, — per box for poor to fair and — per box for good to choice; Turnips, 75c per cwt; Beets, 75c per sack; Parsnips, \$1.25 per cwt; Carrots, 35@40c; Cabbage, 35@40c; Garlic, 1@2 1/2c per lb; Cauliflower, 60@70c per dozen; Dry Peppers, 15c per lb; Dry Okra, — per lb.

FRESH FRUIT—Stocks of Apples are not large, though enough to meet all demands. We quote: Apples, 50@75c per box for common, 85c@1.25 for fair to good, and \$1.50@1.75 for choice.

BERRIES—There was a wider range in prices yesterday, sales being reported at \$1@2 per drawer.

CITRUS FRUIT—Receipts of Oranges are fair, and good stock is demanded at steady prices. The tri-weekly auction sales are well attended, and catalogues clean up promptly. Fair to choice Navel Oranges, \$1.35@2.50 per box; Seedlings, \$1@1.50; Mexican Limes, \$4@4.50 per box; California Limes, 50@60c for small box and 75c@1 for large; Lemons, Sicily, \$4@5; California Lemons, 75c@1 for common and \$1.25@2 for good to choice; Bananas, \$1.50@2.50 per bunch; Hawaiian Pineapples, \$2.50@3; Mexican Pineapples, \$3@3.50 per dozen.

NUTS—Peanuts are in moderate supply and steady in price. Good representation of other kinds. We quote: Chestnuts, 6@8c per lb; Walnuts, 6@7 1/2c for hard shell, 8@9c for soft shell and 8@9c for paper shell; California Almonds, 10@11c for soft shell, 6@7c for hard shell and 11 1/2@12 1/2c for paper shell; Peanuts, 3@4c; Hickory Nuts, 5@6c; Filberts, 10@10 1/2c; Pecans, 5@8c for rough and 8@10c for polished; Brazil Nuts, 10@11c; Cocoanuts, \$5@5.50 per 100.

HONEY—There is good tone to the market, owing to dry weather and poor crop prospects. We quote: Comb, 10@11c per lb for bright and 8@9c for dark to light amber; water white extracted, 4 1/2@5c; amber extracted, 4 1/2c; dark, 4 1/2c per lb.

BEEFWAX—Quotable at 26@28c per lb.

BUTTER—Arrivals are heavy, but the demand is good, and there is no large accumulation of stocks. Prices, however, remain easy. New pickled roll is coming forward. We quote as follows: Fancy Creamery, 17@18c; fancy dairy 16@16 1/2c; good to choice, 14 1/2@15c; common grades, 13@14c; store lots, 12@12 1/2c; pickled roll, 17@18c per lb.

CHEESE—Prices are soft, as offerings are in excess of the demand. We quote: Choice to fancy, 9@10c; fair to good, 8@8 1/2c; Eastern, ordinary to fine, 13@14 1/2c per lb.

EGGS—The outlook is not promising for sellers, as supplies are large, and reports say that more than one carload of eastern is on the way here. We quote: California ranch, 13@14c; store lots, 11@12c per dozen.

POULTRY—Young stock is in request. Some dressed Turkeys are coming in that sell under quotations, being in poor order. We quote as follows: Live Turkeys—Gobblers, 9@10c; Hens, 12@13c; dressed Turkeys, 10@12c per lb for Gobblers and 12@13c for Hens; Roosters, \$3.75@4 for old and \$6.50@7.50 for young; Broilers, \$4@5.50; Hens, \$4@6; Ducks, \$4@6; Geese, \$1.50@2 per pair; Pigeons, \$2@2.50 per dozen.

GAME—Nominal.

PROVISIONS—The market is in fairly good shape, trade being about as active as could be desired for the season. Prices are moderately steady and no radical changes are expected. We quote: Eastern Sugar-cured Hams, 12c; California Hams, 10@11c; Bacon, Eastern, extra light, 12c; medium, 9 1/2c; do, light, 10c; do, light, boneless, 11 1/2c; light, medium, boneless, 10 1/2c; extra light, sugar-cured, 13 1/2c; Pork, prime mess, \$14@15; do, mess, \$17@18; do, clear, \$19.50; do, family, \$22 per bbl; Pigs' Feet, \$11.50 per bbl; Beef, mess, bbls, \$7.50@8; do extra mess, bbls, \$8.50@9; do, family, \$9.50@10; extra do, \$11@11.50 per bbl; do, smoked, 10c; Eastern lard, tierces, 7 1/2@7 3/4c; do prime steam, 9 1/2c; Eastern pure, 10-lb pails, 10c; 5-lb pails, 10 1/2c; 3-lb pails, 10 1/2c; California, 10-lb tins, 9c; do, 5-lb, 9 1/2c; do, kegs, 10c; do, 20-lb buckets, 9 1/2c; compound, 7c for tierces.

WOOL—Football Wools are beginning to arrive, and some little activity may be expected soon. We quote spring: Year's fleece, per lb., 6@7c; Six to eight months, San Joaquin, 7@10c; Oregon and Washington: Heavy and dirty, 6@7c; good to choice, 8@10c; valley, 10@13. We quote fall: Northern defective, 5@6c; Southern and San Joaquin, 3@4c.

HIDES AND SKINS—Quotable as follows:

	Sound.	Culls.
Heavy Steers, 54 lbs up, 1/2 lb. 4 1/2@5 1/2	3 1/2@4 1/2	
Medium Steers, 48 to 56 lbs. 4 @—c	3 @—c	
Light, 42 to 47 lbs. 3 1/2@3 3/4	2 1/2@2 3/4	
Cows, over 50 lbs. 3 1/2@3 3/4	3 @—c	
Light Cows, 30 to 50 lbs. 3 1/2@3 3/4	2 1/2@2 3/4	
Stags 3 @—c	2 @—c	
Kips, 17 to 30 lbs. 4 @—c	3 @—c	
Veal Skins, 10 to 17 lbs. 5 @—c	4 @—c	
Calf Skins, 5 to 10 lbs. 7 @—c	6 @—c	
Dry Hides, usual selection, 7c; Dry Kips, 7c; Calf Skins, 7c; Cull Hides, Kip and Calf, 4c; Pelts, Shearling, 10@20c each; do, short, 25@35c each; do, medium, 40@50c each; do, long wool, 50@75c each; Deer Skins, summer, 25c; do, good medium, 15@20c; do, winter, 5c per lb; Goat Skins, 25@40c apiece for prime to perfect, 10@20c for damaged, and 5@10c each for Kids.		

TALLOW—We quote: Refined, 5 1/2@5 3/4c; rendered, 4 1/2@4 3/4c; country Tallow, 4@4 1/2c; Grease, 3@3 1/2c per lb.

San Francisco Meat Market.

There is a little stronger feeling to the better class of Beef and occasional sales are made at a trifling advance. Mutton continues plentiful and cheap. Lamb is lower. Following are the rates for whole carcasses from slaughterers to dealers:

BEEF—First quality, 5 1/2c; second quality, 4 1/2@5c; third quality, 3 1/2@4 1/2c per lb.

CALVES—Quotable at 4@5c for large, and 5@7c per lb for small.

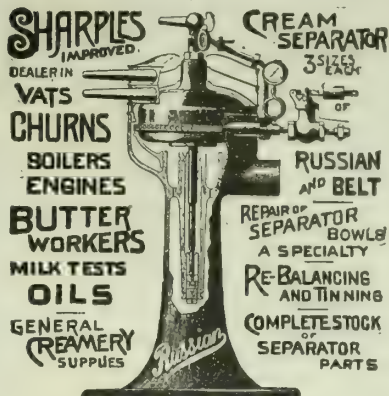
MUTTON—Quotable at 5 1/2@6 1/2c per lb.

LAMB—Spring, 10@11 1/2c per lb.

PORK—Live Hogs, on foot, grain fed, heavy and medium, 4 1/2@4 3/4c; small Hogs, 5c; stock Hogs, 4@4 1/2c; dressed Hogs, 5 1/2@7 1/2c per lb.

VAN DRAKE & TAYLOR, 523 MISSION ST., SAN FRANCISCO, Cal.

PACIFIC COAST AGENTS



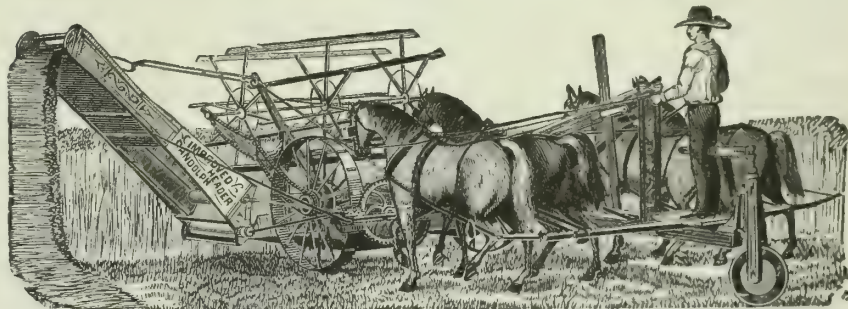
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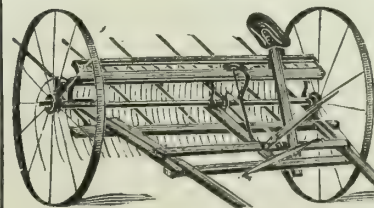
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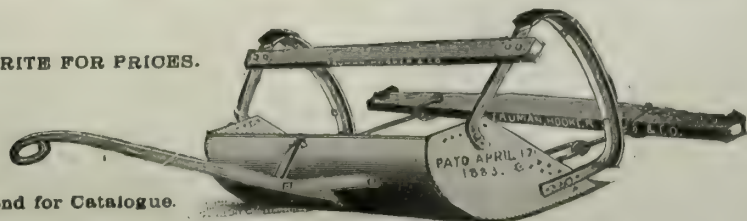
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HOOKE & CO., 16 and 18 DRUMM ST., SAN FRANCISCO.

The Secretary's Column.

Continued from page 292.

ferent sections of the State. Circulars have been sent to each master of subordinate granges in the State, and it is hoped they will at once act in the premises for the entertainment of the Worthy Lecturer.

THE GRANGE CONGRESS.

The Executive Committee of the State Grange announces the following programme for the Grange Congress to be held at the Midwinter Fair in this city April 13th and 14th:

2 P. M., FRIDAY, APRIL 13, 1894.

- 1—Opening Chorus.....Choir.
- 2—Prayer.....S. Q. Barlow, Chaplain California State Grange.
- 3—Instrumental Duet.....Miss Gussie Wilcox and Mrs. Frankie Greer, Organist Cal. State Grange.
- 4—Address of Welcome.....Hon. M. H. De Young.
- 5—Response.....A. P. Roache, Master California State Grange.
- 6—Song.....Grange Choir.
- 7—Address.....Hon. Alpha Messer, Lecturer of National Grange.
- 8—Recitation.....Mrs. E. Z. Roache, Watsonville Grange.
- 9—Grange Chorus.
- 10—Extra.

7:30 P. M., FRIDAY, APRIL 13, 1894.

- 1—Grange Chorus.
- 2—Address....."Women as Horticulturists," Mrs. E. L. Watson, San Jose Grange.
- 3—Vocal Solo.....Miss K. Manlove, Sacramento Grange.
- 4—"Progress and Future of the Dairy Interest," E. W. Steele, San Luis Obispo.
- 5—Recitation.....Mrs. Mercene, San Jose Grange.
- 6—Paper.....B. F. Walton, Yuba City, President State Fruit Exchange.
- 7—Instrumental Music.....Stockton Grange.
- 8—"Salient Points of the Grange Mission," S. S. Goodenough, Lecturer Cal. State Grange.
- 9—Music.
- 10—Extra.

2 P. M., SATURDAY, APRIL 14, 1894.

- 1—Grange Chorus.
- 2—"Agriculture in Relation to National Progress," Hon. E. W. Davis, Overseer National Grange.
- 3—Quartette.....Stockton Grange.
- 4—"Horticulture in Its Relation to California Agriculture," Hon. N. P. Chipman.
- 5—Vocal Solo with piano and flute.....San Jose Grange.
- 6—Extra.

7:30 P. M., SATURDAY, APRIL 14, 1894.

- 1—Grange Chorus.
- 2—Address.....W. Walter Greer, Overseer California State Grange.
- 3—Song.....Eden Grange.
- 4—Essay.....Mrs. R. Taylor, Pescadero.
- 5—Extra.....American River Grange.
- 6—Instrumental Solo.....San Jose Grange.
- 7—"Education in Its Relation to Agriculture," Frank S. Chapin, Tulare Grange.
- 8—Solo.....W. D. Houx, Two Rock Grange.
- 9—Grand Closing Ode.....Choir.

This programme is subject to change by the Executive Committee.

Bro. A. P. Roache will accompany Bro. Messer in his tour of the State, and this office expects to hear good reports from all those places named in the circular sent out, where meetings are to be held. I trust every one will turn out and give the Worthy Lecturer a hearty welcome.

Let us all remember that Bro. Messer is not only one of our great family, but our guest. Let us make it pleasant and agreeable for him while in our midst, so that in after years when seated beneath his own tree and vine, he may refer back to the days of '94 with pleasant remembrances of the patrons of California. Let us all unite in extending him a hearty welcome, and hope his stay with us may be of sufficient length to convince him that our attachment for representatives of the grange is real and lasting.

Around our quiet hearthstones are to be found the important personages who are to mould, educate and control the future destiny of this State, and it is fondly hoped the influences of our noble order through its National, State and Subordinate Granges will keep pace with the rapidly developing country, and even be strong enough to imbue each unfolding mind with a love for rural life and an attachment for home and country.

May the labors of the Worthy National Lecturer go into the history of the grange in this State as the wisest, the most harmonious and the best work for the good of the order that has ever been done. May the spirit of brotherly love prevail, and may the meetings laid out for Bro. Messer be prompt and well attended as the importance of the occasion demands!

PROGRAMME FOR THE CAMPAIGN OF 1894.

The following programme has been arranged by the Executive Committee of the California State Grange. Bro. Messer, Worthy Lecturer of the National Grange, and Bro. Roache, Worthy Master of the California State Grange, will address the

members of the order and citizens at the places herein named:

Tulare.....	Saturday,	April 7
Selma, Fresno Co.....	Monday,	" 9
Merced, Merced Co.....	Tuesday,	" 10
San Francisco (Arrive).....	Wednesday,	" 11
" Congress.....	Friday,	" 13
".....	Saturday,	" 14
Eden and Temescal—Alameda Co. (Address at Haywards).....	Monday,	" 16
Pescadero.....	Wednesday,	" 18
Watsonville.....	Friday,	" 20
San Jose.....	Saturday,	" 21
Alhambra, Danville and Valley—Contra Costa Co. (Address at Danville).....	Monday,	" 23
West San Joaquin (Address at Tracy).....	Tuesday,	" 24
Stockton, Waterloo and Washington—San Joaquin Co. (Address at Stockton).....	Wednesday,	" 25
Santa Rosa, Sebastopol, Bennett Valley and Glen Ellen—Sonoma Co. (Address at Santa Rosa).....	Thursday,	" 26
Petaluma and Two Rock—Sonoma Co. (Address at Petaluma).....	Friday,	" 27
Sacramento, American River and Enterprise—Sacramento Co. (Address at Sacramento).....	Saturday,	" 28
Elk Grove and Florin—Sacramento Co. (Address at Florin).....	Monday,	" 30
Lodi, Woodbridge, New Hope and Lockeford—Address at Lodi.....	Tuesday,	May 1
Roseville—Placer Co.....	Wednesday,	" 2
Wheatland—Yuba Co.....	Thursday,	" 3
Grimes and Antelope.....	Friday,	" 4
North Butte, March, South Sutter and Yuba City—Address at Yuba City.....	Saturday,	" 5

By order of the Executive Committee.
DON MILLS, Secretary.

From Yuba City.

TO THE EDITOR:—Yuba City Grange held a well-attended meeting yesterday and transacted considerable routine business. Several delayed reports were presented, discussed and adopted. The financial standing of the grange was found in good condition, and the books of the officers had been well kept the past year. Owing to unavoidable circumstances the grange paper did not come to an issue. Whether the press became disabled or the forms got pied I am unable to say, but notwithstanding its non-appearance, the time of the grange was well occupied in other directions.

The itinerant of the Lecturer of the National Grange, Hon. Alpha Messer of Vermont, and A. P. Roache, Master of the California State Grange, as recently adopted by the Executive Committee, was read, and on motion a committee of three was appointed, with full powers to make all necessary arrangements suitable to the occasion. The committee consists of Past Masters P. L. Bunce, B. F. Frisbie and George Ohleyer of Yuba City Grange, and on a further motion the acting masters of the other three granges in the county were added to the committee. There was no desire, however, to dictate to the other bodies, but simply to invite their co-operation. The special reason for this arose from the fact that the distinguished visitors are announced to speak but once in the county, and the members of the order are informed that Yuba City was named for the joint meeting, and Saturday, May 5th, was selected as the day.

The committee of arrangements held a preliminary consultation and concluded to have the meeting take place in town, provided adequate accommodations can be secured.

A literary programme is to be prepared by the worthy lecturer of Yuba City Grange, in conjunction with our sister granges, this to be elastic and to be interspersed with the addresses to be delivered by the speakers.

It is hoped that similar actions will be taken by the other granges of this county at their approaching meetings, to the end that a rousing good time may be had and the cause of the order advanced.

The writer will endeavor to keep the RURAL advised as regards the progress of preparations for the great social event. It may be proper to state that the affair will be public, and the dinner will be of the picnic variety.

Now, a word as to the

WEATHER AND CROPS.

A subject that is always in order, even in the grange column, at this season of the year.

It is useless to disguise the fact that our farmers want rain, not much, perhaps, but yet a little to soften the crust. It is something like six weeks since rain has fallen in quantity to do any good, and the slight attempts have always been succeeded by the customary north wind, which seems to neutralize the beneficial effects of the sprinkle. Yet, notwithstanding these apparent drawbacks, grain is growing nicely; it has a re-

markably good, fresh color, indicating that much of it will make a good crop without more rain, if the month of May shall be true to its tradition of cool weather, with damp, ocean breezes. The recent warm weather, the first of the season, is causing a rapid growth of all vegetation, which includes the orchards and forests as well as the fields. No more beautiful sight was ever witnessed by man since he took his departure from Paradise than the dark green fields covered with wheat two feet tall, the numerous orchards and vineyards covered with new foliage and fruit blossoms, and the air laden with sweet perfume. These things may and do seem commonplace to the permanent resident, but to the wanderer they have an unspeakable charm. Just think, as the golden orange yet lingers on the trees in large numbers, to be enjoyed at will, the new fruit is already making its appearance on the almond, the apricot, the peach and the pear trees with wonderful fertility.

GEORGE OHLEYER.

Yuba City, April 8, 1894.

The Geologic Age of the World.

Prof. C. D. Walcott expresses the opinion—contrary to that entertained by some scientists—that geologic time is not to be measured by hundreds of millions of years, but simply by tens of millions. This is widely different from the conclusion arrived at by Sir Charles Lyell, says the *Scientific American*, who, basing his estimate on modifications of certain specimens of marine life, assigned two hundred and forty millions of years as the required geologic period; Darwin claimed two hundred million years; Crowell, about seventy-two millions; Geikie, from seventy-three million upward; Alexander Winchell, but three million, while McGee, Upham and other recent authorities claim from one hundred million up to six hundred and eighty million. The data presented by Dr. Walcott, showing the distribution of geologic time, or the different periods of sedimentary rocks, give two million nine hundred thousand years for the cenozoic and pleistocene, seven million two hundred and forty thousand for the mesozoic, seventeen million five hundred thousand for the paleozoic, and a like period to the latter for the algonkian—a total of forty-five million five hundred thousand years.

Worthy of Endorsement.

We would invite the attention of our friends and patrons to the advertisement of John H. Drumgold, which appears in our columns. Mr. Drumgold is an expert manufacturing jeweler, watch-maker and diamond setter, carrying a superior stock of choice diamonds, watches and solid gold jewelry.

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A St. Petersburg editor has hit upon the notion of printing his journal on paper suitable for making cigarettes. It is said that its circulation has been largely increased by this means, as the Russians are largely given to smoking cigarettes, which they make themselves.

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517,188.—WINDOW SCREEN—O. H. Bartlett, Jr., Pomona, Cal.
517,021.—HAMB AND COLLAR—D. K. Bill, Hillsborough, Oregon.
517,041.—FRUIT PICKER—W. H. Haw, Fields Landing, Cal.
517,219.—TR. CR.—K. Hickman, Red Bluff, Cal.
517,118.—BUBBLE BLOWER—P. D. Horton, Oakland, Cal.
517,923.—CANE—John Lee, San Mateo, Cal.
517,889.—CAR COUPLING—J. D. Locke, Coosume, Cal.
517,412.—DELIVERING GOODS—A. F. M. M. S. F.
517,991.—ADDING MACHINE—W. K. Nichols, S. F.
517,192.—HO-M COUPLING—J. M. Prior, Carson, Nev.
517,362.—STUMP EXTRACTOR—G. B. Pulley, Cleone, Or.
517,194.—TRUSS—C. B. Rostel, Jacksonville, Or.
517,243.—TELEPHONE SYSTEM—Sabin & Hampton, S. F.
517,306.—DISCHARGE FOR CANS—A. H. & T. A. Schluster, Oakland, Cal.
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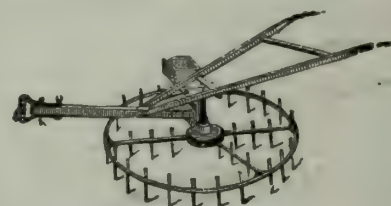
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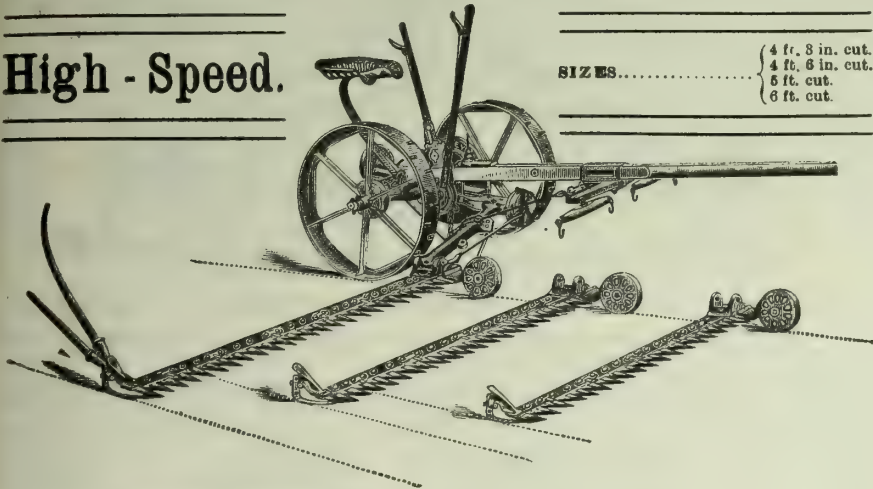
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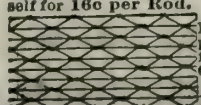
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The Situation as to Horse-Breeding.

Before giving up the breeding of horses and declaring the business dead, will it not be well to take a candid practical view of the case, and before throwing away an advantage already gained, consider well what has brought on present conditions, whether the causes are likely to continue indefinitely, and if not, how best to take advantage of the change when it comes. Nearly every kind of business has had its boom and reaction during the last twenty years, and the horse business has been one of them. Its effects have been and are felt over a wider extent of country than almost any other business, because it is so intimately connected with every other. Many breeders attribute the present condition of the horse market to over-production, and the introduction of electricity. The over-production has been entirely of the cheaper grades, and this class is what is being displaced by electricity. Electricity can never take the place of the heavy draft or fine coach horse. General business depression has had more to do with the fall in the horse market than anything else. Nearly every one is economizing and doing without or making the best of what they have. That this condition will last long no one believes. A renewed demand is among the certainties of the future. When this fresh demand comes there will be a short supply to meet it, because of the falling off in breeding for the past three years and the probable continuance of it for a year or two to come. Horses, as a rule, are short lived animals. The visible supply is being used up at a very rapid rate, and the fact that it takes five years to produce a horse ready for market is lost sight of by the croakers who are now and have been for three years crying the horse business down. Another fact is that the best time to engage in the production of any staple commodity is when it is down and not when it is booming. So many farmers have learned by sad experience that they cannot produce salable horses from ordinary stallions and have given up the attempt, that the chance for those who can and do raise first-class horses in the future will be greatly improved. Taking past experience and a candid view of the future of this country, it would seem that now is the right time for those farmers who are favorably situated to take hold of high-class horse breeding in earnest. They can now secure a choice selection of mares at moderate cost and buy first-class stallions at "rock-bottom" prices. The latter can now be bought cheaper than they are likely to be again for years, for the reason that this year will about use up the stock of imported stallions on hand and good ones cannot be imported to sell at prevailing prices. Think on these things. Should not, under the circumstances, the owners of mares be more particular than ever in their choice of stallions and breed more judiciously than ever for the inevitable future market? The present conditions are simply the result of bursting boom bubbles. This country is not going to destruction; business is settling down to a sound basis, and a healthy reaction is sure to follow. A revival in general business will bring a quick and strong demand for horses, and the man who then has good ones can name his own price for them. The main point in breeding is the choice of a stallion, and care should be taken to buy only the best and from reputable importer.

There has been lately landed in San Francisco the finest lot of imported Percheron and French Coach stallions ever brought to the Pacific Coast. This stock ranges in age from two to six years, and was selected in France by the veteran importer, Leonard Johnson, who for many years was foreign buyer for M. W. Dunham, of Wayne, Ill. Mr. Johnson has personally selected and brought to this country over Two Thousand Horses, and is universally acknowledged to be the best judge of Draft Horses in America. Each animal in this lot is a good one, not only individually, but of the best possible breeding, as is attested by the certificates of registry in both the Percheron stud-books of France and America. A satisfactory guarantee given that each stallion will get sixty per cent of colts. This is a rare chance to get a first-class stallion, as no such stock as this has ever been offered for sale here at as low figures as this will be sold for. Time given on approved paper. STABLES—Close to Midwinter Fair, on Fifth avenue, opposite Race Track, next door to Scott & McCord's Feed Store, San Francisco, Cal. Take Geary street car. For further information and catalogues, address the Secretary of the American Percheron Horse Breeders' Association, S. D. THOMPSON, OCCIDENTAL HOTEL, SAN FRANCISCO.

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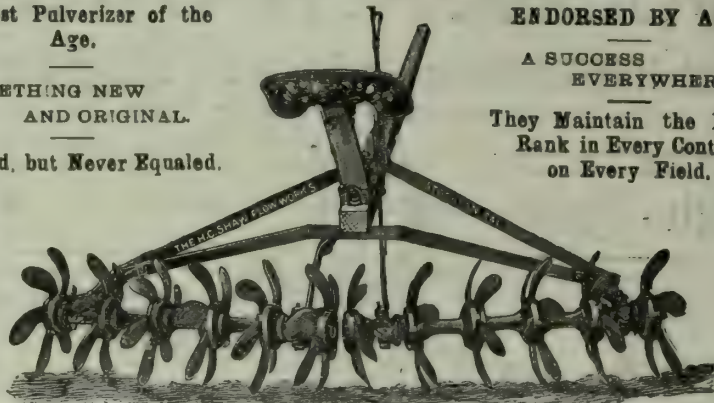
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PACIFIC RURAL PRESS

Vol. XLVII. No. 16.

SAN FRANCISCO, SATURDAY, APRIL 21, 1894.

TWENTY-FOURTH YEAR.
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THE PRUNE HORSE—A FEATURE OF THE SANTA CLARA EXHIBIT AT THE MIDWINTER FAIR.

AND NOW comes the "Prune Horse," which won the first heat at Chicago, and is now in for the second at the Sunset City. This animal has doubtless surprised even his breeders in the way he gets over the ground of popularity. It is claimed that he did more to advertise the

prune product of Santa Clara county at the World's Fair than any other more dignified display could have possibly done. The prune horse was "one of the things to see" all through the Chicago season. So notable an affair should be seen in the Santa Clara building by all who go

to the Midwinter Fair. The engraving gives the main points of his composition and environment. Horse and rider have consumed in construction 510 pounds of prunes and 80 pounds of other fruits. In his occasional grooming additional amounts are employed.

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ALFRED HOLMAN.....Editor
E. J. WICKSON.....Special Contributor

San Francisco, April 21, 1894.

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The Week.

However we may denounce the weather this spring we have to credit it with a certain amount of honesty and frankness. It has been dry as dust, and it has not assumed to be anything else. There have been dry times when the clouds have flitted idly and vexingly about, always promising and nothing doing. This spring it has been a clear, straight drouth with the sky free from cloud and the wind north and dry. It has given one the impression, not that it wouldn't rain, but that it couldn't rain and that was all there was of it.

Still the people have looked and hoped until we have passed the date when the greater area of the State gets spring rains of any account, and for such regions hope of anything in the shape of annual crops except by irrigation must be laid away for the year. It only remains to be seen how far the irrigated area and the tree and vine area will go toward sustaining the people for a year. The ample reports from various parts of the State, which we print in this week's RURAL, show how ill the situation is, though it is apparent that the local writers did as well as they possibly could with a threatening outlook.

Near the coast and in the valleys in the upper part of the State there is still chance that showers may avail for something. The last half of April usually drops nearly an inch of rain in San Francisco and more or less in other northern and central areas. As we write there is no promise of that inch, though it may come with a rush if the storms should enter the country at the right latitude and with the right direction. People are waiting with deep concern for the weather events of the next few days. Meantime, grain and hay prices are advancing because of the demands of local feeding and the prospect of short supplies, and the value of everything that has a mouth to eat with is decreasing. The great hope of the State for the year is the fruit crop and fortunately all reports of the outlook in that direction are as favorable as could be asked. Where would California be without her fruit crop is a question which suggests itself, but it is unanswerable because California without this peerless product would not be California.

Northern Pacific Coast Fruits.

Our sister States on the north propose to proceed forthwith with their invasion of the Eastern fruit markets and to try lances with California producers in an important commercial conquest. The northern coast scribes and their railway friends seem disposed to take the ground that a northern advance will mean a retreat for the California growers, for they say, in tender phrase, that the advantages of the north "will drive the California product out of the market." We do not suppose that the northern fruit-growers, or at least the more intelligent of them, are anticipating any such disaster to California. They cannot be so wise in their own conceit as that. Most of them know what advantages California has in experience, in natural adaptations, etc., and the most they can expect is to share the benefits of the business so far as northern limitations allow. But it is idle to argue that point now.

We look upon the matter from an altogether different point of view from that taken by northern reporters and dispatch makers. It seems to us that all that they can do at the north in the way of securing more favorable railway rates will redound also to our advantage rather than to our detriment. The following is a portion of a dispatch from Tacoma, April 17:

The reduced fruit rates from eastern Washington to Montana, St. Paul, Minneapolis and Chicago have not been decided upon, but will be this week. The object is to give Washington fruit an advantage over the California product in those markets, citrus fruits, of course, excepted. Washington's fruit crop promises to be five times larger than ever before. Eastern wholesalers write that it will be an important factor in this year's supply, because of the injury done the Eastern crop by the late frosts.

We are quite sure that managers of railways from California to eastern markets will not sit idly by and allow northern lines to carry fruit so low as to interfere with their own traffic. There is too much revenue to the roads from the fruit business to lose. We believe that every point the northern growers can get from transportation companies will be met by the southern lines, and this will be to the advantage of our growers and allow a vastly wider distribution of fruit to be made at the East. Of course the eastern receivers tell our northern friends that they want their fruit. They always like consignments to sell, and the more California does in selling her own fruit the farther eastern merchants will seek consignments from new regions. We do not see any menace to our interest in that. The immensity of the eastern fruit demand and the requirements which hedge about the production of good shipping fruit give an unclouded outlook for prosperity to those who can produce the best fruit at the lowest price. California has no reason to be appalled by that issue.

But there is another line to the progress of the northern growers, and that is to supply their own coast cities with the produce of the interior regions. Hitherto California has sent much fruit north by sea, and this trade it is hoped to rule out by low local railway rates. For example, the rates promised within the State of Washington are as follows:

North Yakima to Tacoma, cantaloupes and watermelons, 75 cents per 100 pounds; all other fruits and vegetables, 85 cents per 100 pounds; Walla Walla to Tacoma, fruits and vegetables, \$1.25 per 100 pounds. The new rates show a large reduction over the rates which were in effect previous to the latter part of last year's fruit season. The rates made to Tacoma will probably apply also to Seattle, and a proportionate reduction on fruit rates from Yakima and Walla Walla will be made to Portland via Tacoma.

We are glad the northern growers are securing such points, but of course they do not settle the question of California fruits in northern markets. The ocean is not to be dried up by new local freight schedules, and water-traffic people are not going to see their business reduced without doing something. So long as competition exists, we do not see a menace to any legitimate fruit trade in low transportation rates. If the tide of prosperity should return to the northern-coast interests and industries, and the country should develop as its resources warrant, the inflow of California fruit by water will vastly increase instead of decline. For it is not only citrus fruits which California has the call upon by virtue of her southerly latitude and protecting environment. California will have weeks of profitable trade before the northern fruit ripens, and there are other very desirable orchard fruits than citrus which the northern people will always have to leave out of their calculations. It is such considerations as these which show that northern anticipations of excluding California fruits from northern coast markets are and will always be unwarranted; and, we repeat, we believe it is the overzealous reporter, the ambitious railway promoter and the designing tradesman who afflict such views upon the public. The intelligent fruit-grower has broader knowledge and sounder sense.

A BOSTON merchant is quoted as saying that California dried fruits are largely replacing foreign products in that

market. He believes that the sales of California prunes in Boston this year will amount to more than those of all the countries from which prunes are imported into the United States combined. Raisins, too, are passing the Malaga raisins in cheaper grades. The fine table fruit is not yet so good, though it is improving every year, but the cooking or loose raisins are almost entirely taking the place of the imported ones.

Dry Year Topics.

In answer to our claims of the desirability of an all-around conference among our readers as to the feasibility of summer crops on moist land, and how to grow them, we are getting more inquiries for information than contributions of it. It really seems something of a new idea to many that they can do considerable in a small way in spite of the harshness of the season, and they ask how such crops as we have mentioned can be grown. There are hundreds of our readers who are doing such things, and we hoped they would volunteer their experience, as indeed they may do later. However, we accept the issue on the line of the inquirers, and will begin next week a series of papers on how to grow summer crops on moist land without irrigation or on dry land by the use of water. While these papers are proceeding, we hope the discussion and contribution of individual results in such lines will come in freely.

We welcome also notes on the handling of land in a dry time, to prevent evaporation and to retain every possible drop of water. The following will illustrate how an old practice may become temporarily very important:

TO THE EDITOR:—Yours of the 7th is certainly to the point. Following the example of my grandfather and an old New Jersey uncle and my own experience in the States, I am plowing and harrowing as quickly as a couple of harrow widths can be plowed across an orchard of, say, 40 rods, until toward evening when I defer harrowing, but keep on plowing until dark, and even until moonshine, and by the dawn's early light I am at work again with the harrow, to the end that the clods pulverize, astonishing those of "experience" hereabouts.

I have often called orchardists' attention to their leaving freshly stirred ground lie too long, when they excused so doing upon the basis of loss of time in changing from one implement to another and back again. However, time we have and to spare, but when moisture is so scarce, bear in mind that it is most advantageous to rest yourself and team during midday and getting in as many hours at plowing by night and at harrowing in early morning as possible. If space permitted, I could tell your readers something of corn culture in a dry season which would certainly apply to California as well as to the States.—P. S. COXWINE WILLS, Campbell, Cal.

This is a very important matter. It would seem that most any one would take the hint as he sees his furrows dry almost as fast as he turns them under a hot sun and in a dry wind. We would like to hear much more of our correspondent's dry-year thinking. It will be a fine year for roller and clod-crusher and all other devices to reduce a bad surface to tilth and to get all the benefit of fog and dew.

The Canning Situation and Outlook.

Unmistakable indications that the East will need all forms of fruit this year are already discernible. Sales of dried fruits at prices only recently available are significant. The movement of supplies of canned goods which have been held here so long without purchasers, though the season's pack was small, is a very encouraging sign. Not a little weight was added to last fall's depression by the stoppage of the demand for canned and dried fruits; now that trouble is melting rapidly away. It is reported also, as another indication of the expected activity in canned goods, that the can-makers will not yet quote prices, though they usually do so earlier than this. It is thought that some sort of a can-makers' combine is contemplated, to cinch the canners now that they are to have an active year. We do not vouch for the accuracy of such a rumor, but it merely goes with other things to show that it is expected that there will be a year of unusual accomplishment in canning fruit. If this be realized the grower will be sure to get his share of it.

It has been stated that the supply of canned goods in store in California in January last was about 800,000 cases, of which one-quarter was fine table fruit. Buying for New York began in a speculative way about the middle of March, before the Eastern freeze, because the goods could be had low, and something like an eighth of the accumulation was covered. After the Eastern need became apparent buying and shipping took another turn, and last week daily shipments went as high as 5000 cases. Prices have been low, but still considerably advanced over those of a month ago. It is held at present that the State will be bare of canned fruit before another pack can come in, and this is the condition which leads canners to expect good orders for the coming pack and to prepare to set out the goods.

From an Independent Standpoint.

A caucus of Democratic members of Congress held on Friday of last week, determined by a two-thirds vote to make a rule by which each member present in the hall of the House shall be counted and reckoned as present and participating in the proceedings. The rule is a simple expedient to stop filibustering and promote business; but its adoption is a distinct event in the history of American legislation, and will be the theme of much heated talk during the next few years. It is, indeed, a matter of high political as well as of legislative significance, having made a considerable figure in the last Congressional campaign and being destined to appear quite as prominently in the campaign next to come.

When the country was newer and smaller, when politics meant public affairs, when dignity and character were essential to political success, before the days of jobbery in Congress and while still the people and not the railroad companies and the party bosses named the candidates—in those innocent times, long past—members of Congress were gentlemen who respected each himself and his colleagues. When a question came before Congress there was no limit upon debate, because it was assumed that no member would be so uncivil as to talk for the sake of taking up time or that he would be so wanting in decency as to delay the work of Congress by merely obstructive proceedings.

This sort of thing did very well in primitive times; but when Congress got bigger, cheaper in its membership and nastier in its manners it wouldn't work. There came a time when respect for mere civility, for the proprieties, for tradition, for the rights of others and for the business of legislation was a thing out of fashion and unknown. Obstruction upon systematic lines became the policy of each party in turn as it chanced to be in the minority, until it became well nigh impossible to perform the work of legislation, and absolutely so in matters not pleasing to the minority.

Under this absurd disability Congress stumbled along until four years ago, when obstruction reached its climax by blocking and utterly stopping the proceedings. The method was to "break the quorum," and it was very easily worked by minority members refusing to answer when their names were called for the purpose of reckoning a quorum. There are 356 members of the House, and under the rules it takes 179 to make a quorum. If there appeared to be less than this number on the majority side, the leader of the minority would make the point of "no quorum," and upon the roll being called the minority members would sit silent in their seats. Thus, though there might actually be present in the hall a hundred members more than enough to make a quorum, a quorum could not be counted unless there happened to be 179 majority members present to respond to their names. In this situation a rule was adopted authorizing the Speaker to record as "present and participating in the proceedings," not only those members who chose to answer to their names, but, as well, all actually present in the hall. Great was the rage at this rule and the minority fairly foamed at the mouth in its denunciations of "Czar" Reed and his associates. The new rule was alleged to be in violation of every principle of free government and as a thing destined to be fatal to American liberty. In and out of Congress, in the partisan newspapers and from the political stump the changes have been rung on this cry for the past four years.

When the wheel turned round again, and the Democrats came into power in Congress, the Republicans who had so bitterly denounced obstruction on the part of the Democrats in turn made it their own policy. Mr. Reed as the leader of the minority has vastly enjoyed "devil-ing" the majority for the sole purpose of making them adopt the principle for which he was formerly so bitterly condemned. All through the present session, he has been most offensively exasperating, breaking the quorum in the most irritating ways and at the most inopportune times. Every other possible means of forcing proceedings having been tried in vain, at last the hated rule has been accepted. The Democratic caucus voted to adopt it last Friday, and on Tuesday of this week it was formally adopted by the House. Hereafter, Speaker Crisp will find it easier to count a quorum and to promote business; but it will be through the use of a means once bitterly denounced as outrageous and undemocratic by himself, by his colleagues and by his party in national convention.

As matters now stand in Congress, the rule is an absolute necessity, for it is impossible to expedite business without it. It is, however, a public misfortune that it is so, for its practical effect will be to eliminate the minority from any real share in the work of Congress in open session. Hereafter legislation will be in the hands of the majority, with power to disregard the minority at will. This is not the theory

of the American system; it is not a sound method in government by the people. Under it the House of Representatives must cease to be—if, indeed, it has not already ceased to be—a deliberative body, and become an assemblage whose function it is to record and formally ratify the determinations of the majority party caucus. And the logic of caucus domination is minority rule. Let us suppose Congress to be composed of 190 Democrats and 166 Republicans. In majority caucus, less than one hundred will control the party. In the House the party vote is decisive; here, it will be seen, a caucus vote of one hundred, only a little above one-fourth of the whole membership, rules. And still we talk about government by majorities! The final adoption of the new House rule—necessity though it be—marks a decline in the dignity, in the respect and in the real authority of our House of Representatives; and to it we have been brought by the degeneracy of our political life. It is idle for one party to seek to discredit the other by specious charges of blame. Both have been party to it and one is as much at fault as the other. Both need a revival of political manliness and decency.

As we write, on Wednesday, Coxey's army is floating down the Potomac river toward Washington City on barges; the southern California army is somewhere in Indiana on a freight train; the San Francisco contingent is encamped near Omaha waiting a chance to capture a freight train, and numerous other "contingents" are in various stages of progress toward the national capital. A new crew of five hundred left San Francisco to-day over the southern route, the city having paid \$2000 for their transportation to get rid of them. Coxey's plan is to go into camp just outside the District of Columbia, wait for the other divisions to come up, then to march to the steps of the Capitol flying the American flag and a monster "peace banner" and present his appeal. He assumes that there will be no delay in granting his requests, and so has no plans for the future. In the meantime, Washington authorities are puzzled to know what to do with the host of ragged and hungry invaders. There are no end of laws against vagrancy, against mob assemblages, against bringing organized bodies of men into the District, etc., etc.; but this is an event which illustrates the impotency of police laws when thousands of persons are to be dealt with. It is manifestly impossible to arrest and imprison a multitude. Indeed, there is not jail room enough for them, and if there were, there is no way to feed them; and furthermore they have committed no crime. In any event, the multitude will arrive penniless and hungry, and in common humanity some provision will have to be made for them. It is suggested that Congress be asked to make a small appropriation for that purpose; and it will no doubt do so either directly or otherwise. Nobody pretends to guess what the final outcome will be; but we do not see how Congress can help providing work of some kind. It would, indeed, be a happy outcome if they should be set to work digging the Nicaragua Canal.

There are many signs that the Nicaraguan canal project is growing in public favor. The popular feeling is manifest in the fact that scarcely any sort of public convention—political, social or other—is held nowadays without adopting resolutions calling upon the Government to take up the work and carry it out. All the political conventions of the year have so resolved; all the representative bodies of this coast have so resolved, and now social organizations like the Grange are joining in the movement. Senator Morgan of Alabama, the chief promoter of the project in the political world, has just made a report on the bill now before Congress, which puts the matter in the light of a simple business proposition. The present company, Mr. Morgan explains, has a valuable franchise and has expended several millions of dollars in preliminary work. If abandoned, this will be wasted or pass into foreign hands. The pending measure gives the Government absolute control of the canal, through ownership of seven-tenths of the stock. The work can be completed for less than \$90,000,000. Finished, it will earn enough at \$1 per ton charge on shipping (half the tolls on the Suez canal) \$4,000,000 per year, after paying operating expenses and interest on bonds. This is four per cent on the entire issue of stock, of which the United States will hold \$70,000,000. There is only one objection to this bill, namely: that it does not make the Government sole owner of the canal. There is no reason and there can be no possible advantage in a partnership arrangement with a private company even though the Government have a majority of the stock. It will only make a lot of "insiders" who will contrive ways to get contracts, etc., for their own advantage. The thing ought to be gotten wholly into the hands of the Government by fair and legitimate purchase of all interest or title, and then it should be promoted wholly as a national enterprise. There is, we are aware, some technical objection to *nom-*

inal governmental ownership of the canal, but it is a mere lawyer's objection, without force in morals or in the spirit of things. In common sense there can be no objection to sole ownership that will not equally apply to seven-eighths ownership; and it is silly to quibble about it. The necessity for Government ownership is of a sort which must override outworn and obsolete laws and create new laws to fit the case.

The Government ought and must build the canal, and the conditions can never be more favorable than now. Money can be gotten at cheap rates; there are multitudes of men who need employment. As Senator Morgan puts it, "inauguration of this work would be the greatest possible relief to the depressed and desperate laboring classes. It would benefit those who stay at home as well as those who go to Central America. It would relieve communities of the burden of care for thousands of unemployed, and put an end to the destructive competition for work which depresses wages and handicaps labor of every kind. No wiser measure in interest of the working classes could be conceived. If these understood their interest, mass meetings would agitate for the canal bill, and petitions would pour into Congress in its favor. It is a means of public relief as well as of national progress and commercial extension."

A week ago the editor of the *RURAL* was driving with the foreman of one of our famous big ranches in the central part of the State down a fragrant lane bordered by orchards—through a region fertile and highly tilled and just the place of all places in the world for a happy country home life—when some distance ahead we saw a woman with two little children walking slowly toward us. To the editor this seemed natural enough, but the foreman stopped his team in blank astonishment—"Whoa! well, I swear, if there ain't a woman!" An explanation followed. In a distance along this road of upwards of ten miles, with orchards aggregating five thousands of acres, there was, so the foreman said, but one woman—the wife of one of the large orchardists. "Do you mean to say," the editor asked, "that there are no women, no families, in these houses we are passing?" "Not one," was the answer. "Is there no social, no family life in all this region?" "None, sir." "Have you boys no associations, no merrymakings, no sweethearts?" There was something of sadness in the reply, for the young man was a fresh, clear-eyed, companionable fellow who ought to have had a wife, or at least a sweetheart: "No sir, we have no society excepting such as the ranch boys afford. I have lived here three years and I know but one woman—the good wife of my employer."

This incident was in the editor's mind last week while he listened to Gen. Chipman's address before the Grange Congress in this city. The *RURAL* has long held the big-ranch system to be a blight upon our rural industry and life. It banishes homes from large areas, it tears down the schoolhouse and the church, it makes an itinerant, irresponsible and half-vagrant class of rural laborers, it degrades the better sort of farm labor by classifying it with the sort just described, it destroys that manly equality which is the prime merit of country social life, it makes country life barren and individual prosperity hopeless. It is most satisfactory to find a man so wise and effective as Gen. Chipman in the lists against this system and what it stands for and produces. And it is gratifying that so observant a man sees an end to it. The picture which Gen. Chipman draws of rural California when the big-ranch system shall have given place to a multitude of small and happy homes is one to touch the imagination and warm the heart of all who love our noble land of California.

Lemon Awards at the Midwinter Fair.

The committee, consisting of John Isaacs, I. C. Wood and C. L. Lloyd, who examined into the merits of lemons which were competitively displayed at the Midwinter Fair, have filed a report. They find that all the specimens were deserving of special mention. The highest and second awards were as follows:

Eureka lemons—N. W. Blanchard, Ventura county; John Scott, Los Angeles. Lisbon lemons—C. E. Harwood, San Bernardino county; N. W. Blanchard, Ventura county. Genoa lemons—C. E. Harwood, N. W. Blanchard. Sicily lemons—John Scott, A. C. Thompson, Los Angeles. Bonile Brac lemons—H. M. Higgins, I. S. Harvey, both of San Diego county. Villa Franca lemons—J. W. Freeman, San Bernardino county; C. E. Harwood. Seedling lemons—E. Grier, Sacramento; Mrs. W. S. Langlors, San Luis Obispo. Limes—E. S. Thatcher, Ventura county; W. H. Backus, Riverside. Mexican limes—John Scott, A. C. Thompson.

In grape fruit the first award went to D. H. Arnold of Colusa; the second to S. M. Marshall of San Diego; and the third to L. Hoovey of Los Angeles.

The first award in pomelos went to C. H. McKevelt of Ventura, and the first award in citron of commerce was secured by C. T. Wason of Ventura.

The best commercial package was sent by W. Stevenson, Jr., of Lamanda and next by Mrs. P. A. Hearst of Palermo.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, April 18, 1894, are from official sources, and are furnished by the U. S. Weather Bureau expressly for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total rainfall for the week.	Total seasonal rainfall to date.	Total seasonal rainfall last year to same date.	Average seasonal rainfall to date.	Maximum temperature for the week.	Minimum temperature for the week.
Yuma.....	2.16	1.36	8.14	94	42	
San Diego.....	4.76	9.07	9.28	66	46	
Los Angeles.....	T	6.40	26.19	17.59	76	44
Fresno.....	6.17	11.10	8.23	82	40	
Sacramento.....	13.85	22.62	18.43	82	46	
San Francisco.....	16.10	21.44	23.13	76	46	
Red Bluff.....	19.15	31.28	21.89	80	40	
Eureka.....	.08	50.99	44.55	41.25	62	38

Crop Condition and Outlook.

Reports from Nearly All Counties.

Following is a synopsis of the crop bulletin for the past week received by Director Barwick, of the State Weather Service, from voluntary observers:

The average temperature during the week ending April 16th, was: For San Francisco, 54°; Eureka, 48°; Red Bluff, 62°; Sacramento, 62°; Fresno, 62°; Los Angeles, 58°, and San Diego, 56°. As compared with the normal temperatures there was a deficiency of heat at San Francisco of 2°, Eureka 2°, Los Angeles 2°, and San Diego, 3°; while an excess of heat above normal was reported at Red Bluff of 2°, Sacramento 3°, while Fresno was normal.

The deficiency of heat along the coast has had a tendency to produce fog, which, flowing inland, caused a few clouds to float over the sky, thereby giving vain hopes of rain.

With an excess of heat over the Sacramento valley, and normal temperature conditions in the valley of the San Joaquin, accompanied by high and drying northerly winds, have made the want of rain reported in the previous weekly bulletin more intense and damaging to grain, hay and pasture; the latter is, indeed, getting very scarce and very short, and is dying rapidly in the foothills as well as in the valleys. The Sacramento valley is not suffering so intensely for want of rain as in the central and southern portions of the State. If an inch or more falls within the next ten days it would be very beneficial to any portion of the State over which it might chance to fall.

The fruit prospects are reported good everywhere, and a large yield of apricots is anticipated, while short crops of grain and hay are almost everywhere reported.

The highest and lowest temperatures were 108° at Huron, Fresno county, and 30° at Yreka and Ager, in Siskiyou county.

LASSEN (Susanville)—Weather for three weeks past been all that could be desired. Fruit outlook is fine for a good crop unless injured by frosts in May. In the valley some complaint is heard on account of dryness. Highest and lowest temperatures, 71 and 33 deg.

SISKIYOU (Ager)—Fall-sown grain doing well. Spring-sown wanting rain badly. Highest and lowest temperatures, 80 and 30 deg. (Yreka)—Rain on the highlands would be beneficial, but nothing is suffering.

SHASTA (Redding)—The fruit crop never looked more promising. (Anderson)—Too much north wind; rain wanted very much to help out the grain crop, but still the drought can be borne some time longer without much detriment. Fruit has set well and has no appearance of dropping. Highest and lowest temperatures, 78 and 40 deg.

LAKE—The abnormally warm weather has not helped crops of any kind, and the need of rain is daily becoming more pronounced, and the north winds are drying out the ground. Grain and hay look well, but will soon begin to head. Some of the late-sown grain will never come up. Trees of all kind are doing well, as the fruit has set, except pears and apples. The vines are starting out nicely. It is too dry for ploughing. Highest and lowest temperatures, 86 and 41 deg.

TEHAMA (Red Bluff)—Rain needed for hay and grain. Fruit still in fine condition. Highest and lowest temperatures, 83 and 51 deg.

BUTTE (Chico)—Notwithstanding the continuous northerly winds, the fruit and grain crops look well. (Gridley)—Everything looks prosperous, but rain must come shortly to continue the prosperous outlook. Highest and lowest temperatures, 86 and 48 deg. (Biggs)—North wind rapidly drying up the ground. Red land too dry to plough and grain is suffering for want of rain. Grain is good on the adobe lands, but the ground is almost too dry for ploughing.

SUTTER (Yuba City)—Grain still looks well; barley is beginning to head. Summer-fallow will make a crop without more rain. If the north wind continues, the crop will be light. Feed on hillside nearly dried up. Fruit prospects good if the soil carry moisture enough to mature the crop, which is doubtful for late varieties on account of impossibility of giving good cultivation. Drought will cause crops to ripen earlier than indications were a month ago. (West Butte)—All cereal crops need rain. Wheat and barley on summer-fallowed lands look well, considering the amount of north winds it has withstood. Late-sown grain cannot make but a short crop even with rain now. Feed drying up badly. Alfalfa hay crop light.

YUBA (Wheatland)—North winds still baking surface of the ground; summer-fallowed grain apparently uninjured, but late-sown on upland is really suffering and looks yellow in many places. Unless rain comes soon hay will be a light crop; hops and all kinds of fruit doing well. Highest and lowest temperatures, 82 and 45 deg.

PLACER (Newcastle)—Dry weather and north winds have damaged the hay crop. A great percentage of the orchards are but partially plowed; all are waiting for rain to soften the ground. All indications point to a heavy fruit crop. Highest and lowest temperatures, 82 and 47 deg. (Roseville)—Summer-fallowed grain looks well and will make a pretty fair crop if there is no more rain. The winter-sown grain, however, will make nothing without rain.

SACRAMENTO (Orangevale)—Fruit prospects good for a full crop, although rain will be necessary to mature some of it. The continuous north winds have done great damage to all grain crops. If

rain does not come soon the grain crop will be almost nothing. Highest and lowest temperatures, 84 and 42 deg. (Walnut Grove)—Fruit crop prospects good. Apricots half-grown; peaches, pears and plums well set. There is too much drying northerly winds.

SOLANO (Denverton)—Grain crops are short and growth retarded by the drought; rain is needed badly; rainfall to date, 14.31 inches. (Vacaville)—Fruit prospects improving daily. Trees are well filled with young fruit; apricots promise a heavy yield, but grain farmers are in great danger of having their crops damaged for want of rain. In some instances grain but 8 or 10 inches high is heading out. Some fields are almost ruined, and unless rain comes very soon the crop in many cases will be fit for nothing but pasture.

YOLO (Winters)—Summer-fallowed grain looking well; winter-sown, badly. All vegetation is suffering for want of rain. Orchard plowing about finished. Orchards promise a large yield of all kinds of fruit. Highest and lowest temperatures, 85 and 57 deg. (Dunnigan)—Grain in the foothills looks very well, but cannot hold out much longer without the usual spring showers.

MENDOCINO (Ukiah)—Light frost on the 12th in the low lands, but no damage done. High north winds are drawing the moisture out of the ground very rapidly. Crops need rain, and upland pasture beginning to suffer for want of it. Highest and lowest temperatures 83 and 35. (Covelo)—Grain sowing just finished. Early-sown grain looks well. Fruit prospects good.

SONOMA (Forestville)—Vegetation making rapid growth. First crop alfalfa cut, and was a heavy one. Feed on the uplands suffering for the want of rain. Orchards and vineyards will not receive their first plowing unless rain comes soon. Preparation for corn planting under way. Highest and lowest temperatures 84 and 48. (Healdsburg)—The outlook for a bountiful fruit crop has never been better in this county than at the present time. Trees are simply loaded with buds and blossoms, and the way the fruit is setting is indicative of a heavy yield. (Windsor)—Season somewhat dry and rain needed, but the crop prospect, especially for fruit, is as good as could be asked. (Bennett Valley)—It is awfully dry and the outlook for the farmer is cheerless.

ALAMEDA (Pleasanton)—Rain is badly needed in most sections of the Livermore valley. The hay crop will be short, but fruit plentiful. Highest and lowest temperatures 83 and 36.

SANTA CLARA (San Jose)—Crop conditions good, although rain would be beneficial. Highest and lowest temperatures 81 and 37. (Santa Clara)—indications are good for an immense prune and cherry crop. Apricots are as large as almonds and in greater quantities than has been known for years. The dry season is not sufficiently serious to injure the yield of fruit, but it may prove disastrous to hay and grain, although they are now beginning to look a little yellow in spots, but a refreshing shower will remedy this and bring the average yield. (Saratoga)—Fruit trees have blossomed out full, but rain would do much to help everything along.

CONTRA COSTA (Martinez)—There is an abundance of water in the ground, and a few good showers would soon place the crops beyond all danger. Summer-fallowed grain looks splendid, but winter-sown will suffer if rain does not come soon. The fruit outlook was never more promising, and if nothing adverse occurs the yield will be enormous.

SAN JOAQUIN (Acampo)—Dry north winds are crusting the ground, making it difficult to cultivate the orchards; grain not very badly injured yet for want of rain. Some farmers think the grain will stand it for a week or two yet. (Lodi)—Grain conditions not improved; lack of rain and north winds are having a bad effect. Almonds and apricots to some extent are dropping. Hay crop will be short. A few melons have been planted, but unless rain comes soon, the acreage will be much less than usual. Highest and lowest temperatures, 85 and 43 deg. (Bethany)—The grain fields are now turning yellow. Many farmers have commenced cutting hay, which is very short, and only about one-fifth of the grain land will be fit to cut even for hay.

AMADOR (Oleta)—Dry winds very bad on growing crops, which are suffering for rain; late-sown grain will be a failure unless rain comes very soon. Highest and lowest temperatures, 79 and 42 deg.

STANISLAUS (Turlock)—Heavy drying northerly winds damaged grain very much by blowing it out in the sandy soils and drying the ground in the heavy soils. The prospects are for a very light crop in this section of the valley, and then only in a few fields. Rye is heading out and is a light crop. Highest and lowest temperatures, 88 and 42 deg.

CALAVERAS (Milton)—Dry north winds and absence of rain are drying up the grass, and grain on light, shallow soils is very short. On heavier soils, though not suffering, the grain needs water to make good crops. Fruit prospects generally are good. Highest and lowest temperatures, 87 and 50 deg.

MARIPOSA (Mariposa)—Rain needed. In lower part of county grass is getting dry. Highest and lowest temperatures, 89 and 46 deg.

SAN BENITO (Hollister)—Crops are not suffering to any great extent as yet, but a few showers would help them wonderfully. The grass is beginning to dry out throughout the county. Fruit of all kind is doing well.

MONTEREY (Gonzales)—Half a crop will probably be raised on the upland in this vicinity, but nothing on the adobe unless rain comes soon.

FRESNO (Fresno)—Growing grain very much in need of rain. Highest and lowest temperatures, 90 and 44 deg. (Sanger)—Drying winds damaging to crops. Grain beginning to die. (Huron)—Highest and lowest temperatures, 108 and 65 deg., with dry winds.

MADERA (Madera)—Wind storms injured early grain, so that rain would not make half a crop. A good rain soon would save late grain. Fruit prospects good so far.

KINGS (Hanford)—Drying winds make poor prospects. Highest and lowest temperatures 91 and 48.

TULARE (Tulare)—Wheat and barley a complete failure. Grasses and all feed scarce. Stock suffering for want of pasture. Apricots short. Peaches and other fruits have good prospects. Highest and lowest temperatures 100 and 38. The cutworm and bugworm are doing some damage. (Visalia)—Fruit crop looking fine, but everything else suffering badly. North winds and no rain are very injurious for present outlook. Highest and lowest temperatures 82 and 46. (Porterville)—Unirrigated grain about dead, and the north wind still blows with such a drying effect that it is difficult to saturate the ground enough to keep vegetation in good shape.

SAN LUIS OBISPO (Arroyo Grande)—Feed getting dry in places and growing slowly. Weather a little foggy in early part of week, but in latter part dry northerly. Highest and lowest temperatures 84 and 60. (San Luis Obispo)—Cool weather with southerly fogs has helped crop very little, being no more than will make hay unless an inch of rain comes within a week. Bottom land in good condition for green crops. There will be no beans on the upland. Fruits of all kinds doing well. Pastures very poor. In the driest belts the dairymen must stop milking at once.

SANTA BARBARA—Grain is growing, but much depends on the future whether it will mature or not. Feed will be very short. Fruit prospects alone good. Highest and lowest temperatures 80 and 42.

VENTURA (Hueneme)—There is no improvement in grain prospects. Weather still dry, but should showers fall there will be a good chance for the corn and bean crop.

LOS ANGELES (Cologrove)—Foggy nights and mornings are beneficial to crops. Everything is growing vigorously. The hay crop promises to be larger than at first anticipated. Cultivated soil is quite moist, and corn, pumpkins, melons, beets, etc., will make good crops without more rain. (Los Angeles)—Grain is heading in many places and is very short. Some is injured beyond recovery. Beans and corn will be good should a shower of rain come. (Pomona)—Weather still dry and very little hay will be cut. There are good prospects for a big fruit crop, provided the artificial water supply holds out. Highest and lowest temperatures, 88 and 45 deg.

SAN BERNARDINO (Redlands)—Irrigation begun by many growers. Peach crop will be a large one. The prospects are good for a large honey crop. (Ontario)—Hay generally is looking fairly well, and all that was sown early will turn out a fair crop. (Chino)—The week

has been generally clear, with several foggy mornings. Highest and lowest temperatures, 85 and 45 deg.

SAN DIEGO (Valley Center)—This region not suffering from the dry spell as are some other localities. Grain is looking better than on same dates last year, and whether any more rain falls or not this season there is a pretty good assurance of a fair crop of grain. (Dehesa)—Crops are looking well, notwithstanding the ground is very dry. Rain would be a great benefit to all crops at the present time. The peach, apricot, prune and apple trees are in full bloom. Vines have commenced budding. (San Diego)—Slightly warmer and very dry weather has prevailed during the week. Rain is needed very much, and unless it comes in a short time will do but little good. Some farmers in the mountain valleys claim to have fair crops, but most of the grain will be very poor. It is already heading and not more than ten inches above the ground. Fruit is setting finely and orange trees are in bloom. Highest and lowest temperatures, 65 and 46 deg.

State Fair of 1894.

The State Board of Agriculture held its usual April meeting on the 10th inst., to revise the premium list and arrange other preliminaries for the State Fair of 1894. Messrs. Boggs, Gird, Cox, Green, Chase, Wilson and Hancock were present.

Several important changes were made in the premium list for this season. The following resolution was received from the State Board of Horticulture in reference to the horticultural display at the State Fair this fall:

Resolved, That the secretary be instructed to take such action as will bring the two boards—Horticultural and Agricultural—together, to take into consideration the propriety and advisability of the State Board of Horticulture taking charge of the horticultural exhibits of the State Board of Agriculture at the State Fair.

(Signed) B. M. LE LONG, Secretary.

The State Board of Agriculture most cheerfully acquiesced to the proposal and appointed Secretary Smith a committee of one to meet with Mr. Le Long and arrange the premium list to suit the horticultural interest.

The proposition of the American Aberdeen-Angus Association to give a special award of \$100 to the "grand sweepstakes," if said premium be won by an Aberdeen-Angus herd, was accepted and ordered printed in the premium list. Also the proposal of the American Berkshire Association, offering special premiums to registered swine winning awards at the California State Fair.

The speed programme committee recommended the giving of a grand \$5000 guaranteed stake for trotting-bred foals of this year to trot in 1896-97 in their two and three-year-old form, and it was adopted. The nomination fee will be \$10, entries to close June 1, 1894. The colts here entered can start in either or both events. This will be one of the richest stakes for youngsters that will be offered in this State in 1894.

The speed committee will soon submit the full programme for this year.

Another important question was considered, and that was admission tickets. Ever since the abolishment of season tickets the board has been urged to present a practical substitute therefor, and for this year it decided to adopt a 15-admission commutation ticket, to be sold for \$5. This ticket will contain 15 coupons, each of which will be good for one adult or two children. The holder of the ticket can then bring as many with him as he desires, to the extent of the number of coupons on the ticket. Another ticket for use of merchants, in book of 100, will be issued at the same rate, which may be sent out to their interior customers with the compliments of the sender. Single admissions will remain as heretofore.

Other important measures are under consideration, tending to make the State Fair especially attractive this year.

It is the intention of the State Board to encourage many attractive pavilion exhibits for this year. Especial attention will be given to the dairy prizes this year, and a practical creamery man will be in charge of the tests; as this business is fast assuming extensive proportions in California, the board desire accurate tests made of the quality of milk-producing animals.

The Campbell Growers' Union.

CAMPBELL, April 5.—The annual meeting of the stockholders of Campbell Fruit-Growers' Union was held yesterday in the Young Men's Christian Association Hall. It was a very important one for the association. The report of the directors was approved, with thanks for their gratuitous labors of the past year. Their report showed an aggregate of 3600 tons of fruit handled, and all sold except about fourteen carloads of dried prunes, four carloads having been sold this week at an advance of the ruling price for the four sizes.

It was decided to appoint an advisory committee of five to assist the board of directors, when the board so desires, in matters involving special responsibility. No one seemed to doubt the success of the enterprise, and it was developed that a number of parties desired to take stock in the concern simply as a matter of investment, having no fruit to be handled, but this was not deemed advisable.

It was voted as the sense of the stockholders that the directors should receive \$2 for each regular monthly meeting, and for each called meeting not to exceed ten; also that the manager should receive \$125 per month instead of \$80 as heretofore.

The election of directors proved a difficult task, as the most of those desired by the association were unwilling to serve. Notwithstanding their protests the old board was re-elected, except Mr. Haberdier, who refused to serve, and Mr. Gates was chosen in his stead.

Much discussion was had as to the kind of warehouse to be built; a large majority, however, inclined to a fireproof building, which will cost in the neighborhood of \$3000.

The directors met after dinner and organized by electing the same officers as last year—F. M. Righter, president, and S. G. Rodeck, secretary. Several prune-buyers were on the grounds to-day and the balance of the prunes were sold for 4½ cents. Quite a force of hands was at once set to work sacking, and in a few days the drier will once more be empty.

HORTICULTURE.

Horticulture in Its Relation to Agriculture in California.

An Address by General N. P. Chipman of Red Bluff before the Grange Congress at the Midwinter Fair.

I have been asked to discourse before you upon the relation of horticulture to agriculture in California.

The word "horticulture" in its etymology means the care of a garden—the cultivation of a smaller area of land than a farm or field. It includes floriculture and market gardening, but does not include fruit culture, except in the case of small fruits and dwarfed trees, nor does it, strictly speaking, include truck farming or market gardening on a large scale, which is a department of agriculture.

I do not understand that I am to deal with the subject in this restricted sense. The dictionaries and cyclopedias may tell us that *hortus* means a garden, and *cultura* means care, and that the two subduced to our uses in the word "horticulture" mean a garden; but usage has greatly enlarged this definition. The Legislature of California has created a Board of Horticulture. The board would feel its dignity seriously affected if the suggestion were made that its functions relate to gardening alone. Indeed, its duties—at least in practice—have to do only with the pursuit of fruit growing. We have stolen the humbler gardener's true designation, and the world over horticulture is understood by the masses to mean fruit culture.

As I speak not as a scientist, but in an untechnical way, I shall treat the subject in its accepted meaning, and shall include in it market gardening.

Further to clear the way for the discussion, it becomes necessary to define the term "agriculture." The dictionaries come as near doing this as they do in defining "horticulture" as we understand it. According to the books, agriculture means the art or science of cultivating the soil. But surely to plant and grow a tree is to cultivate the soil, and so we must resort to usage again. Agriculture in the common acceptation means the growing of the cereals mainly. It would, of course, include cotton, hemp, hay, tobacco, etc. But I suppose it will suffice if I show the relation of horticulture as already defined to our leading agricultural products—that is to say, to our cereals.

The relation that fruit growing in California has established to our general agriculture forms one of the most fascinating and delightful, as well as instructive, chapters in the history of our industrial development. If we were to eliminate the orchards and vineyards and gardens of California from its agriculture, we would destroy all that distinguishes the State from most other States of the Union; and yet this industry has been compelled to fight inch by inch to attain its ascendancy, and strangely this ascendancy has been against the protests of the agriculturists themselves.

Every step in the evolution of the State until we began to grow fruit in commercial quantities, was a step out into some field of large enterprise and into great undertakings. The California mind could not lay hold of small things as by any possibility ever coming to the day of great things. The idea that a State could be better built with fifty families on a thousand acres than with one family did not take root quickly here. We had a rich and fecund soil for growing cereals, but a sterile soil for evolving ideas as to its possibilities. So long as we could dig gold as we would mine for coals we were miners, and we spread our fame far and wide. If we turned to pastoral occupations, the flocks and herds of a single owner could only be known by brands and ear marks and must roam over a thousand hills and limitless areas in the valleys, incapable by their numbers of identification except by conventional designation. We didn't own cattle; we owned a branding iron and everything that bore its imprint. If we grew wheat, the farmer must have his army of men and equipment like unto a general on the field of battle. If we were to subdue the forests, it must be with large capital and in the spirit of monopoly. If farm life was to form a part of our civilization, the rich acres were to be worked for the revenue only, and not as the home of the owner. The farmer's money was to be made on the farm, but his pleasure was to be found elsewhere. There was no distinctive farm life such as has been in other lands the inspiration of poets, the chief stay and support of commonwealths. What was a dream of Arcadia elsewhere was a nightmare in California. Let me invite you to the great wheat ranch of the late Doctor Glenn—a typical California farm. See that monarch marshalling his hosts of migratory laborers long before the day's dawn. They come from fence corners, from hay mows, from soft spots by the roadside, from old stack bottoms, sleepy and begrimed from the previous day's toil and the short rest of a short night. Not one of them in fifty had a home beyond his blanket or a hope beyond his day's earnings. I will not desecrate the life of the farm by a picture of the daily life of that small army. They came in the fall to help put in the summer-fallow; some of them remained to winter-plow and sow. The first battalion had migrated—God knows where; soon to be followed by the second, and then came a calm over that desolate expanse of a hundred square miles. A few were allowed to return to herd geese later in the winter; others came still later to plow for the following year's crop, and then disappeared as before. Still later the migratory band in full force returned to help gather in the golden grain of this broad expanse to enrich one man, but not to add a single home to Colusa county. It was a life that brought neither peace to the owner, people to the country, nor prosperity to the State. It was a gross perversion of God's acres and a prostitution of intellectual faculties. In all the years of that man's ambitious struggle to be the greatest farmer in America he added not one family to the permanent population of this region—his own home was at the metropolis. And to-day, after years of administration, the

Probate Court under the laws of this State is farming that principality upon the vicious lines of fifteen years ago—and not a home has been planted on that great property. And yet Dr. Glenn became the people's candidate for Governor upon the launching of our new Constitution, and he was canonized by the christening of a new county.

Here was an instance of the agriculture of California—an exaggerated example, if you please—but one of a type, I am sorry to say, that dominated this noble calling and gave to it a distinctive character which has not even yet become extinct. It is an example of a lingering type that takes kindly to the combined harvester and other devices to dispense with human beings and substitutes mules for men—that makes of the sacred soil of the globe not the dwelling place of happy families, but the means only of added wealth.

Let me be impartial. The same spirit born of earlier California is being reflected in great orchards and vineyards. In Tehama county a non-resident owner erected to himself a monument: he planted the largest vineyard in the world. Four thousand acres of vines attest the ambition of this man. Lodging-houses are there, but no homes. Here, as wherever else the California idea of great things is dominant, is a small army of men condemned by the force of the policy itself to a life of celibacy. This great plant was founded ten years ago, and there is not a single additional home added to the neighborhood. The little village—the only one within a radius of a dozen miles—is a little village still. The founder had a great soul—broad as humanity itself—and he has left behind him imperishable memories of his benefactions. This mammoth vineyard is but part of a munificent endowment composed of other mammoth properties as well—vast areas of wheat lands occupied by tenants—limitless sheep walks occupied by roving herders to whom the word "home" conveys no meaning and awakens hardly a memory. By the laws of this State all these vast properties are forever entailed for revenue only, and to remain for all time a vast uninhabited toiling ground for migratory labor. Here was an example of the broadest philanthropy, a consecration of great wealth to a noble work, the founding of an institution that shall grow in usefulness as time goes on, and shall indelibly engrave the name of the founder in the imperishable annals of history. But with singular obliquity of vision its endowment has withdrawn great areas of the richest soils of our State and condemned them to perpetual uninhabitableness.

Let me further impress my meaning by another example of the all-pervading California idea which I affirm must be extirpated sooner or later or we can have no sure or rapid growth. I believe if I were to ask you here to-day to name the one man who above all others has contributed most to exalt fruit-growing, and who has placed it among the chief industries of the State, you would at once name the man of whom I am about to speak. No man among you has greater love for his State or more sincerely wishes prosperity to all her people—no man more liberal, broad-minded, patriotic. He is a typical Californian. Let me conduct you to his office in this city—a more genial, whole-souled man does not exist. He will give you an hour or a day of his busy life any time to cheer you on your way or to impart knowledge of his business and fit you to pursue it. In a small, modest room with an accomplished assistant he conducts the noble pursuit of fruit-growing. He looks around him and sees only the hard walls of great commercial emporiums; he hears the hurrying and scurrying of the greedy, needy, turbulent throng on the streets below; but in his mind's eye he looks beyond and conjures a vision that might be a reality to him, but is not—where trees are in bloom and birds sing and honest toil finds a restful pleasure in the compensations of nature at her fountain head. Wearily he dictates his instructions. At Suisun a thousand acres, at Biggs two thousand acres, at Cottonwood five hundred acres, and elsewhere numerous orchards of greater or less areas. Man never conceived anything more beautiful than one of these Edenic gardens in the full bloom of a promising harvest. But in all this scene of loveliness the one animated picture, of happy children filing off with satchel and dinner-pail on their way to school, is not seen. Busy housewives, children playing in the dooryards, country home life are not there. These are no necessary part of fruit growing pursued under the California idea—for revenue only.

Ladies and gentlemen, I do not believe in farming or growing fruit for revenue only. I am not a socialist, nor do I believe that there should be any limit put upon man's energies wisely directed, but I do not believe that one man has a moral right, and should not have a legal right, to withdraw from habitation any considerable portion of the earth and use it as he pleases. I do not believe that because one man has wealth enough to buy all the property in Santa Clara county, he has the right to do so and convert that paradise into a sheep pasture. There are some things more sacred than the right to acquire property.

All this I have said—perhaps not wisely—to convey my belief that we must reform our idea of farming and fruit growing in California. We must make our country life what it is in all highly civilized countries—the nursery of the State. We must have an agriculture sufficiently diversified to make it possible for a family to be well supported on a small area, and we must have laws, framed on just principles, that will make it unprofitable, if not impossible, for one man to depopulate a whole township. It is not so much the agriculture and horticulture as we have it but as it should be that I prefer to bring into relations.

The conditions in California favoring agriculture in all its noblest forms are both unique and phenomenal. We have been slow to learn the value of these conditions in the development of our agricultural possibilities and to discover what great wealth lies in the direction of diversified agriculture. Single successive croppings for long periods as a farm policy have conducted more countries to ruin and devastation than all the false and vicious fiscal policies that were ever formulated. If we had persisted to this day in devoting our land exclusively to wheat, as many farmers are still doing, the State would have been in a deplorable

condition financially and would have had a quarter of a million less population. Yield per acre has greatly diminished; average prices for wheat have gone down with diminished yield, while cost of transportation has been an uncertain and variable quantity and has not much decreased. Nothing but modern contrivances that have made it possible to grow wheat at less cost than formerly have saved the industry from collapse long ago.

CULTIVATION OF CEREALS.

A comparison with other States will show that the average acre product of the cereals, excepting Indian corn, of which we produce but little, sustains the claim made for California.

I have tabulated the results given in the census for 1890 in ten Western States whose wheat product is over ten million bushels.

AVERAGE YIELD OF CEREALS PER ACRE, IN BUSHELS.

STATE	Barley.	Buck-wheat.	Indian Corn.	Oats.	Rye.	Wheat.
California	21.51	15.64	33.87	25.41	8.90	14.39
Wisconsin	32.06	13.74	30.37	37.33	16.45	16.72
Minnesota	25.38	12.75	27.39	31.63	19.92	16.61
North Dakota	14.35	6.39	35.35	14.32	7.78	9.74
South Dakota	9.26	7.32	17.46	12.87	7.06	7.82
Illinois	28.93	10.97	36.84	35.75	15.87	16.68
Missouri	23.18	10.15	32.44	23.76	12.72	15.47
Iowa	25.84	11.86	41.28	39.09	15.42	14.09
Nebraska	22.06	7.81	39.40	29.16	13.33	13.23
Kansas	23.01	9.72	35.49	30.49	14.65	19.21
Michigan	25.40	11.59	28.94	34.04	14.93	16.60
11) 250 98					11) 157.86	
Average	22.8					14.35

The table shows the average yield of all the States compared of barley was 22.8 bushels, while the yield in California was 21.51 bushels. The average yield of wheat was 14.35 bushels, while the yield in California was 14.39 bushels.

The trouble with agriculture in California is, that on a small farm with single croppings there is not a living for a family as we farm the land. These fourteen bushels are worth at the farm not over seven dollars. To produce these fourteen bushels it costs certainly six dollars. Do I need to tell you that to support a family or rear it as an American family should be reared, cannot be done by growing wheat only on an ordinary-sized farm?

We have pursued wheat growing as the chief agricultural product long enough to enable us to judge of its effect upon the growth of the State.

We have also pursued fruit growing long enough to enable us to judge of its effects.

Speaking from the standpoint alone of income to the State, I showed in a report to the State Board of Trade for the year 1890 that our exports of fruit then exceeded in value our wheat exports by more than half a million dollars, the export value of each being then about twenty million dollars. The export value of wheat is less now than then, while that of fruit has greatly increased. In point of revenue to the State, horticulture is now conceded to be the leading industry relating to the soil.

Its growth and development have spread the fame of our State into the remotest countries of the globe, and our methods and success are being everywhere studied by intelligent agronomists. While our wheat is but an insignificant factor in affecting supply and demand, our fruits have already visibly affected the commerce of many countries. Let me remind you how this young giant has stridden into the arena of agriculture.

In 1880 we sent 546 carloads out of the State. In 1890 we shipped of carloads—

Citrus fruits	8,075
Fresh deciduous fruits	7,952
Dried " "	4,123
Nuts	179
Raisins	3,739
Canned fruits	2,784
All kinds by sea	437
Wine and brandy by rail and sea	6,620

A total of fruit and the products of fruit of 33,950 carloads.

Besides this we shipped 6,798 carloads of vegetables, making a grand total of 40,928 carloads as the result of this new industry for the year 1893.

In return there came back to us a stream of gold averaging not less than two millions of dollars a month throughout the year.

This is wonderful, but it is only the beginning of a permanent wealth to the State, the extent of which only those who have studied the conditions existing here and elsewhere can adequately estimate. Before the year 1900 dawns upon us the export value of our orchards and vineyards will exceed fifty million dollars.

Within that time also there will be an awakening among agriculturists that will revolutionize the farming industry. We will not be found sitting on our doorsteps looking out upon the parched fields of grain and wringing our hands and praying the prayer of the slothful for rain to keep us from ruin. The impoverished land baron, eaten up by his own greed, will have loosened his grip upon his many leagues; the mountain streams will have been conducted out of their natural into artificial channels covering the valleys with their fructifying waters and laughing to scorn the fickle skies and treacherous rainfall; a greater diversity of farm products will displace the monotonous and unprofitable wheat fields; instead of importing butter, eggs, bacon, ham, poultry, cheese, live stock and other products, for which we paid out in 1892 more than we got for all our wheat products, we will be self-supporting, and we will keep this money at home; instead of growing wheat to be shipped 15,000 miles to a fluctuating market in competition with the whole world, we will grow it only for a larger home market at prices profitable to the grower; instead of a system of single croppings by which the farmer grows wheat only and buys everything he eats, drinks and wears, we shall have a system by which he will be independent and self-sustaining, by which all the members of the family will contribute to the income, and small economies will

not be despised; when every trip to town will not be to buy some article that could be grown at home, but will be a trip with some article or product to be sold or exchanged.

I expect to see it because it logically belongs to our conditions. Rich soil, a climate that makes it possible to work outdoors profitably every day in the year—a climate adapted to the growth of almost every product of the earth, a climate where labor may find better returns than elsewhere on the globe; with water courses everywhere available to supply deficient rainfall upon all our arable land—with all these conditions I can point to no other place comparable with California and to no other result than I have predicted.

It will only be in that day that agriculture will stand side by side with horticulture as fully and honorably related and a worthy co-worker.

Let me submit a few figures drawn from a study of the census for 1890 to show you that I cannot be far wrong in exalting horticulture.

From 1880 to 1890 we added only 78,113 to our rural population out of a total gain of 343,436. Over 77 per cent went to the towns and cities in a State offering more attractions in country life than can anywhere else be found. This was bad enough for the State, but a deeper lesson is to be found in tracing the rural increase of population to their homes. Sixty-one per cent of this increase went into the seven counties of southern California, or nearly 48,000 found homes there in the country.

Now turn to the Sacramento valley, possessing all the advantages of the south, and we find only 2018 added in ten years.

Going into the San Joaquin valley, we find in the single county of Fresno a gain of rural population of 10,330, while San Joaquin county lost 1642. Colusa county is set down in a census bulletin as the largest wheat-growing county in the world. She added 349 people in ten years to her rural growth.

And so I might conduct you over the State to find only that immigration has shunned the exclusively wheat-growing counties, and that wherever a marked increase is found you will find fruit growing the leading attraction.

Need I refer further in proof of my contention that it was the orange groves of southern California, and not her cereals, that gave the phenomenal growth to that region?

In its relation to general agriculture fruit growing has not elbowed out or displaced a single unwilling farmer. He has been permitted to go on and pursue his own sweet will and grow wheat to his heart's content. In the aggregate the average output of wheat has been about the same as before we began to plant trees. The orchardist has not interfered with his land or his market, nor has he coveted his ox nor his ass nor anything that is his. The fruit-grower occupied spots here and there—many of them not suitable to grow cereals, and has practically created a new and important industry. While the wheat-grower all along has had a sort of contempt for the petty business of fruit growing, the fruit-grower has looked on serenely with only pity for the wheat-grower. The two are now much nearer together. When an intelligent diversified agriculture is inaugurated they will stand side by side, and then California will mount to a primacy which shall be the pride and glory of the Union. You will have to go beyond the confines of the United States to find a parallel to the surpassing enchantment and loveliness of the rural life soon to be along the coast for 600 miles. Here will be gathered all the products of all climes—the orchard and garden of America interspersed by highly cultivated farms of intelligently diversified products. The highways will be drive-ways of pleasure shaded by the magnolia, the olive and a hundred other ornamental trees. The dwellings will have architectural beauty and the grounds about them will illustrate the refinement and taste of the dwellers within. The home life of the people will be a life of contentment and serenity beautiful to behold, and our Mother Earth will not be lacerated and torn and robbed—for revenue only.

FLORIST AND GARDENER.

Violets.

An essay by Mrs. Helen A. Cross at the April meeting of the State Floral Society.

In attempting to write anything of interest or anything new on this subject one is met at the outset of his researches with the information that the topic is a very old one; that for hundreds of years the violet has been widely known and appreciated. A native of the temperate zone, it is distributed in America from the Arctic regions to the Gulf of Mexico, and from the Atlantic to the Pacific oceans. Across the great water its familiar little face greets the traveler throughout Europe. He also finds it growing wild in far off Tartary, China and Japan. Poets have often praised its modest shyness and sweet perfume, the floral artist has ever found it in springtime a favorite subject for the brush and canvas, and the musician joins in the chorus of its praises with his song of "Violets, Sweet Violets."

But it appeals not alone to the esthetic nature, for the physician has discovered in it healing virtues, and resorted to it to mitigate some of the ills that beset mankind. With one exception, which will be mentioned further on, it seems a universal favorite.

Authors differ as to the number of species scattered throughout the world, some placing it at 150 and others as high as 300 species. Most botanists confine themselves to a description of less than 25. The favorites for cultivation in gardens are confined to a few, and these, with the exception of *Viola tri-color*, are all varieties of *Viola odorata*, commonly called the sweet or English violet. These are distinguished from each other by the form and color of the flowers, viz., the purple, white and blue flowered and the double white, double purple and double blue flowered,

and the Neapolitan with pale blue flowers. Of the dark blue, the Marie Louise is the most common here. Our white variety is known as the Swanley white, though some others are cultivated. Mad. Millet, a double red or carmine colored variety, has been grown to some extent as a novelty. The single purple is called the Czar, and the double purple the Double Russian.

To secure the best results in growing violets, the gardener should keep the runners pinched off, as in the cultivation of the strawberry plant; also divide and transplant to new ground every two or three years. They thrive best in cool, shady places with rich loamy soil, though many wild varieties are found thriving in sandy places.

The numerous bedding violets that flower so profusely in Great Britain all summer originated in a cross between *Viola cornuta*, native of Switzerland, and the *Pyrenus* and *Viola Pyrola flora*, introduced from Patagonia in 1851. Americans have imported them by tens of thousands annually, but have always met with failure, for they will not stand our hot, dry atmosphere.

The best of our native species for cultivation in border is *Viola pedata*, or bird's-foot violet. Civilizing it improves it, and it can be removed from its native haunts without any danger of failure. In favorable situations its flowers grow an inch in diameter, and in such abundance as to completely cover the bed. They are mostly pale blue in color, but in some districts pure white varieties are common. There is a curious tendency in this same bird's-foot violet to take on the form of the *Viola tri-color*, or pansy, and in all the specimens of the freaks or sports noted, says botanist Meehan, the two upper petals were those that had changed to the beautiful crimson purple of the pansy; and the reason why, when it does change, that it should change in this uniform way is worthy of the attention of the ambitious student.

The *Viola cucullata*, or common blue violet, also has some very interesting peculiarities. Some of its varieties have the power of perfecting seed without making flowers. Early in the spring we have the complete flowers formed of calyx, corolla, stamens and pistil; but as the season advances the petals are not produced, and the calyx remains closed. The anthers, however, perfect a small quantity of pollen, sufficient to fertilize the ovaries, and seed is produced in this way in abundance. This process goes on when the cleistogamous bud is completely underground, and is the common condition of the plant in summer, but toward autumn a flower or two will be found with one petal, then a few with two or more, until late in the winter or toward spring the complete flowers again appear. Cleistogamous flowers are defined as those without petals, fertilized in the bud before the calyx opens, and which follow during the summer the complete flowers with petals, which cease to appear after June. Some earlier botanists believed that all the species of violets of North America produced these secretly fertilized flowers, and this may be the case in some localities. Darwin observes that the capsules of the violet bury themselves in the soil, if it be loose enough, and there ripen; but they are certainly very, if not more, frequently not buried at all, but only concealed beneath the foliage.

There is another fact in the matter of fertilization of the genus *Viola* that is very interesting, in that it furnishes two forms of the same species, *Viola tri-color*, or pansy—the one form being adapted to insects, the other to self-fertilization. In the large-flowered form the construction of the flower is nicely adapted to insects provided with a long proboscis. There is also a black, wedge-shaped streak which some observers think is intended as a guide mark to those little visitors which are diminutive enough to crawl entirely within the flower. This streak is completely wanting in the small-flowered form. When the visits of insects are prevented by a fine net, the blossoms of the small-flowered form wither two or three days after opening, every one setting a vigorous seed capsule. Those of the large-flowered form, when protected from the visits of insects, remain in full freshness for two or three weeks, at length withering without any seed capsule. When artificially fertilized they, too, wither after two or three days. Herein is contained a hint for the benefit of those who might be anxious to prolong the existence of especially fine, large specimens.

In *Viola wagittata* the capsule is three-valved; when matured, the valves contract, causing the seed to fly out in all directions. It is probably this that causes the prejudice against the plant in Gloucestershire, England. Many cottagers there deny it admission to their houses on the plea that it is "unlucky" and certainly brings fleas. The size and brown color of the seed and its manner of ejection from the pod gave rise to the superstition.

Prof. Green, in his new work called "Botany of the Region of San Francisco Bay," mentions and carefully describes eight distinct species of violets, seven of which would appear to be native to this coast, and the eighth—*Viola odorata*, or sweet violet—being an "escape from gardens."

The blooming season for violets in and about San Francisco is very long, they having been quite plentiful since the middle of last September, and will continue to be so until the middle of May. Thus for eight months we have some of the members of this large family coming to us as welcome visitors; and they are doubly welcome in that they come at the time when many of their more showy sisters are taking their winter nap.

Though the poet has so often held up to us the violet as an example of humbleness and modest shyness, in the future she will emerge from her green mantle of foliage and challenge the public gaze. She has evidently tired of her reputation, and in place of hiding herself near the ground on a stalk of a few inches will wear her pretty blooms on a stem from a foot to a foot and a half long. Mr. Carbone is the present owner of it, has named it the "Tiburcio Parrot," and promises plants in abundance by another year.

We come now to *Viola tri-color*, or pansy, derived from the French verb, *penser*, to think. The innumerable varieties of pansies are all hybrids between the annual species *Viola tri-color*, growing wild in the fields of England, and the perpetual kinds *Viola altaica* from Tartary, *Viola*

grandiflora from Switzerland, *Viola lutea* of Great Britain, *Viola Rothamagensis* of France and *Viola pedata* (variety bi-color) growing in America. It was first cultivated and made a florist's flower by Mary Bennet in a little garden in the grounds of her father, the Earl of Tankerville, at Walton, upon the Thames, England. Assisted by the gardener, Mr. Richardson, she transplanted the heart's-ease from the fields and made her experiments in hybridizing it with common violets. The result is the pansy of to day in great contrast with the little *Viola pedata* and *Viola tri-color*, the parents so common in woods and roadsides. It should be grown in rich, moist loam and protected from the mid-day sun and from winds. It is propagated in England by cuttings, but does better in the United States when grown from seed, as plants raised from cuttings in this country often suffer from the red spider. A number of years ago a fine collection of double pansies originated in this country; but failing to be successfully propagated from cuttings, were ultimately lost.

TRACK AND HARM.

Lessening Demand for Horses.

The following is from an address by Hon. F. A. Derthick, Mantua, O., before the students of the School of Agriculture of the Ohio State University:

The breeding of horses has heretofore been a profitable feature of agriculture, and its demoralization is no doubt an important contributor to the depression that is said to overshadow the vocation of the farmer. If our surplus horses could be disposed of, as in former times, it would relieve the stringency felt upon most farms, in two ways: First, by the money received for the horses, and, second, by the release of thousands of tons of hay and grain now held to feed to unprofitable stock. It is impossible, however, to dispose of any but the more desirable animals, and these at prices greatly reduced.

The Great Depression.—This change is due to several causes, among which can be numbered the general depression in business circles. There are, however, causes that will not be removed by a return of business prosperity. First, the quite general introduction of cable and electric cars within the past five years. Within this time the demand for horses for the street-car service has practically ceased. The influence of this alone can hardly be estimated. The life of the street-car horse was exhaustive and therefore brief, and to supply his place gave a steadiness to the horse market. The change in the motive power of street cars not only cut off the demand, but the thousands of horses already in use, now no longer needed, have found their way back into the country and are to-day distributed upon our farms.

Electricity.—Nor is the end yet. The road commission appointed by the Governor last winter to investigate the subject of improving our public highways is quite likely to report adversely to the use of stone and gravel in the construction of free turnpikes on the more important roads. A part of the membership of this board is known to favor the use of steel rails. The plan is, that important roads shall be traversed by electric cars, which will not only transport passengers at frequent intervals, but, also, with night trains haul produce to market. It would be folly to predict failure for this plan, for already suburban trains are run between adjoining cities, and roads are in process of construction in many parts of the State. There seems to be no limit to the skill and inventive genius of man, and the day may not be far distant when the services of horses may be dispensed with in ordinary country travel. It is insisted that it is not a question of possibility, but—"how soon" we shall be able to connect our individual trolley with the public electric wire and bowl across the country independent of horses. Who shall say that in the near future the young man, with his carriage equipped with a storage battery, may not go for a ride with his best girl, in which event the material for "a spark" would be an unflinching accompaniment?

Bicycles and Wings.—The advent of the bicycle has also contributed to the general slaughter of price and demand for horses. Large numbers of men and women who, until recently, kept a horse each, either for pleasure or business, have purchased a wheel and disposed of the horses. Again, I notice that on the 18th of November last, the first canal boat in the world to be propelled by electricity plowed the waters of the Erie canal. It is expected that at an expense of 50 cents per day per boat for electricity furnished by Niagara Falls, a boat will be sent from Buffalo to New York in much less time than at present, and with no outlay for driver, hay, oats or horseflesh. It would not be so bad if this were all. Did you notice the report of the international meeting of scientists held at Chicago during the World's Fair, and that they discussed in all seriousness the question of a flying machine? Ten years ago this body would have ridiculed the idea, but to-day these learned and dignified men declare, in all seeming sincerity, that the time is coming, and early too, when men will fly where and when they please, and from dizzy heights look down upon those of us who content ourselves with the snail-like pace of the old-fashioned horse. You will admit that a good part of this review recounts facts accomplished. A part, it is true, is speculation, yet who dare say that is conversant with the development of the last decade, that it will not be realized in the decade to come?

Better Horses.—At all events, steam, electricity, the waves and the wind are all competing for the honor of ministering to the wants of man, and I have been saying all this to establish this one point, namely: The majority of farmers must make a change in the number and character of the horses bred and reared upon their farms. Fewer animals and better quality must be the watchword to insure success. There are thousands of idle horses in Ohio to-day that will not sell for an amount, on April 1st next, that will balance the value of hay and grain consumed by them.

during the winter. Speaking in general terms, I believe the time is past and gone forever when an indifferent horse of any age or condition can be sold for a price in excess of the cost of rearing. It is doubtful if a horse can be brought to maturity, or four years old, for less than \$100, and I believe that certainly 50 per cent of the sound horses in Ohio can be bought for less than \$100. Where, then, is the profit? Some one has lost money. Upon the other hand, I do not think the time will ever come when the business condition of the country is normal that a horse of fine form and great powers of endurance, or an animal of good form, fine style and action, will not sell for a price that will compare favorably in profit with other lines of agriculture. If, then, these propositions be true, it follows that the business of breeding horses upon the farm must be reduced to that same system which has become necessary in every other line of farming. That is close attention to details. We should use not only thoroughbred sires, but dams possessing individual merit. Harmonious crosses, one that will produce a colt bred for a specific purpose.

THE VETERINARIAN.

Glanders and Farey and How to Detect Them.

TO THE EDITOR:—Glanders is a malignant and fatal disease due to the introduction into the system of a germ or micro-organism called the *Bacillus Mallei*. Glanders is purely a contagious and not an infectious disease. It is impossible for a horse to contract glanders where no other case exists, and when a horse contracts glanders it is a positive fact that he has come in contact with some other horse with the disease or where one has been kept, or the virus had been carried in blankets, harness, halters or by some other means. Perhaps a person's clothes had carried the virus.

A horse may be afflicted with glanders and stabled in an adjoining stable to a number of healthy horses, and unless those healthy horses have come in direct contact with the glandered horse or the virus, they will not contract the disease. It is a well-known fact that horses suffering from the glanders have been worked for months side by side with other horses, have drank out of the same troughs, are fed together in stalls adjoining, yet the glandered horse's mate did not contract the disease; whereas another horse stabled at a distance from the diseased horse might be tied at a place where the glandered horse was tied days or even months previously, and, through means unexplained, he will immediately contract the disease.

Too much care and caution cannot be taken in working about or handling a horse that even has a suspicion of this disease, for hundreds of persons, men, women and even children, have sacrificed their lives by carelessness in being around glandered horses. It is only a few weeks ago that a poor expressman named Wm. Beresford of this city bought a good-looking horse cheap from a sale yard in this city at what he supposed to be a bargain. At the time of buying he called the stableman's attention to a slight discharge from one nostril, but his fears were very soon quieted by the horseman telling him it was a slight cold which would pass away in a few days by feeding the horse warm bran mashes.

The horse had a good appetite, eye bright, hair looked smooth and glossy and he showed good spirits. The discharge from the nostril was the only sign of ill health. The expressman's wife, owing to recent parturition, was not as rugged as usual, so one Sunday he borrowed a buggy, hitching his recent purchase to it. Husband, wife and a child took a drive out through the Golden Gate Park and to the beach, where they proceeded to enjoy the day. The child, in romping and playing about, got near the horse, and the mother took the child by the hand, but as she stooped to take the child's hand the horse (as horses will) snorted and a small particle of the virus landed on her forehead. Nine days after the mother died a most horrible and agonizing death in the French hospital. Dr. Dudley Tait, chief surgeon of the French hospital, to be certain that he had made no mistake in his diagnosis, took the virus from the woman's head, and made a very careful microscopical examination, which plainly revealed the bacilli of glanders. He then made cultures of the bacilli on potatoes and in bouillon and the characteristic growth of this bacillus could be plainly seen. He afterwards inoculated a rabbit, guinea pig, mouse and a number of animals susceptible to this disease, and in every instance a verification was obtained. The poor woman died of that most malignant of all equine diseases—glanders. The day after his wife got sick, William Beresford brought the horse to the hospital, where he was immediately condemned and shot, and upon post mortem examination the inside of the head was found to be nearly eaten out and the lungs were in a like condition.

The past week, in San Bernardino, a teamster who contracted the disease from the horse he was driving is now dying a horrible, lingering but certain death.

GLANDERS IS EASILY DETECTED.

Symptoms—In most instances the disease presents itself in such a mild form that the general health is scarcely affected. There will be a discharge from one or both nostrils, generally from one nostril and that very often the left one. The gland under the jaw is swollen and hard. It may be small or large. It generally is as large as one-half of an egg, but in some instances after the disease sets in it may grow smaller, or *vice versa*. A horse may be left at night with the space under the jaw clear, and in the morning have a hard knot or tumor under the jaw which is both easily seen and felt. The swelling may continue for several days afterward, slowly disappear and then reappear as rapidly as before. This condition may exist before any discharge issues from the nose.

The discharge of glanders is such that it can never be

mistaken for any other disease. It is oily looking, green in color and very sticky. Bits of hay and chaff may be found sticking to the nostril. These appearances, in addition to a weak and debilitated condition of the eye on the affected side, may be all the symptoms present in a chronic case of glanders.

In some instances the discharge alone may be the only symptom present, the other symptoms not being constant. The first or premonitory sign of glanders may be a bloody discharge from the nose, which will be followed by the characteristic glandery discharge, viz., a greenish, oily, sticky substance, glazed or shiny in appearance when dry. The most positive symptom of glanders is seen by looking up the nostril, when a small, ragged ulcer or many ulcers will be noticed. This is a sure and certain sign, but the discharge may be present a long time before the ulcer will be seen in the nostril. Sometimes it is so high up that it cannot be seen, except by reflecting the rays of the sun up the nostril by the aid of a looking glass. The space between the ulcers, if there are more than one, is filled with small pimples; but if a horse has the discharge from the nostril, and an enlargement under the jaw, and upon looking up the nostril an ulcer is seen, it is pretty safe to kill the animal and fumigate the stable, scald the harness and other things used about the horse, tear out the stall, paint the walls with creosote and afterward whitewash them. If the stable is a small one it is best to make a bonfire of it. These precautions are absolutely necessary, for it is only a question of time before other horses become affected with the disease. It is a known fact that a stable in which a glandered horse has been kept is just as dangerous, and a horse will contract the disease from such a stable years afterward, so that a person cannot be too careful in not only looking out for his own horses, but also those of his neighbors as well. If any horses are seen about apparently in fair health and discharging from the nostril, it is to your own interest to report the same to your county supervisor or health board, and if the case is really glanders, have the proper authorities kill the animals and quarantine the other horses kept in the same stable until such a time as it can be ascertained that they have not contracted the disease.

It behooves all horsemen and horse-owners to do all in their power to assist the authorities in stamping out this disease, for you do not know in what form you will pay for your neglect. Probably your own life or that of some one dear to you may be sacrificed by such a simple act of carelessness as not reporting a glandered animal, or even a suspicious case; or, if you do not suffer in this way, you may be out of pocket by the loss of a good horse contracting the disease by drinking at the same trough at which a glandered horse has been drinking. Six horses were killed in this city the past week and two more are reported now, so it behooves all horse-owners to be on the lookout and to report all cases that come under their observation, and by this means aid the State in getting rid of such a malignant, dangerous, contagious and fatal disease.

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THE HIGHWAY.

An Opinion on the Power of Supervisors.

L. L. Chamberlain has addressed to the supervisors of Placer county the following opinion as to their powers and duties in relation to the care and maintenance of public highways:

The solution of the question involves the proper construction of Sections 2741 to 2646 of the Political Code, they being the general legislative enactment upon the subject.

There has been several radical changes in the provisions of the law, and as the intent of the Legislature is to be looked at, a cursory review of some of its changes may be of importance in that connection. Under Section 2641, each member of the board is made ex-officio road commissioner for his supervisor district.

Under Section 2642, as it existed up to 1893, the board had the power of appointment of road overseer or road master for each road district, to be under the direction of the road commissioner of his district. The powers and duties of the road overseer were provided for in Section 2644. The system was full of abuses, and in 1891 the Legislature abolished the office, the act to take effect January 1, 1893. In the act abolishing the office is the following proviso, "provided that whenever in this Code the word 'overseer' occurs they shall be taken and construed so as to read road commissioner."

Section 2643 prescribes the duties of the board relative to highways. Subdivision 5 of the last section, up to 1891, read as follows: "They must by proper ordinance, in their discretion, let out by contract the construction, maintenance and improvements of the highways * * * when the amount of work to be done exceeds two hundred dollars."

In 1891 this subdivision was changed so as to read: "The board must, at the first regular meeting in January, 1893, and at any regular meeting thereafter, advertise for sealed bids for keeping in order and repair all such roads," etc.

At the same time a new section, 2646, was enacted prescribing the procedure for carrying out the provisions of the sub-division last quoted.

In 1893 the Legislature again made a sweeping change in the law. Sub-division 5, of Section 2643, as last quoted, was entirely stricken out, as was also Section 2646, and in their place and stead, so far as the contract system is concerned, an entirely new method was adopted. It gives the board discretionary power to advertise for bids to *grade, turnpike, gravel or sprinkle*; nothing whatever is said of *care or maintenance*.

The intent and meaning of the Legislature is obvious;

the words mean just what they say, and no other or further power is given than is necessarily implied in the terms used; each and every term is a specific act or transaction and cannot be construed to mean a series of continuous or recurring acts, except, of course, the term "sprinkle" has a definite meaning of its own.

That this is so is made more manifest by the rest of the section. It provides with great particularity what the advertisement must contain: "It shall specify the road or roads upon which such work is to be done, the kind, character and extent of the same, so as to plainly indicate to bidders the work to be bid for."

It provides, further, that the county surveyor may be called upon "to survey and furnish a profile of the proposed work, showing cuts, fills and grades as fully as possible, etc."

Under the act of 1891, in Section 2645, the road commissioner was simply made to take the place of the road overseer with practically the same duties.

The act of 1893 is practically the same, leaving out of the section the provision requiring quarterly reports. The compensation of the road commissioners is fixed by Section 2641.

In fine, it is clear that the Legislative intent, by its latest enactments, was to return practically to the system in vogue up to 1891, the road commissioner taking the place of road overseer; that the board is no longer allowed to contract for the care and maintenance of roads, and that whenever any specific work of grading, turnpiking, graveling or sprinkling is to be done the board of supervisors has a discretionary power to let the work to the lowest bidder.

THE IRRIGATIONIST.

Windmill and Horse Power Irrigation in Kansas.

They seem to be making good progress with this style of land-wetting in the arid region of Kansas. In a report of a meeting in the interests of irrigation held in that State we find the following:

E. R. Moses, president of the Interstate Irrigation Association, read a paper on irrigation. He referred to the fact that the English Government has spent \$50,000,000 in irrigation works in India since taking control of that country. We do not expect the general Government of the United States to dig us canals and build reservoirs, but we do want it to make experiments to show what can be done. Kansas will then make appropriations to reclaim the wide range of arid land within her borders. When it is once shown that irrigation in the arid regions is practicable, and will give a good return for the labor expended, there will be no lack of capital. Capitalists have invested over \$60,000,000 in irrigation works in southern California alone. But farmers should try to do all they can themselves, and not depend on the capitalists. This can be done by co-operation.

If every farmer in the country could irrigate from three to five acres of land, they would be sure of a living, and then they could make their profits in the years when they had an abundance of rain.

Mr. I. L. Diesam read a paper on irrigation from wells with wind power. He gave his own experience. His well is 13 feet deep and the water has to be lifted eight feet. If he were going to do it again, he would sink down points and thus save \$100 on the cost of his well. He now raises his water by wind power, and is able to pump 4400 barrels every 24 hours. One must have a reservoir into which to pump the water, for if he sends it out as he pumps it, the amount of water will not be sufficient to thoroughly wet the ground to be covered or to do it quick enough. He has two reservoirs, one 160x150 feet and the other 80x150 feet, and with these he is able to irrigate 20 acres. These reservoirs can be built at very little expense. Wind power does not cost him more than \$1 per month. He has his reservoirs stocked with fish, and his family has had from them all the fish they could eat for years. In the winter he utilizes them as ice ponds, and puts up enough ice to last all summer. Clear water is better for irrigating vines and young plants than river water with sand. With irrigation farms will be more numerous but smaller.

Q.—What is your farm?

A.—My farm is what they call bottom land.

Prof. Hay—I wanted to ask that question because of a word or two that I have heard said to-day. It was to the effect that if a man was by a creek, he could irrigate his land, but if away from water it was useless for him to try, for he could not irrigate enough to amount to anything. But the Western man does not try to irrigate his whole farm if he has a quarter section. He is content to irrigate 40 acres of it, and if he cannot irrigate more than five acres, he can make a living on that five acres. Then having a living, he can take his chances on the crops on the rest of his farm. The method of getting irrigation on the land is sometimes spoken of as expensive. The gentleman from Cheyenne county is from a region that we generally think of as the most arid in the State. There are many valleys there that have no water in them for most of the year. One farm that I know of raised water by horse power, and raised it 12 or 15 feet, in sufficient quantities to irrigate about three acres. They got nearly \$600 from that three acres that year. The whole farm comprised 160 acres, but, with the exception of the three acres under irrigation, the farm yielded almost nothing on account of the drouth.

Mr. Churchill—I am a believer in irrigation. I have three reservoirs, and they are filled with fish. I believe that every man in Kansas that has a windmill can raise his own fish. I also think that the alfalfa root is a good thing with which to tap the underflow. I prepared ten acres of land by harrowing it. I then got 20 pounds of alfalfa

seed, and in two years I had made my connection of the alfalfa with the underflow.

Q.—Do you cement those reservoirs?

Mr. Campbell—It is necessary to cement them, or else tramp down the mud so it will be solid.

Q.—What kind of crops do you raise?

A.—I raise almost everything except small potatoes and alfalfa. I raise cabbages, corn, oats, wheat and garden truck. Then I have an orchard of all kinds of fruit.

METEOROLOGICALS.

The Production of Artificial Rain.

By B. S. Pague, Forecast Official U. S. Weather Bureau, Office, San Francisco.

In arid or semi-arid regions the subject of rainfall in connection with crop production is a most important one. The question of what is the least amount of rain that is necessary to produce crops has been frequently argued, but this one fact can be relied upon: Good crops on other than adobe soil can be raised with ten inches of rainfall, if the rainfall is properly distributed and the temperature conditions favorable. With unfavorable temperature conditions at the time the stem of the product is full of sap, 40 inches of annual rainfall will not assure good crops. In California the autumn rains begin in October, and by December 1st the soil in all parts of the State is in condition to plow and seed. The rains of December, January and February are usually sufficient, even in the phenomenal dry years, to cause the seed to sprout and the grain to grow. Statistics bear out the assertion that it is upon the rainfall of March, April and May that the crops of California depend. The largest crop ever produced in the State was in 1880, when in April the rainfall was the heaviest on record. The years of great drouth in California and consequent short crops were in 1851, 1864 and 1877. As the State is developed the necessity for irrigation is more apparent, and more irrigation is practiced year by year, so that the same percentage of deficiency in the total product will not prevail that did prevail in former years of deficient rainfall. The following statement shows how the rainfall this season compares with the average:

PLACES.	Total for Season to date.	Average Seasonal to date.	Average Seasonal, July 1 to June 30.	Percentage of Deficiency for Season to date.
San Francisco.....	16.10	20.88	23.93	23%
Red Bluff.....	19.16	22.23	26.56	13%
Sacramento.....	13.85	16.91	16.63	18%
Fresno.....	6.17	8.33	9.27	26%
Los Angeles.....	6.40	16.15	13.22	60%
San Diego.....	4.76	9.88	11.16	52%

In the season of 1876-77 the total rainfall at Los Angeles amounted to 5.28 inches, at San Francisco to 10.00 inches and at Sacramento 8.96 inches. In 1863-64 the total at San Francisco amounted to 10.08 inches, at Sacramento 7.87 inches, while for the least seasonal rainfall on record, in 1850-51, at San Francisco 7.40 inches and at Sacramento 4.71 inches fell. In a period of 45 years there have been three seasons of drouth in California, and in addition several years of markedly deficient rainfall when vegetation suffered and crops were short for lack of rainfall. These facts are mentioned to show that artificial means are necessary to always insure sufficient moisture for good crops, though in favorable years—favorable inasmuch that the rain has been well distributed—artificial means need not be resorted to, to produce good crops.

A popular fallacy exists that after all great battles heavy rain fell and that the rainfall was due to cannonading. This fallacy took such a strong hold of some that Congress was induced to make an appropriation to determine whether rain could be produced by the use of explosives. The experiments were conducted in 1891 in Texas, under the charge of the Forestry Division of the Agricultural Department. The official report on the subject, made by the meteorologist who accompanied the expedition, contained the following: "These experiments have not afforded any scientific standing to the theory that rain storms can be produced by concussion."

When the expedition reached Midland, Texas, some experiments were made to test the material composing the rackarock. No results were expected from the tests, but the following afternoon considerable rain fell. An employee of the expedition took upon himself the sending of the following message: "Fired some explosive yesterday afternoon; raining hard to-day." This first telegraphic report was followed by others. As the actual operation and result have become known, the attitude of the newspapers became changed from unsuspecting and ready acceptance to satire and ridicule. Where millions saw the dispatches, only hundreds have read a detailed account of the exact facts, and a vast number of people still believe that the experiments were in some degree successful, and that concussion, when made for the purpose, will produce rain. So errors which will require years of teaching to eradicate have been sown broadcast in a single summer, and the rain-making myth is added to the numerous errors about the weather which already prevail.

Charlatans, sharpers and fakers have not been slow to seize the opportunity thus afforded. Artificial rain companies have sprung up and are yet engaged in defrauding the farmers of this and other States by contracting to produce rain and by selling "rights" to use their various methods.

Rain-makers are now at work in this State, especially in those sections where the deficient rainfall is most noticeable in its effect on crops. Mr. Edgar B. Davison of Ballard, Santa Barbara county, writes this office under date of April 5, 1894: "Would you kindly inform me as to the

possibilities of causing rain by artificial means. We all know that during the Harrison administration experiments were made on the production of rain, but the newspaper reports were so conflicting as to be entirely unsatisfactory. Were these experiments as complete failures as some authorities would have us think? We have the prospect of a dry season staring us in the face, and there is some talk of 'rain experiments.' Will you kindly give me your opinion on the matter."

This is in answer to Mr. Davison's letter: For example, suppose you take a cubic mile of air, upon which operations were made in Texas on the night of Friday, November 25, 1892. The record shows the temperature of the air as 72°; the dew point as 31°. To cool down a cubic mile of that air to the dew point would require the abstraction of as much heat as would raise 88,000 tons of water from the freezing point to the boiling point. To cool it down another 11° would require as much more heat to be abstracted. The amount of water set free would be 20,000 tons, which spread over a square mile would give about 1.4 pounds per square foot, or 0.27 of an inch of rainfall. The amount of latent heat set free by the condensation of that amount of water would raise 100,000 tons of water from the freezing point to the boiling point, and it would be necessary to abstract this heat in order that the rain-making might go on. The foregoing is on the presumption that the cubic mile of air be kept constant; if the air operated on is constantly changing, the task becomes one of infinitely greater difficulty.

Two causes of artificial rain have been suggested—explosion and fire. The belief that battles occasion rain is older than the invention of gunpowder, for Plutarch, in a sentence often quoted, says: "It is a matter of current observation that extraordinary rains pretty generally fall after great battles." And he explains this by supposing that some divine power in this way cleanses the earth or that the vapor from the blood steams forth and makes moisture fall. If from a great heat a large body of air is made to ascend in a column, a large cloud will be generated and that cloud will contain in itself a self-sustaining power which may move from the place over which it has formed and cause the air over which it passes to rise up into it and thus form cloud and rain, until the rain may become more general. This is in theory, but the records of great fires do not show that rain has been caused by them. Relative to explosions or concussions, it appears probable that on the southeast quadrant of a storm, the region of greatest moisture, if no rain should fall, though it threatened, that great concussions to cause a disturbance of the water particles held in suspension would produce rainfall. The Texas experiments were made without attempting to produce rain when the conditions were favorable for rain; but, under any and all conditions, the attempt was made, with the result a practical failure, though in a few instances a few drops of rain fell.

It may be stated in conclusion that, admitting that explosives and fires have in some few cases determined rainfall, they can only do so when moisture is present in sufficient quantity in the air, and when the other conditions, such as temperature and wind, are favorable. In other words, when the conditions are favorable for rain explosives and fires may precipitate rain, but when the air is too dry no artificial means can cause rain to fall. Legitimate scientific investigation for the production of rain should be encouraged, but the experiments should first be carried on in the physical laboratory before attempting them upon nature's great physical laboratory. Those people who do not desire to be duped will do well not to contract or subscribe to any rain-making agents for the production of rain. Money invested in developing irrigating canals will prove to be of far greater value and yield ten thousand fold more returns.

San Francisco, Cal., April 11, 1894.

THE FIELD.

Don't Grow Too Many Hops.

A hop-grower who evidently has wide acquaintance with hop-growing in California and in other parts of this coast gives the *Portland Farmer* an article arguing against increasing the hop acreage. The points made will be considered with interest both by those new in the business and those contemplating entry to it. For this reason we reproduce leading portions as follows:

I noticed with a great deal of interest a paragraph in your last issue as follows:

The largest hop-grower in the world last year claimed that it cost him nine cents per pound to produce his crop of hops—4200 bales. He should come to the Northwest, where he can reduce cost of production by increased yield.

The last sentence should be put in "italics," as it is principally that to which I wish to submit an answer. Speaking of the "largest hop-grower," and mentioning the cost of production in "cents," I suppose you mean the largest grower in the United States, and that is, to my knowledge, Dr. D. P. Durst at Wheatland, Yuba county, Cal., as far as quality is concerned. In 1892 that gentleman raised, of not quite 240 acres, over 3300 bales of hops, averaging on such large area fully 2300 pounds net per acre. This yard is all trellised (wire yard), and when I visited that immense yard in early March, 1893, more acreage was being put in; and, although I have not heard about his last crop, I should not be surprised but that the figure you mention comes pretty near to the yield of Dr. Durst's yard.

But why do you, or whoever wrote the paragraph quoted above, advise that grower—whoever he may be—to come to the Northwest, "where he can reduce cost of production by increased yield?" True enough, I know, to my own knowledge, that for a number of years a small grower on Willamette bottom land in Clackamas county has raised on

a five-acre patch, every year except the last three, about 3000 pounds per acre. But where is the land or existing hop yard of say nearly half a section, here in the Northwest, which has raised, or will raise, an average all through of 2300 pounds per acre of a choice quality of hops (not so-called "swamp hops")? As to the cost of production, on such a large yard, nine cents may be quite correct.

Hop-raising on the Pacific coast is, comparatively speaking, a new industry, for what do a half score or even a score of years count in the ages of agriculture? A closer attention has been called to this industry the last few years because the ordinary farmers have scarcely made a living raising grain, vegetables, wool, etc., on account of the low prices prevailing for these products. With envy the raisers of these products have looked on those who raised hops, and who have thus realized a little ready money; and now all of them, it seems to me, want to go into the hop business. There is no doubt whatsoever in my mind that already, this spring, Oregon's acreage in hops will be at least doubled, and so will be Washington's. The Californians are, however, wiser. They have been there before and know what overproduction means. In the years 1891, 1892 and 1893 the hop-raisers were fortunate enough to realize a good deal over 10 cents a pound; but how will it be when prices get down below 10 cents, as we have had it several times before, when scarcely four or five cents can be had? It will simply pay the price of picking. Or what will be the condition of hops when they cannot be sold at all? It is my honest belief that such time will surely come.

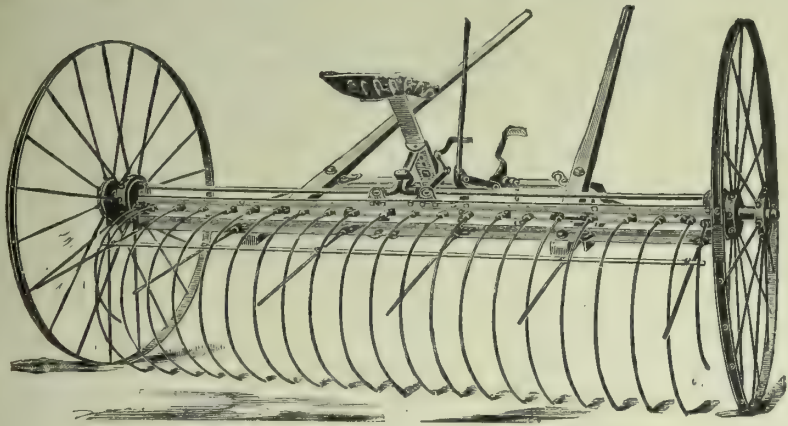
You may, perhaps, think that while I am a hop-raiser I have a personal object in view in trying to keep others out of the industry (for hop-raising is an industry if properly carried on, and not a common farm work, as many think). But such is not the case. I am also a hop-buyer, principally for England, and in the interest of this, my principal business, I would like to see plenty of hops grown—the more the better—for then the time would come when I could buy them for \$1 a bale. Do not think this a wild statement, for I have done this very thing in California within ten years. This whole matter of hop-raising, to any thinking man, is a plain question.

The use of hops is limited to that of beer-brewing, the amount used for medicinal and domestic purposes cutting no figure at all in the disposition of the crop of the world. The other farm crops, such as cereals, fruits and vegetables, can all be turned to other uses. The markets of the world are open to them and they are susceptible of being used in more than one channel, but hops are of no use after the brewers have secured as many as they want, one pound to a barrel being sufficient for their needs.

I have been asked a thousand times what it costs to raise hops. I answer now, no one knows. According to my idea and experience hop-raising is, as I have said before, an industry, and is more nearly allied to a manufacturing operation than to ordinary farming. A hop-raiser's plant is never finished. I do not know of a single hop-raiser, and my experience is based upon an experience of 32 years' active business in hop-raising on the Pacific coast and a wide acquaintance with the principal hop-growers throughout this whole section, who has up to the present time grown rich in the hop business alone and who can truly say, "I have now everything quite complete and I can retire and leave my well-completed plant to my children."

To return to the question of cost. In order to arrive at the expense of production I have asked some of the more intelligent growers in every district in Oregon, Washington and California how much it costs to produce hops, and in every case I have received a different answer. Very few keep an accurate set of books and they are therefore unable to answer the question accurately. One of the most successful growers of hops in Sonoma county, California, (which district raises the finest hops on the coast, the next being those of northern Marion county, Oregon, the so-called Butteville district), places the cost of producing hops at 13½ cents a pound. It is fair to say that fuel, poles, labor, etc., are a little higher there than here in the Northwest. The lowest estimate I received from growers in the Sacramento valley was 9 cents a pound. The manager of one of the largest northwestern Washington yards told me that their crop cost them about 12 cents a pound. I have been told by an intelligent Chinaman, who leases a yard in this State at a nominal ground rent, that his hops cost 8 cents a pound. But when white farmers assure me that they can raise hops at 8 cents a pound I am led to the conclusion that they are simply mistaken in their calculations; they do not figure in the cost of production anything for their own work, nor that of their families, nor interest on the investment, nor deterioration of their land. I say that no man dependent on hired help and figuring everything, including the wearing out and replacing of buildings, implements, etc., can raise and place upon the market hops in bale under 10 cents a pound. Anything over this may be figured as profit, but such profit usually goes back into the land in the shape of new improvements and necessary repairs and betterment of the yard. Now, what will these men be if hops go down to 6 cents a pound? It may be that you think I am looking at matters only on the dark side; but let us go into figures, for it is a well-known fact that figures do not lie. My experience, however, has been that, while figures may not lie in actual statistics, the careful business man does not base his transactions always upon statistics only. If he does so he is apt to get fooled nine times out of ten. For instance, take this as regards the price of hops. We have been told all along that Germany's crop was a failure; that England's crop was short and of poor quality; that New York State's crop was short and also of poor quality, and yet, in the face of all that, the prices ever since hop harvest have been 4 cents a pound lower than those of last year. The market is exceedingly dull now, and this in spite of the fact that only one-eleventh part of the crop of 1893 remained in the hands of the coast growers on the 31st of December, a little more than three months since the crop harvest.

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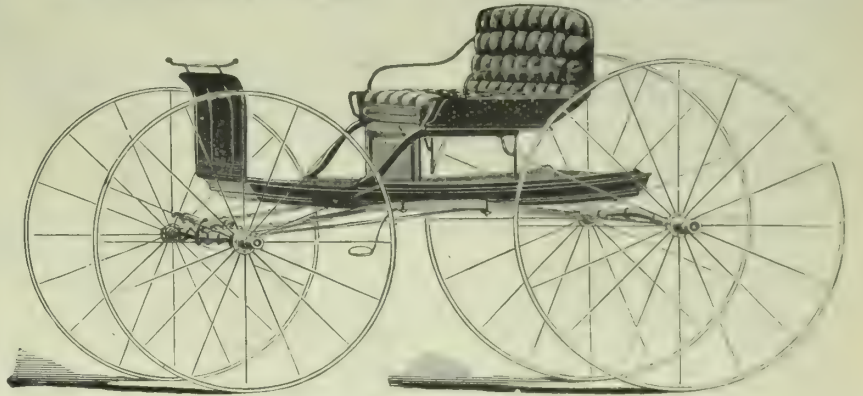
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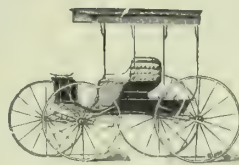
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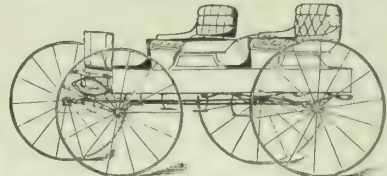


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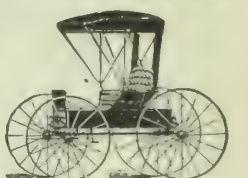
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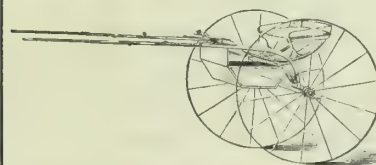
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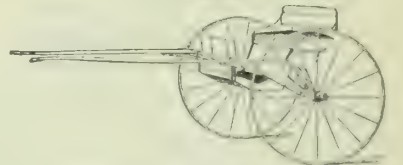
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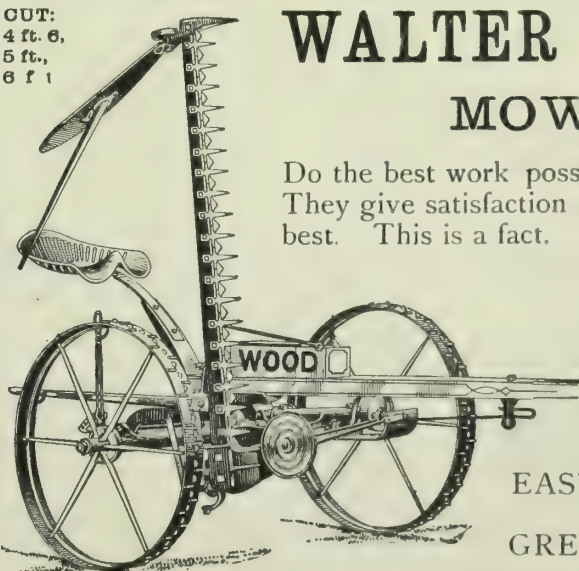
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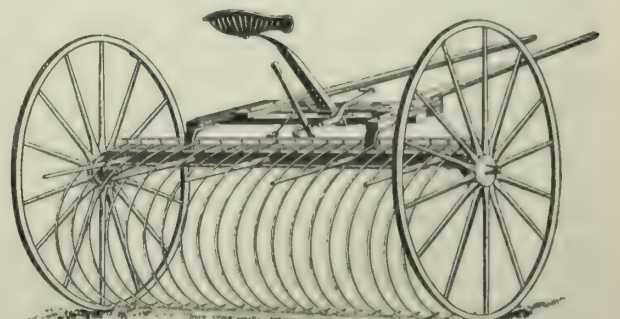
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THE HOME CIRCLE.

The Rose and the Gardener.

The Rose in the garden slipped her bud
And she laughed in the pride of her youthful blood,
As she thought of the Gardener standing by—
"He is old—so old! And he soon will die!"

The full Rose waxed in the warm June air,
And she spread, and spread, till her heart lay bare;
And she laughed once more as she heard his tread—
"He is older now. He will soon be dead!"

But the breeze of the morning blew and found
That the leaves of the blown Rose strewed the
ground;

And he came at noon, the Gardener old,
And he raked them softly under the mold.

And I wove the thing at a random rhyme,
For the Rose is Beauty, the Gardener Time.

—Austin Dobson.

Bose.

SHE had been crying at intervals all the afternoon, and, though it was well on toward dusk, and lights were beginning to redder here and there in village windows, she still sighed now and then, and made furtive little dabs at her eyes with a damp ball of a handkerchief.

The green-shaded lamp on the sitting-room mantel revealed her as a slight young woman, whose small face seemed once to have been of a pink and dimpled sort, but which now was merely pale and thin, under a disordered fluffiness of light hair.

Though it was May, and trees were all in leaf, a fire cackled in the sheet-iron stove near which she sat. There was a shawl about her shoulders, and on a table hard by a bottle of camphor stood.

She looked up with a nervous start as the door opened, admitting a tall, gaunt woman in a purple calico gown. The newcomer carried a cup of tea. She walked with stiff precision. Everything about her—lean cheeks, twisted gray hair, and sharp chin—had a certain rigor, borne out in the very tones of her voice.

"My goodness!" she cried, observing the lax young figure by the stove, "you ain't still a-goin' on over that cat, I hope, Mattie Slosson!—a losin' strength jest as fast as you gain it!"

Mattie sighed, but said nothing.

"Because if you are," went on the older woman, "I'm bound to say it's all foolishness. I can't say that cat wasn't as pretty a Maltese as I ever saw, but I don't believe in takin' on over a cat like it was a human. I do not. So far as I'm concerned, I feel madder about losin' it than I do sorry. Raisin' it up from a kitten jest to hev your neighbor's dog run it to death makes me ragin', so it does."

The girl by the stove turned a glance of sad questioning.

"Sis' Sarah," she asked, gently, "do you know whose dog it was?" Miss Sarah's lips stiffened.

"Mebby I do."

"Was it *his*—I mean was it Bose? I kind of hate to think it was Bose." She flushed a little under her sister's sharp glance.

"No matter what dog it was," premised Sarah, grimly, "he'll get his dues when I ketch him, that's all. She tossed her head as she left the room.

A candle in a pewter holder flickered on the table in the kitchen. Its fanning flame touched the tins on the wall and made a pool of color on the yellow enamel-cloth table-cover. Through the small gray window could be seen vague tree-shapes and the dim bulk and lighted panes of neighboring houses. One particular window glowing brightly just across a garden-space to the southward seemed to fix Sarah Slosson's regard. She lifted a menacing finger.

"It was your dog," she whispered—"your dog. 'Twasn't enough, Hiram Conner, that you must treat my sister like you did—payin' her attentions and wheedlin' around her constant and then quittin' off all of a sudden without sayin' so much as good-evenin'—that wasn't enough. You must go to work and keep a savage houn' dog to run her cat to death—almost the only thing she took any interest in!" She had paused, with her long finger still uplifted, though now her attitude suggested a grotesque conception of Retribution less than one of Silence.

There was a little, soft, padding sound on the porch outside. Miss Sarah's eyes fired. She laid a quick hand on the latch. A pair of round, bright eyes, set between long, flapping ears of yellowish brown, revealed themselves in the outer gloom.

"Begone!" said Miss Sarah, sternly. But Bose, apparently accustomed to her tones and to the fact that something to eat gener-

ally followed her worst threats, stood quite still, with his red tongue lolling. That he had been seen that very morning chasing a gray cat across the garden-space between his master's house and the Slosson cottage did not seem to weigh upon Bose's remembrance. He thumped his tail on the porch floor with the utmost good-will, while Miss Sarah reflected upon the fate of the gray cat and tried to be glad that the gray cat's slayer was in her hand.

Retreating into the room, Miss Sarah made a clicking sound with her lips. This note of invitation Bose responded to at once in the liveliest fashion, by leaping into the kitchen and about Miss Sarah's gaunt figure.

But his frisking only deepened Miss Sarah's resentment. The dog seemed to partake of the traits she attributed to his master, and those frolicsome impulses suggested a reprehensible unconcern for past faults.

The elder Miss Slosson, standing stiff and straight in the middle of the kitchen, recalled vividly the evenings when, at precisely half-after seven, Mr. Conner's step had been wont to sound on her front porch. In those times there was always a fire in the parlor of Friday nights, and while Mr. Conner's voice and Mattie's mingled in the gayest talk and laughter, Miss Sarah, sitting by herself over the kitchen stove, had been used to meditate upon the times when her loneliness should be permanent instead of transitory. They were only half-sisters, the two "Slosson girls," and the difference in their ages had given an almost maternal character to Sarah's regard for Mattie. She had felt that, when Mattie married, life would be singularly empty, but she had reconciled herself to Hiram Conner because there was really no objection to be raised against him. He was the only son of a well-to-do family, and Sarah rejoiced that, since Mattie must marry at all, her choice was upon so reasonable a basis.

"Your sister's going to do right well. I hear her and Hiram Conner's going to make a match of it," said a neighbor to Sarah.

"I d' know as it's anything of a match for Mattie," proudly protested Sarah. "She's been raised to everything—organ-playin' and all."

"He's a well-fixed young man, Miss Sarah."

"I reckon he'll do. But I reckon Mattie could do better. I d' know as he's jest the man I'd pick out for her."

After all this arrangement of the young people's affairs, it began to be noted in the village that Hiram Conner had suddenly ceased visiting the peaked white cottage of the Slossons. Speculation was rife. Every one wondered what had happened. It was useless to question Miss Sarah. In the first place, she would have resented a question; and, in the second place, she was herself in a daze of bewilderment.

Mattie, too, though she said nothing, appeared ignorant as to Mr. Conner's motives. For a month or so, of Friday nights, she crimped her fair hair and tied a ribbon about her slim throat, and lighted the parlor fire, and played little tunes on the organ far into the evening. Then she seemed to give over all expectancy. She waxed pale and thin and sat much at the window, looking with large, hopeless eyes into the street—the long village street which was so empty because a young man with a wholesome but most unheroic redness in his cheeks no longer fared up its shady length to the Slosson's cottage.

All these things passed through Sarah's mind as she frowned upon Bose.

"A life fer a life is Scriptor," she said to herself; and this oneness of her intention with the law and the prophets seemed to nerve her.

She took a small bottle from a shelf, and poured a little of its contents into a saucer of milk. Bose sniffed at it warily. He tasted it and shook his ears. His round, yellow eyes, as he paused with an uplifted paw to glance at Miss Sarah, gave her a pang. She made as if to snatch the saucer swiftly away, but jerked her hand behind her.

"I reckon that pore kitten suffered more than what you will," she said to Bose, observing that he had overcome his scruples and was gulping down the mixture.

There was a step on the threshold. Mattie stood leaning wearily against the jamb.

"Why!" she said, "are you feeding Bose? I didn't know you'd forgive him so soon. Bose! Bose! you didn't mean to hurt poor pussy, did you?" She laid her hand on Bose's head. "They say—Mr. Conner's real fond of Bose," she went on. "I suppose he's pretty lonesome since his mother died last fall."

"He don't deserve no sympathy," said Sarah, hardly conscious whether she meant Bose or his master. Mattie still fondled

the dog's silk ears. Sarah, with a sort of guilty trepidation, regarded the little group. Bose was doomed. Miss Bose did not know in just what measure of time toothache mixture, supposed largely to consist of laudanum, projects death upon the canine system.

Of one thing, however, she was certain; though Bose deserved his fate, she wished another hand than her's had meted it out to him. She was less a Spartan than she had fancied.

"I reckon I'll feel all right as soon as he's gone," she meditated. "He better go home," she said aloud. "I d' know but he has fleas, anyway. Here, Bose!" she opened the door, and Bose dejectedly departed.

The next morning she looked out with a sense of apprehension. No inert furry heap, however, lay at her door. Justice, no doubt, was by this time satisfied, but the victory was not in sight, and Miss Sarah breathed again.

"I wish Bose'd come over for those chicken bones," said Mattie that night after supper. She went to the door. The little path Bose had made through the intervening garden space by his frequent trips between his own and the Slosson's abode could be seen in the twilight. But though the girl softly called him, no Bose responded.

"You sent him home last night," she said to Sarah. "Maybe his feelings were hurt!" She laughed as she spoke.

"Well, I hope he'll stay where he belongs," said Sarah, sharply; "trackin' the porch up with his muddy paws!" Her voice sounded strange, and she made a great clatter with the tea things.

A day or two passed on. Though it had, of course, been necessary that Bose or Justice should die, Miss Sarah had a growing remorse at having meddled with the forces of life and death. She looked into the almanac and found that a dog's tenure of life was fifteen years.

"He was only one," she mused. "I've took fourteen years of chicken bones and rabbit huntin' and dog pleasures generlly from that pore creature. If he hed a here-after I wouldn't feel so. But he only hed life, and that's what I took. I'most wish I hedn't done it. I d' know but a dog's higher 'n a cat, anyway."

She gave a small groan.

"Don't you feel just right?" asked Mattie. She was so used to being the one whose symptoms were matters of interest that, for a moment, Sarah's possible headache rather surprised her.

"You'd better go and get a little fresh air," she advised. "You've been cooped up in the house too much lately. To please me, Sarah, take a little walk, won't you?"

"Mebbe it'd do me good," said Sarah. "I'll go down and get some fresh eggs from old lady Winston. You always relish 'em for breakfast."

It was late in the afternoon, and the sun was sending low shafts of yellow through the wayside trees. Blue jays were calling shrilly, and a canary in a cage outside a cottage window lifted up a sweet note of reply.

Sarah, with a basket on her arm and with a checked sunbonnet over her gray head, walked down the paveless street. Hiram Conner's square brick house lifted importantly into view. Sarah, giving it a furtive, unwilling glance, decided that it wore rather an unkempt air since his mother's death. Chickens were straying about the front yard.

"If Bose was 'round," thought Miss Sarah, "them hens wouldn't dast to scratch up the garden." But Bose was not around. Some one had been turning up the sod in a corner of the yard, and Miss Sarah had a sharp qualm. Perhaps Bose was buried there? She drew nearer the fence, and as she did so a man came round a corner of the house. He was a young fellow, with a straw hat over his eyes, and as he saw Miss Sarah peering over the pickets he started and drew up short.

She looked up, and he said, rather stiffly, "Good day," Sarah did not reply to this, but he stepped something closer and said:

"Why, Miss Slosson, I—I just thought I'd tell you how sorry I am about Bose killing your cat. Mrs. Gray told me. I'd of felt bad about it anyhow, but happenin' like it did—your sister's cat—I can't tell you how sorry I am."

Miss Sarah took this coldly.

"I don't reckon bein' sorry ever quite squares things," she said.

He flushed angrily.

"No," he cut in with heat, "it don't. No one ought to feel that more than you, Miss Sarah. When you've spoiled a man's happiness, being sorry don't help him. And I don't know as you've said anything about regretting—all that."

Miss Sarah drew a quick breath.

"I didn't know you set so much store onto him as all that," she said. "But I will say this: I'm sorry I done it. I ben sorry ever since. I have so. And the thing that haunts me worst is the feelin' that I didn't pison him for killin' the cat so much as for belongin' to you. There, now, I've said it." She stood with a shaking hand upon the fence-rail.

Hiram Conner's face wore a bewildered expression.

"I don't seem to get your meaning right," he owned. "What I'm blaming you for is for saying to folks that I was no match for her—for Mattie. If you felt like that—you and her—you oughtn't to have encouraged me. All I hope is that whoever she marries will be as good to her as I'd of been. Why—Miss Sarah!" His exclamation was due to the fact that Miss Sarah had stumbled weakly against the fence, with her face working.

"It's me, then?" she murmured. "It's me that's ben causing her all this sorrow! I—O Hiram! I said it, yes I said them very things! But 'twas out'n pride. I didn't mean 'em like they was told you. And, Hiram!—she's missed you—Mattie has—she's missed you."

The young fellow's face fired.

"Honest?" he asked sternly. "Don't you tell me that unless—O Miss Sarah! has she missed me?"

The woman nodded.

"I'm going right down to see her," he burst out, throwing the gate open. But Miss Sarah caught at his sleeve.

"You don't bear me any hard feelin's, then, Hiram?"

"Hard feelings?"

"For killin' Bose."

They were hurrying along under the beeches, and he turned and gave her a wondering look.

"Killing Bose! Why, he's out in my barnyard. That's him barking right now. I've kept him tied since he killed the cat."

"But I pisoned him!" gasped Miss Sarah. "With toothache medicine. It had a skull and crossbones on the label."

"Maybe the strength was lost," conjectured Conner; but the matter stirred only a surface portion of his mind, for they had neared the Slosson cottage, and at the sitting-room window he caught sight of a little fair face that flushed and then turned very white.—Eva Wilder McGlasson.

Old Men In Public Life.

The portraits of Gladstone presented by the press of the country a few weeks ago were of a strong face, the intellectuality of which had not been dimmed by the vicissitudes of time, and the lines of which were suggestive of energy and determination rather than of age. And yet Gladstone is a man of 84 years, whose life has been one of almost ceaseless activity and responsibility. Moreover, many of the men who are prominent in European political life, though counting fewer years than Gladstone, are far older than the leading politicians and statesmen of America.

Whether it is because a political career in this country draws more heavily on the vital forces, or because the incessant activity of American life is more wearing, it is true that few of our public men have lived beyond middle age. This is illustrated by the fact that, although the Presidential term is but

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four years, and relatively few Presidents have served a second term, there have rarely been more than two ex-Presidents living at the same time. Reference to the records shows that Washington died before the completion of John Adams' term of office, leaving the country without an ex-President for nearly two years. During the first year of John Quincy Adams' term there were four ex-Presidents living, but the number was reduced to two in 1826, the death of Adams the elder and Jefferson both occurring on the 4th of July of that year. The retirement of John Quincy Adams added another to the number, but the death of Monroe in 1831, and of Madison in 1836, left but one ex-President, until the retirement of Jackson, followed by that of Van Buren and Tyler, again raised the list to four. Jackson died in 1845, John Quincy Adams in 1848, and Polk, who had been added to the list, in 1849. From the retirement of Buchanan, in 1862, for a few months the country had five ex-Presidents, the largest number in its history; but Van Buren and Tyler both died that year, Buchanan in 1868, Pierce in 1869, Fillmore in 1874 and Johnson in 1875, so that from the date last named until Grant's retirement, in 1877, there was no ex-President living. Grant died in 1885, and for a few months preceding Hayes and Arthur were his associates on the retired list of Presidents, but the latter died in 1886, leaving but one man living who had occupied the Presidential chair, until the retirement of Cleveland in 1889. The death of Hayes reduced the number to one, and the retirement of Harrison will only serve to keep that number good for the next four years, in case he lives through Cleveland's second term.

This review shows that the largest number of living ex-Presidents at one time was five, and then for but a few months. Had he lived, Lincoln would now have surpassed the age of Gladstone by but one year, while Johnson would have been 85, Hayes and Grant each 71 and Garfield 63. Of other American statesmen who passed out early, Wendell Phillips and Sumner would now have been 82, Stanton 79, Colfax 70 and General Hancock 69.

There is a prejudice in this country against retaining old men in office. Whether this is founded upon the irreverence for age which is a popularly conceded attribute of "Young America," or owing to the rapid change in conditions which old men generally reprobate, its existence is undeniable. The advice which commends "old men for counsel" is not conceded to apply to the present day and to this country. The conservatism of age cannot keep pace with the enthusiasm of progress, and it is therefore not probable that the United States will ever recognize a Gladstone or a Bismarck in its political life, and it may be added that the conditions of its political life are not likely to demand such leaders.

The Influence of the Mind Upon the Body.

J. E. Wenman, M. D., in the *Eclectic Medical Journal*, says: In Mr. Warburton's work on Egypt he describes his experience with a famous magician in that country. He, being sent for, came to Mr. Warburton's hotel to give him an exhibition of his skill. The magician calls a boy from the street, and makes a mysterious mark upon the palm of his hand, requesting him to look steadfastly upon the mark. This the boy did for ten minutes without any effect. The magician called another boy, and repeated the same thing. This boy, being susceptible to the influence, was soon in a semi-mesmeric condition, the object of the mysterious mark on the palm of the boy's hand being the means of putting the boy in a passive condition. The magician now requested Mr. Warburton to call up whom he wished, and stated the boy would see him. Mr. Warburton called for the late Lord Derby. The boy instantly called out: "Here he is. I see an old man, with spectacles, lying on a couch, having on a long black robe." Mr. Warburton next called for the late Lord Nelson. The boy said: "Here he is. I see a soldier with one arm." After calling for several others, the boy minutely described them, to the astonishment of Mr. Warburton and his friends.

Now the trick consisted in getting the boy to suspend his thinking faculties, so that he would become in a semi-mesmeric condition, and thus be in sympathy with the mind of Mr. Warburton when he called for the different individuals. The boy saw in a kind of vision the very picture that was passing through Mr. Warburton's mind when he called for these individuals. This is a high development of a clairvoyant condition.

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The Suwanee River.

In that part of the long journey when we were passing through Georgia, and at the moment when the tedium was worst, the train approached a long hollow in the hills where one of those pleasant surprises occurred which go to prove how song may consecrate a locality. A river, not very broad or deep, but with a certain special grace and character of its own, lay in front of our track. We had a good view of it as we came near the wooden trestle bridge by which the line was carried across—structures which, until you become acclimatized to American travel, always make you wonder whether they will carry the train this time safely over. The river ran down from the Georgian hills in a living current, broken sometimes into rapids and little cataracts, where the red and black rocks lay across its channels, and then widening out into picturesque reaches, bordered by thickets of dark-green foliage and clumps of cypress and willow. In the clearings, here and there between the woods which bordered it, stood isolated negro cottages, around which you could see little black children at play, and the invariable pig, which is the house guest of the nigger as well as the Irishman. A punt was gliding along on the quiet part of the stream with a negro on board dragging a fishing line, and the black buzzards circled over the maize fields. It was not a striking scene, but beautiful in its way, gilded as it was by the rays of a magnificent sunset. Yet I should have forgotten it in a few minutes, as I had forgotten the hundreds of other rivers which the train had traversed, had it not been that I happened to ask the conductor what was the name of this particular water.

Quite carelessly he answered: "That's the Suwanee river, mister."

The Suwanee river! In a moment the stream had for me a new and extraordinary interest. I had not even known that there was such a river in geographical reality, or that it flowed through Georgia; and yet, here it was—real, authentic, alive—leaping down through the Southern forests, past the maize fields and the cotton flats, to pour itself into the Gulf of Mexico. In an instant everything around appeared to be full of the song that all the world sings, "Way Down Upon de Suwanee Riber." The live oaks seemed to wave it in the evening air; the stream seemed to sing it as it bustled over the rocks; the birds in the thickets had it in the soft, musical notes we caught, and the crickets and katydids, beginning their sunset chirrup, joined in the half-heard chorus. The journey was no longer monotonous. To be "way down upon de Suwanee riber" was to have come to a corner of America dedicated to that deep emotion of our common humanity—the love of home. Is there anybody who has not felt the charm of the simple nigger melody?

When I was playin' wid my brudder,
Happy was I;
O take me to my kind old mudder,
Dar let me lib and die.

All de world am sad and dreary,
Eberywhere I roam;
O darkies, how my heart grows weary,
Far from de old folks at home.

There, indeed, were the old folks at home, a white-haired darkey sitting on a log by the cottage door stripping maize cobs; and, shambling about among the pigs and poultry, old Dinah, with a yellow bandana on her silver locks, crooning some song which might perhaps be the song of the river. So, after all, it was real! and there was a Suwanee river, and the sunny peace and beauty of it were just what fitted well with the sentiment of that touching and tender air which has gone all through the world because it holds in its unaffected music the secret of the pathetic retrospects of life. Just the spot it was to which a tired man, be he nigger or otherwise, might look back to with attachment and affection. We travelers, coming suddenly upon it and leaving it at 30 miles an hour, had, of course, nothing but the most flitting concern with "de Suwanee riber," but one could imagine how dear it might be to a native-born, and how sincerely the original emotion was of the song-writer, or else of some darky from whom he borrowed it, to write and set to such soft and sympathetic music. "Dare's where my heart is turning eber." Henceforward for me that Georgian stream, with the dark groves fringing it, and the red crags, and the quiet reaches of silver water gilded by the setting sun, has a place in the thought among the famous rivers of the globe, and I never hear the melancholy music of the popular nigger lament without a new feeling of what song can do, far beyond history and important events, to consecrate a spot in nature forever, and to localize a universal sentiment.—Sir Edwin Arnold in London Telegraph.

YOUNG FOLKS' COLUMN.

The Magic of an Orange.

It is just an orange on the corner of the table—the odor sweet and fragrant. I am wide awake, and yet that orange makes me a little girl again.

I am standing by the window in a hotel in a strange Southern city. The sun shines with a different glow from any I had ever seen; it is yellow, and softer in spite of its brightness. Up from the street comes a peculiar cry, so strange as to arouse my curiosity and drive back the tears of loneliness that were fast gathering. First far off, but coming nearer and nearer, was the cry, and presently there came in sight a tall, old colored man carrying on his head a box that looked like a croquet-box. There was not the slightest clue as to what was in the box, for no one stopped to buy while he was in sight of the window. Morning after morning he passed the hotel, but no one stopped him to buy. What were the mysterious things that were hidden by the cover of the box?

At last, one glad day, I was walking with my father through the corridor of the hotel. The familiar cry, clear and musical, came up the street. I hurried my father along, and as we came out on the porch, the man and the box were opposite.

"What is it?" I asked.

"What?" asked my father.

"What has the man in the box?"

"Something to sell," said my father.

The man looked over, and my father beckoned. Across the street came the mysterious box, beautifully balanced on the head of the kindly looking old man.

"Mornin', massa! mornin', missy!" and with a dextrous movement the box was placed on the old man's knee, for he had knelt on one knee, apparently to hold the box. The cover was raised, and there was the box filled with delicious orange tarts, each in a little square division in the box. Oh, how delicious they were! Every morning while in that city I had money to buy one of those tarts for my lunch. As I remember them, the taste was no more delicious than the smell. Now I am an old lady, yet there is a certain fragrance in an orange that always makes me see that room in the hotel and the lonely little girl, always hearing the cry far down the street that is half a song, and I see again the tall, old colored man and his mysterious box. Again I see him kneeling in the sunny street, and feel the breathless anxiety that I felt while waiting for the box to open. I was told the story afterward, when I was old enough to understand, of that old man. His name was Uncle Jerry; that was the only name my nurse knew for him. His wife was Aunt Katy. They were the slaves of a family who owned a plantation outside of the city. Uncle Jerry wanted to be free, but how was he to gain his freedom? Aunt Katy was very contented to be a slave, and could not understand why freedom should make so much difference to Uncle Jerry. Still, if he wanted freedom, he ought to have it, Aunt Katy thought. After many talks together, and with the master and mistress, it was decided that Aunt Katy should have her evenings free to make cakes which Uncle Jerry should sell the next morning, finishing his rounds in time to be at the mansion to drive out his mistress at twelve o'clock.

How happily Aunt Katy and Uncle Jerry worked! The pennies accumulated in the red woolen stocking. Aunt Katy got orders from the city, and worked far into the night to fill them. Uncle Jerry was up with the birds to deliver them. At last, after ten years of work, they had money enough to buy Uncle Jerry's freedom at the price he would bring in the market. The proud day came when Uncle Jerry came down from the big mansion to the little cabin with the receipt for himself in his hand. He could not work that day. He was to start out to find work in the city the next morning. And then Aunt Katy cried. She realized that there was a difference between them. She did not fear being sold, but she could not go, as Jerry did, to find work and earn money, and now there would be no long hours of work together at night. Uncle Jerry knew how Aunt Katy felt, and at that moment he determined she should be free.

He told her so. Again they began working together, this time to buy Aunt Katy's freedom. But before two years were passed the Civil War broke out, and Aunt Katy was free. Then Uncle Jerry sold the tarts and cakes that Aunt Katy made to pay rent and buy food. They lived in the little cabin, and I remember it as if seen in a dream—a low, white-washed cabin, with a stout, motherly-looking negro woman smiling into my father's face and answering questions.

Just an orange on the corner of the table brought back those far-off days, when the world all about seemed almost a dream, so little did I know it, and I have told you this story.

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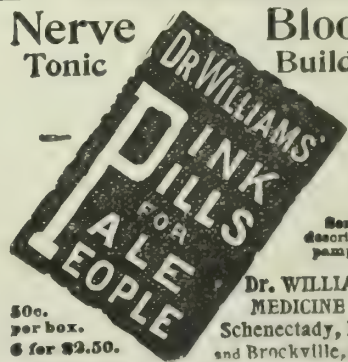
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The Grange Congress.

The Grange Congress in this city on the 13th and 14th inst., in connection with the Midwinter Fair, was a distinct success. It brought out a very respectable though not a large attendance of Patrons and attracted a good share of attention from city people. The exercises were of a most interesting and instructive sort, including music, addresses, recitations, etc., etc. Three sessions—morning, afternoon and evening—were held on each of the two days, and each session was crowded with interesting events.

The addresses were by Worthy Master Roache; M. H. De Young, Director-General of the Fair; Hon. Alpha Messer, Lecturer of the National Grange; Mrs. E. L. Watson of San Jose; E. W. Steele of San Luis Obispo; Gen. N. B. Chipman of Red Bluff; Mr. Walter Greer, Overseer of the California State Grange; Hon. E. W. Davis, Overseer of the National Grange; B. F. Walton of Yuba City; S. S. Goodenough, Lecturer of the California State Grange; Frank S. Chapin of Tulare; Prof. E. E. Smith of Stanford University, and many others. A wide range of subjects was covered. The RURAL proposes to print most of these addresses in full, and lacking space to put them in a single issue, will print one or more each week until the whole list shall be gone through with. This method will, perhaps, be found most satisfactory to our readers, since it will give time for careful reading and digesting. We begin by the publication of Gen. Chipman's address on "Horticulture in Its Relation to California Agriculture," which will be found on another page. Next week we shall print two or more papers of the Grange Congress series.

The visit of Mr. Messer, Lecturer of the National Grange, is an event of the first magnitude for the Order in California. Mr. Messer is one of the big men of the grange—one of those who understand the Order and who believe profoundly in it. In the addresses which he is now delivering at different points, he is pointing out the reasons why the grange came into existence and why it should continue to exist. He makes clear the relationship of the grange both to the moral and material interests of rural life. In this sort of instruction and admonition there is inspiration of the best sort, and the Order cannot fail to profit by the visit of the lecturer. He has already visited the granges in the southern end of the San Joaquin valley; on Monday of this week he addressed Eden Grange and the people of Haywards; and before leaving the State he will take in all the centers of grange interest—San Jose, Watsonville, Pescadero, Merced, Stockton, Sacramento, Petaluma, Santa Rosa, Yuba City and other points too many to name. On his rounds he will be accompanied either by Worthy Master Roache or by other of the higher officers of the Order in this State.

The committee appointed by the last State Grange to consider Mr. Lubin's "Novel Proposition" have reported favorably, recommending that the matter be submitted to the various subordinate granges. This will be done; and the matter of accepting or declining Mr. Lubin's proposition will no doubt be determined at the next State Grange. In case the grange decides to take the proposition up and push it, Mr. Lubin will devote a sum of money to be used as a working fund.

Random Thoughts.

By A. P. ROACHE, W. M. S. G. of California.
Life is but the simple gem,
To light the soul's bright diadem.

The meeting at Selma was but a repetition of the one at Tulare—the same zeal, the same intelligent class of people, the same hospitality, the same eager effort of Worthy Master and Sister Allen, Brother and Sister

Holton, District Deputy Sister I. K. Roadhouse and her worthy husband, and others, to please, to build up, to strengthen and to perpetuate their grange is everywhere manifest.

Worthy Master Bicknell and Brother Ostrander met the invaders at Merced, escorted them to their hall, and after formally introducing them to a large number of patrons they as informally introduced them to one of the neatest, nicest and nattiest feasts it has ever been our good fortune to sample, after which we again faced an audience with bright and intelligent faces, inspiring the National Grange Lecturer to do his best. Would that every farmer in the land could hear his calm, dispassionate, patriotic addresses. Brother Sage also spoke a few cheering words. All the workers in this grange (and there seemed to be quite a number of them) labored harmoniously and well, and a most pleasant and successful meeting crowned their efforts.

The Grange Congress was fairly well attended, and the thanks of this office are sincerely tendered to those who by their cheerful efforts rendered the meeting so pleasant and profitable. The only cause for regret is that the solo of Brother Houx and a splendid paper by Brother Frank Chapin were omitted. We will do Brother Houx justice at the State Grange and Brother Chapin the same through the printed page. Of those outside the order who gave us a cheering word might be mentioned Prof. Emory E. Smith, who has materially assisted in many ways in the success of the Congress. He is a born granger. Another gentleman whose name I cannot now recall, also read an excellent paper, while the first lecturer of the National Grange gave us a few thoughts and his blessing.

The Congress is over, the Congress is past,
On the wings of the wind are its truths broadly cast.
From the Orient East to the Occident West
Came our sisters and brothers, the bravest and best,
And there with strong arm, honest heart and brown hand
They labored and strove for the good of the land;
And they gave to the world, with a freeman's command.

This motto which all, let us hope, understand—

Mind brightened by effort,
Love sweetened by truth,
Home guided by virtue,
Heart nurtured by truth,

Shall save from decay our bright future and past,
And guard our old flag to the end and the last.

Brother Ostrom presented a resolution (which was enthusiastically carried) asking Congress to at once begin the construction of the Nicaragua canal, and that its construction, ownership, equipment and control should be wholly in the control of the United States.

The committee having in charge the proposition of Hon. David Lubin, relating to his novel transportation plan, unanimously reported in favor of the same, whereupon the Executive Committee of the California State Grange endorsed the report of the sub-committee, and the matter will now go before every subordinate grange in the State for discussion and consideration. Mr. Lubin is deserving of great credit for the intelligent and manly fight he is making in this matter, and he is sparing neither time, strength nor money in the furtherance of an object which we believe will be of great benefit to the nation and of exceedingly small, if any, benefit to himself. Patrons of California, you are earnestly requested to give this matter your best thoughts and attention, as it is of vital and far-reaching importance.

Lecturer's Notes.

Cause and Cure of the Tramp Nuisance.

By S. GOODENOUGH, Lecturer C. S. G.

The notes of last week dealt somewhat with the cause of the tramp nuisance—not exhaustively, of course—and possibly more potent causes might be named than any that were indicated. For instance, ignorance on the one hand, and imperfect, non-practical education on the other, should come in for extended consideration. We are very much what we are educated to be, and when we are educated to be nothing that is just what we are. Many a young man has been turned out from an extended school and college course, with many literary graces, but with no knowledge how to get a practical grip of things. Fortunately some of the most glaring faults of the system of education have been discovered and are being remedied. Polytechnic schools are now crowding hard upon the old-time classical and literary courses, and polytechnic training is knocking for admission into the older institutions. It is to be hoped that the ratio of learned incompetents will be less in the future than it has been in the past.

One of the first suggestions looking toward the cure of the tramp nuisance is:

A CIRCUS

ON THE BILL-BOARDS

and a circus on circus day are two kinds of a thing. The greatest circus is usually on the Bill-boards, and the circus on Circus Day is consequently a disappointment. There is, of course, the occasional exception which proves the rule. McCormick Binders and Mowers are an exception. Their promise on the "Bill-boards" is always fulfilled on "Circus Day." For years the makers of McCormick Grain and Grass Harvesters have been telling the World that they could and would at any time demonstrate the superiority of their machines in the actual competitive field test. The "Bill-boards" of other manufacturers have glaringly proclaimed that their machines are the best. But "Circus Day" came at length. The World's Fair urged all these manufacturers to take their machines into the field that the results might be compared. The McCormick was there; its show went on. It's promises to the World were carried out. But how about the other "great and only"? They stayed at home consoling themselves with the reflection that "the people like to be humbugged," and their artists got up new pictures for the "Bill-boards." Before deciding about going into these field trials, the competitors of the McCormick went and examined the crops to be cut, and realizing the severity of the conditions, they said to themselves: "We don't propose to come here and compete with the McCormick;"—"a live coward is better than a dead hero;"—"a sucker is born every minute, and we'll catch some of 'em anyway." That policy may answer for the "Bill-board" sort of circus; it will not do for the McCormick. Promises must not be broken. If McCormick machines are not better than all others, they must not be so advertised. If they are so advertised, every Binder, every Reaper and every Mower must be ready at a moment's notice to go out into the field and show up. That's business. Write to the McCormick Harvesting Machine Co., Chicago;—or, better yet, call at once on your nearest McCormick agent.

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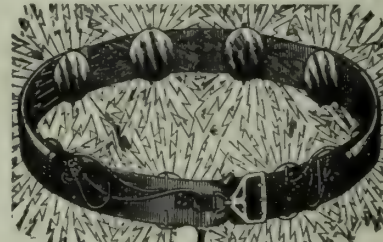
109 CALIFORNIA STREET.....SAN FRANCISCO.

Stop adding to its volume. It has been a rapidly-growing evil in the last two decades. At the period of my earlier recollection it was represented by local beggars who traveled their neighborhood beats, but who had an apology for a home. The semi-organized system of to-day is of recent growth. As already remarked, large concessions must be anticipated from the multitudes of the unemployed. This ought not to be, and if we were better Christians and wiser social and political economists it would not have become so. There ought to be no unemployed—no lack of demand for labor. A sacred author has it: "If any will not work, neither shall he eat." That presupposes that there is work at hand. But if there is none, even a strong man is not to be blamed for idleness. Enforced idleness does not bar his claim for food. The world "owes" such a man a living. The municipality, State or nation has no right to force such a man into vagabondage; and neglect to care for him will make a vagrant of him. In San Francisco, Oakland and other cities some judicious effort has been made to furnish employment to resident, needy citizens out of work. This was a recognition of the fact that these cities are logically chargeable with the welfare of their own unemployed. That welfare lies along the lines of self-respecting industry. The sums devoted to the unemployed of these men in city improvements go just as far toward their relief as would an equal amount bestowed in direct charity; the men have rendered an equivalent for what they have received, and retained their self respect. There is also something to show for the expenditure. There is better satisfaction all around.

It ought to be the study to bestow just as little unearned alms as possible. Direct giving is almost certain to encourage mendicancy and vagrancy. It should be resorted to only in cases of total disability. If the destitute individual, or members of the destitute family, are able to work, suitable employment should somehow be furnished. Not a dollar should be given, unearned, to those capable of earning it, if any form of legitimate work can be found or devised. Otherwise the evil will be aggravated instead of relieved.

(Continued on page 318.)

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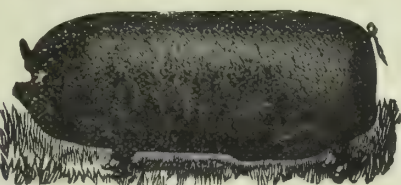
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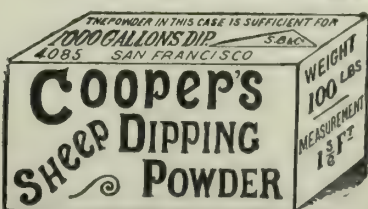


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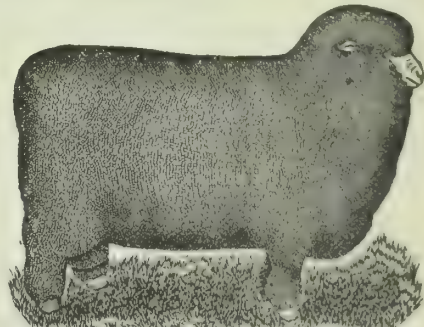
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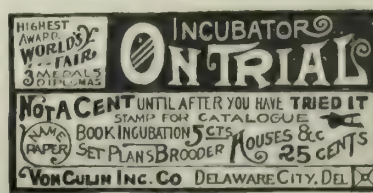
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AGRICULTURAL NOTES.

CALIFORNIA. Alameda.

Livermore Herald: From inquiry among the owners of fruit orchards in this valley it is learned that there is a prospect of more than ordinarily good crops. No damage has been sustained to any of the orchards by frosts, and the outlook for the almond yield is especially encouraging.

Butte.

Oroville Register: Each succeeding year demonstrates the great value of alfalfa to the stockmen of this State. One year the spring rains fall just at the right time and feed is luxuriant and hay abundant, but the very next year the north wind dries up the surface of the ground, the rainfall is light, and, in consequence, pasture is scant and the hay crop light. Formerly there used to be great loss of sheep and cattle during a very dry year, but now the stockmen resort to the green and luxuriant alfalfa fields and their animals are kept alive although they pay a round price for pasture. Along the coast and in the Sacramento valley enough rain has always fallen to insure feed and fair crops, but in the San Joaquin valley and in parts of southern California there was during some years a tremendous loss of stock. Alfalfa growing is becoming of more importance each season and this year will cause a demand for every pound of hay and every acre of alfalfa pasture in the State. We predict that this season will cause many stock-owners to abandon their extensive natural ranges and to confine their attention to fewer acres. They will select land that can be irrigated, land that is suitable for alfalfa and will in the future depend more upon this grass which is richer and more nutritious than the wild grasses and which can be made to produce enormous crops if properly irrigated.

Kern.

Bakersfield Californian: There never was a better prospect for a splendid crop of grain in the Tehachapi country than this season. The summer-fallowed grain is up from six to eight inches in height and the winter-sown grain is already two or three inches above the ground. One little small rain within a few weeks will fix the success of this year's grain crop beyond peradventure.

Marin.

The San Rafael *Tocsin* takes a very blue view of things. It says: The long-continued dry weather, followed by the recent hot spell, has about destroyed the prospect of good feed in all except a few favored localities. There are still some spots where timely rains would yet accomplish wonders, but even in these instances it must come very soon to do much good. The sections that are still hopeful are portions of the Tomales country, Point Reyes and some of the Nicasio valley. About all the rest is gone beyond redemption. Along the Sonoma line most of the ranches are burned as brown as they usually are in August. This would be bad enough if the grass had reached a fair growth before the desiccating process began, but unfortunately the cold weather of January, February and March retarded its growth so that the grass was but little more than out of the ground when it was scorched and withered. Where the feed for the long, dry season is to come from, is the problem that stock-owners must now face and it is not a pleasant one. The situation is bad enough for those who own their own land; for the renters the case is absolutely desperate. They have had a succession of bad years and the prospects of the present season indicate little short of absolute disaster. Unless landlords make concessions, a number of them will go to the wall before 1895 is reached. The hay crop is looking about as bad as the grass. It is heading everywhere, yet very little is much over six inches in height. It will scarcely pay to cut much of it.

Monterey.

Pajaronian: The eucalyptus grove out of Salinas on the Monterey road is to be cut down. It is one of the landmarks of that part of the Salinas valley. The eucalyptus is being speedily put out of the way in that part of the State. It makes a wonderful growth but is a land exhauster and a road destroyer. Nature is better posted than man on the tree growth adapted to any section of the country.

Napa.

Napa Register: Mr. Borreo has just finished crushing the berries from 100 olive trees, and expects to have as a result 125 gallons of pure oil for the market. He has 2000 trees, representing four varieties of olive—Picholine, Mission, Manzanillo and Nevadillo. One hundred of the trees are this year bearing. Next year 500 are expected to yield fruit; and so the olive industry in the vicinity of Napa grows.

Orange.

Santa Ana letter, April 9th: One principal topic of conversation on the streets in Santa Ana to-day, among the orange-growers especially, was the decision of Judge Ross of Los Angeles in knocking out what is known among the fruit men as the "Twilight fumigating process," a process of fumigating plants and trees with hydrocyanic gas in the absence of light. Messrs. Wall Jones and Bishop of Tustin, this county, are the patentees of the process, therefore the fruit men of this valley take more of an interest in the opinion just rendered than they perhaps otherwise would. The fruit men have been fighting the patent for the past several years, creating a fund from the various local fruit associations throughout the county for that purpose. With the right to use this process of fumigation free to the public, the scale and other fruit pests that have heretofore been threatening the destruction of orchards in some localities in this and other counties in southern California will, no doubt, be more successfully eradicated. The orange-growers generally are jubilant over the decision.

San Bernardino.

The highest price received for oranges this season in southern California was by the Ontario Exchange last week for three carloads of Mediterranean Sweets—\$2.50 per box. The exchange price of Navels is now \$2.25 per box.

The first planting of beets are ready for thinning,

says the Chino *Champion*, and some have already been thinned. Every team in the country is busy, and planting is going on as fast as it can be done. We need rain, and need it badly, although the beets so far planted are doing very well.

San Diego.

Neuero Sentinel: Mr. Barnett has just received from Florida 150 young stalks of the sisal hemp plant, much resembling the Spanish dagger which grows so profusely on the eastern slope of the mountains and to a more or less extent on the western slope. From this plant all the best white cordage and twine is manufactured, making the best rope in use in commerce. Millions of dollars are annually expended in importing the fiber, and from what he can learn of the habits of the plant Mr. Barnett is satisfied that it can be successfully grown here. It requires a dry climate and would be at home among the rocky slopes of the hills which could be used for no other purpose. It requires no cultivation after the first two or three years. If his experiment proves a success, and he has every reason to believe it will, it will be worth millions to the county and to the State. Mr. Barnett has been nearly a year in securing these plants, and his persistency has finally resulted in success.

San Luis Obispo.

Arroyo Grande Herald: We have had a terrible wind storm which threatened to blow the numerous bean lands beyond all hopes of summer crops, but at present the weather is all that could be desired. A rain would please the farmers, but at present they are living in hopes of rain.

San Luis Tribune: Prominent bean-raisers inform us that their industry will not be very extensive in the Arroyo Grande valley this season, owing to the dry weather. Many of them will plant their land in pumpkins.

San Luis Tribune: While other portions of the State are complaining of a very dry year this section of country around Morro bay has as yet little reason to complain, because the moist wind that is nightly wafted across Morro bay from the Pacific ocean wets the ground and keeps everything growing.

Santa Barbara.

Santa Maria Times: If all reports are true, Santa Maria valley is this year, more than ever, an oasis in the non-irrigated portion of southern California. While the country is dried and parched, both north and south of us, and cattle dying from actual starvation, we have fat cattle, lots of hay, some grain, and an abundance of feed can be produced on lands prepared for summer crops. This is an off year at best, but Santa Maria is ahead and will continue to be. The whole world knows that southern California is experiencing an unusual drouth, but we are hurt least of all, and still our land is cheaper than anywhere else.

Guadalupe letter: The grass still grows and the creamery still runs on about its usual amount of milk, 30,000 pounds per day, and with April showers we still hope to reach 40,000 pounds before the season closes. People are worse scared than hurt so far, and with anything like favorable weather from now on, the season will prove an average one.

Nipomo letter in Santa Maria Times: Permit me to suggest a few thoughts I have gathered recently from observation and experience. Anticipating for some time past that we might have a dry season, I have been careful to observe, on the mesa land, the effect of different modes of cultivation upon the retention of moisture. I have observed that land plowed after the weeds and grass had taken a fair start, and the weeds have since been kept down by cultivation, retains the moisture to a greater extent than land twice plowed. This is accounted for from the fact that the surface of the ground has dried down to a greater or less extent, and the turning of this dry surface to the bottom, and no rain or moisture coming from above, the rising of the moisture from below is not sufficient to wet the dry earth turned down, and it, together with the moist ground turned up, dries out to the depth of the last plowing; whereas, if the ground is plowed but once and then cultivated to keep down weeds, it becomes packed and settled and retains the moisture.

Santa Maria Times: Mr. Barbatini, a dairyman who lives in San Luis Obispo county, had a saddle horse stolen one night last week. That would hardly come under the head of grand larceny, since a good horse sold in San Luis during the week for \$15, according to report.

Santa Clara.

In the vicinity of Coyote the outlook is favorable for a good fruit crop, if the weather turns out any way favorable at all. Early peach and apricot buds were nipped by the late frosts, but there were enough of the second buds to insure a fair yield.

Santa Cruz.

Pajaronian: Strawberries are expected to put in an appearance in the local market during the coming week. But few shipments of berries have been received in the San Francisco market to date. They have been unusually late this season.

Pajaronian: A portion of the best crop near Salinas is so far advanced as to require thinning work. At Blanco this work has been going on for more than a week past. The young beets on the Salinas are looking very well and present prospects are very favorable for another big crop in that district.

Sonoma.

Farmer: The acreage of hop yards in the vicinity of this city is less now than it was last year. Two or three quite large-sized yards were grubbed up because the owners found too little profit in the industry the past two or three years for what the amount of work required should reap.

Petaluma Courier: A schooner-load of hay arrived for the Golden Eagle Milling Company from San Francisco yesterday—the second cargo of the kind ever known to have been brought into Petaluma from the outside market. We generally ship from 50 to 75 schooner-loads of hay annually, but "things are different" this season on account of the unprecedentedly light crop of hay last year in the country to the north of us. The stock coming in is to supply the demand in that section.

Two or three large-sized hop yards near Healdsburg have been grubbed up because their owners

thought the land could be put to better use than raising hops at prevailing prices.

Stanislaus.

Modesto Herald: The *Herald* recently published an article regarding the efficacy of flooding in reclaiming alkali lands, as demonstrated on a small scale by a Kern county farmer. It is not generally known, however, that this method of reclaiming such lands has been and is being successfully pursued in this State on an extensive scale, yet we are assured by H. F. Geer of Turlock that such is the case. Mr. Geer informs us that business recently called him to a portion of the Miller & Lux tract in Merced and Fresno counties, many thousand acres of which is "sagebrush alkali," the soil fine as flour and so heavily charged with alkaline deposits as to be worthless even for pasture. Surplus water from the Miller & Lux irrigation resources were some time ago turned on this land as an inexpensive method of disposing of it (the water) and for many weeks a large tract was more or less flooded. With the return of the irrigation season and the use of all the water at the command of the firm in other directions, the flooded land gradually drained, and subsequently the management was surprised to find that vegetation was springing up on what had always theretofore been a barren waste. The cause of the change was divined, and since that time all surplus water has been systematically employed in reclaiming the land. At the time of Mr. Geer's visit thousands of acres were two feet under water, the graded right of way for what was to have been an opposition road to the S. P. R. R. Co.'s West Side railroad being utilized to back up the water over the land. After standing on the land for a few weeks the water is drawn off, carrying with it large quantities of the alkali permeating the soil. Much of the alkali in the soil, too, is forced by the water down to the underlying hardpan and carried off through underground courses. Mr. Geer was informed that the work of reclaiming by this means was meeting with signal success, transforming the land treated from desert wastes to good pasturage.

Tulare.

Porterville Enterprise: There are now being put out in the Lindsay district 500 acres of oranges, in tracts averaging from 10 to 80 acres. The following are the people to whom the different tracts belong: Messrs. Armstrong, Besant, Seybolt, Black, Hardeman, Palmer and Prior of San Jose; Mrs. Irwin and J. B. Eager, of Canada; Messrs. Dobbins and Ogilvie of Los Angeles, and a Mr. Isenberg of Honolulu. When this acreage has been put out, there will be planted altogether in the Lindsay district 850 acres to citrus fruits.

The Visalia *Times* declares that reports of the damage to peaches, apricots and nectarines in the vicinity of Hanford are not exaggerated. On the morning of April 20th the water sloughs in the Lucerne country were covered with ice, the thermometer standing several degrees below freezing point at sunrise. The prune crop, however, was not injured and will be as large as usual.

Grangeville letter: We heard some of our large fruit-growers say that the peaches will make a very fair crop after all, and the apricots will make about one-fourth of a crop. Some say that the Muir peaches have not been touched at all, but time will tell.

Ventura.

Ventura letter April 9th: The success J. H. Sheppard is making of strawberry culture should prove an incentive to those having but a few acres of land to bring it to the highest possible state of cultivation. He began with less than an acre a few years ago, and finding they yielded such enormous crops, has gradually increased his plantation until himself and sons will have for market this season at least 40,000 boxes. It does not require a great amount of water to irrigate such a field; many have wells that would furnish a supply which could be cheaply raised by windmill or gasoline engine. His crop will be marketed in Ventura and Santa Barbara.

Yolo.

WOODLAND, April 14.—The fruit-growers of this vicinity have decided to organize a local exchange which will affiliate with the State Fruit Exchange and handle the fresh and dried fruit and raisin product in this vicinity. A meeting held to-day was addressed by Edward F. Adams, manager of the State Fruit Exchange. It was decided to support the State Exchange by liberal subscriptions in stock.

Davisville letter in Woodland Democrat, April 9: Another north wind began Saturday night, and of course the farmers are anxious about it. This reminds me that in 1871 there were 24 days of north wind during the close of April and the early part of May. We had a couple of inches of rain in the meantime, but short crops nevertheless. It is possible that 1894 will be a repetition of that season. Farmers to the east of Davisville say that the wheat and barley crops look well and have not yet begun to show the effects of dry weather. To the west of Davisville the lack of moisture and so much north wind has had a very perceptible effect, and the necessity of an early and generous rain is generally conceded. The same difference in the condition of the vineyards and orchards to the east and west is also noticeable. To the east the soil still works fairly well, while to the west it breaks up hard and works very unsatisfactorily. Mr. La Rue told me this was especially true of his vineyard a few miles west of town. I saw Frank Chiles a few moments Saturday evening and he told me that he had felt a kind of intuition early in the season that the year would not be altogether favorable for a wheat crop and that he had not a single spear growing on his farm. He has 900 acres sown to barley and it looks fine.

Democrat: The fruit crop was never more abundant or more promising. Some slight damage is reported to the apricots from the late frosts, but this is so trifling as to hardly excite comment. Almond orchards are literally loaded and generally regarded as safe. Present indications are that all crops will be unusually abundant, and a fair price only is required at harvest to restore prosperity and confidence.

Yuba.

Wheatland Four Corners: The many hop fields in this vicinity are each employing large numbers of men just now preparing for the summer's crop and harvest. The idea has gone abroad that employ-

ment may be had any day in the hop fields here, which is a mistake. More hands are at work now than are required, and scores of men are still asking for work. This is a strong contrast to the situation a few years ago when labor was at a high premium in this locality, but ever since last year set in the tables have been turned and thousands have come and gone without securing employment.

Marysville Democrat, 12th inst: H. Falk, the enterprising fruit and produce dealer, made his first shipment—one case of fine ripe strawberries—to Portland to-day. This is ten days earlier than any previous year. These berries were grown on the Falk ranch, about five miles northeasterly from Marysville, upon plants brought from Oregon last fall. The berries are of fine color and flavor and of good size, and will be found to be very desirable for shipping purposes. They ripen here fully three months earlier than in their native State.

RUDY'S PILE SUPPOSITORY is guaranteed to cure Piles and Constipation, or money refunded. 80 cents per box. Send stamp for circular and Free Sample to MARTIN RUDY, Lancaster, Pa. For sale by all first-class druggists.

DO YOU WANT TO MAKE MONEY?



THE ELI—10 to 15 tons in Box Car.

IF YOU DO—BUY A PRESS FOR BALING HAY, HOPS, HIDES, WOOL, ORCHILLA, RAGS, or ANYTHING you want BALED.

A young man can make more MONEY with less expenditure of money and labor, than in any other way. We sell the

ELI CHALLENGE; Puts 10 tons in a box car. Best press made.

Hill's improved LIGHTNING bales 44 tons per day. JUNIOR MONARCH, 20 to 30 tons per day.

PETALUMA PRESS, the old reliable standby, greatly improved.

NEW YORK HOP PRESS, low priced, yet good for small yards.

THOMPSON'S CALIFORNIA HOP PRESS, horse power press, for large yards.

Write for prices and catalogues; state what you want, and whether CASH or TIME is wanted.

I. J. TRUMAN & CO., No. 18 Drumm street, San Francisco.

World's Fair Highest Awards
Medal and Diploma on our INCUBATOR and BROODER Combined. "Old Reliable" Leads them all. If you are interested in Poultry, we will pay you to send 4 cents in change for our 13 page catalogue, giving valuable details on Poultry Culture. Address: Reliable Incubator and Brooder Co., Quincy, Ill.

Orange Grove & Peach Orchard

In one of the best EARLY Fruit Sections of the State, together with a nursery of Orange, Lemon and Deciduous Trees, for sale at less than its real value.

Particulars of the estate by addressing H. F. DEXTER, Care "Pacific Rural Press."

160 ACRES OF LAND

SUITABLE FOR OLIVES, ORANGES, PEACHES, etc.

Only One and One-Half Miles from PENRYN, in famous PLACER County, at the price of \$10 per acre. One-half on time if desired.

Address the owner, FRED C. MILES, Penryn, Placer Co., Cal.

I WANT

\$6,000 for Three Years, on First-Class Security, San Mateo county, within one hour's ride of city.

APPLY TO

JOHN F. BYXBEE,

22 Market Street, - San Francisco.

Seeds, Plants, Etc.

E. J. BOWEN, SEED MERCHANT.

ALFALFA:

Grass, Clover, Vegetable and Flower Seeds,
Onion Sets.

LARGEST STOCK AND
MOST COMPLETE ASSORTMENT.

Illustrated, Descriptive and Priced Seed Catalogue for
1894 mailed free to all applicants. Address

E. J. BOWEN,

515 & 517 Sansome St., San Francisco, Cal.
65 Front Street, Portland, Or.

or 214 Commercial St., Seattle, Wash.

ORANGE CULTURE IN CALIFORNIA.

Now that the interest in the culture of the orange is
extending so as to embrace nearly all parts of the State,
a book giving the results of experience in parts of the
State where the growth of the fruit has been longest pur-
sued will be found of wide usefulness.

"Orange Culture in California" was written by Thos.
A. Carey of Los Angeles, after many years of practical
experience and observation in the growth of the fruit.
It is a well-printed hand-book of 227 pages, and treats of
nursery practice, planting of orange orchards, cultivation
and irrigation, pruning, estimates of cost of planta-
tions, best varieties, etc.

The book is sent post-paid at the reduced price of 75
cents per copy, in cloth binding. Address DEWEY
PUBLISHING CO., Publishers, 220 Market St., San
Francisco.

TREES and PLANTS.

A fine assortment, best varieties, free from pests of
any kind. Prunus Simoni, Bing, Rostraver and
Murdoch Cherries, Black California Figs;
Rice Soft Shell and other Almonds, American
Sweet Chestnuts, Præputiens Walnuts.
Hardy mountain grown Orange Trees. Our Oranges
have stood 22 degrees this winter without injury.
Dollar Strawberry, the best berry for home use or
market. Address C. M. SILVA & SON, Lincoln,
Placer County, California.

FOR SALE.

CAULIFLOWER SEED, of large kind called the
PISA; originally from Italy. Some raised by an Italian
in Los Angeles county. Samples for trial furnished
free. Apply to S. W. LEVY & CO., 215 & 220 Washing-
ton St., San Francisco.

OLIVE TREES.

ALL KINDS OF Nursery Stock.

Send and get book on Olive Culture.

HOWLAND BROS.,

Pomona, Cal.

GRAPE VINES and PLANTS.

Tokay, Emperor, Cornichon, Black
Ferrara, Black Morocco, Muscatel,
Gordo Blanco, Purple Damascus,
\$5 and \$6 per 1000.

BLACKBERRY—Crandall's Early and Law-
ton, \$5 per 1000.

RASPBERRY—Harsel and Barton, \$6 per
1000.

L. D. BUTT,

Penryn, Placer Co., California.

20,000

MONTEREY CYPRESS FOR SALE.

Everything for the Garden.
Catalogue Free.

HUTCHISON & SANBORN,

517 Fourteenth Street, OAKLAND, CAL.

LEMON TREES FOR SALE.

I have some 15,000 Lisbon and Eureka Lemon trees,
budded from my own bearing orchard, for sale cheap.
NATHAN W. BLANCHARD, Santa Paula, Cal.

WE SEND FREE, BY MAIL, AFTER RECEIPT OF ONE DOLLAR,
ONE OF THE FOLLOWING COLLECTIONS OF PLANTS:

- 12 Roses,
- 15 Carnations,
- 15 Chrysanthemums,
- 15 Fuchsias,
- 15 Geraniums,
- 15 Heliotropes,



- 20 Assorted Summer Flow-
ering Plants,
- 12 Dahlias,
- 12 Coleus,
- 12 Climbing Plants,
- 10 Oleanders,
- 24 Pansies,

DISTINCT VARIETIES. ALL PLANTS LABELED. TRUE TO NAME.

Grallert & Co., Florists,
COLMA, San Mateo Co., Cal.

Send for full list of collections.

Be Sure and Give Us a Trial.

We Grow Only the Best Varieties.

ALOHA ORANGE NURSERIES.

PENRYN, PLACER COUNTY, CALIFORNIA.

NOW is the time to plant Orange Trees. March to April 15th is the best time in Northern California.

2-year buds of Washington Navel and Mediterranean Sweets at 25c each.

Trees at prices to suit all purses. The Best Trees grown. We grow ALL our Trees and they are HARDIER than
any others.

We have a few Foster, Early and Late Crawford, Susquehanna and Wager Peach trees and Simon, Clyman,
Tragedy, Kelsey and Satsuma Plums and will place them at \$5 per 100 to close out. Not less than 10 of a
kind, at this rate, will be sold.

PLANT MORE PALMS, they give a tropical appearance to any lawn or garden.

ORDER THE COLLECTIONS BELOW, they will be found to be just what you have wanted.

01 Citrus Tree Collection.—1 Wash. Navel, 1 Med. Sweet, 1 Lisbon Lemon, 1 Tahiti and 1 Trifoliata Orange.

01 Palm Collection.—2 Cal. Fan Palms, 1 Chamerops excelsa, 1 Dracena.

01 Chrysanthemum Collection.—25 different varieties.

FRED. C. MILES, Manager.

NAPA VALLEY NURSERIES.

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Fruit, Nut and Shade Trees, Grape Vines, Etc., Citrus Fruits, Ornamental Shrubs,
Flowering Plants, Roses, Palms, Bulbs, Seeds, Etc.

Fruit and Nut Trees propagated from bearing orchards at Sausal Fruit Farm; Unirrigated, Clean and Healthy.
Do not fail to correspond before making purchases. Satisfaction guaranteed.

LEONARD COATES, - - - NAPA, CAL.

FOR THE SEASON OF 1893-94.

BUDDED ORANGE TREES, of leading varieties, one and two year buds, also a small lot of
choice budded and seedling LEMON TREES. Sweet Seedling Oranges, 1 to 4 years old. Shade and
Ornamental Plants. Prices to suit the times.

ORCHARD AND NURSERY THERMALITO, BUTTE COUNTY, CAL.

For Price and Terms, Address

OROVILLE CITRUS ASSOCIATION, - - - OROVILLE, BUTTE CO., CAL.

Correspondence Solicited.

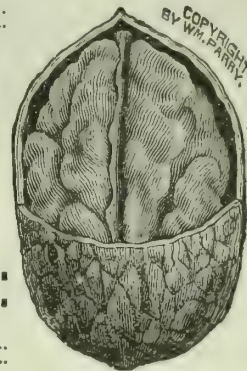
WE GIVE ESPECIAL ATTENTION TO

Fruit Trees! Deciduous Fruit Trees!

ALEXANDER & HAMMON'S

Rio Bonito Nurseries, Biggs, Butte Co., Cal.

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PERSIAN

:- SOFT SHELL :-

:- WALNUT! :-

Our Stock of TREES and VINES is Most Complete
in EVERY CLASS of Fruits.

A LARGE STOCK OF THOMPSON'S SEEDLESS GRAPES.

SHIPPING, CANNING and DRYING Fruits of all Kinds.

Best Assortment of RAISIN and TABLE GRAPES in California.

Early Shipping Plums a Specialty.

SPECIAL PRICES FOR TREES IN LARGE QUANTITIES.

DURING the last three years, trees grown on the FEATHER RIVER BOTTOM LANDS, at RIO BONITO, BUTTE
COUNTY, have been much sought after, and the demand for them is increasing all over the State where they
have been planted. Owing to the peculiar adaptability of the soil and climate of this section for growing nursery
stock, the trees making a very large and well-furnished system of root growth, and maintaining a correspondingly
strong and vigorous top, maturing the wood thoroughly, we are enabled to supply our patrons with the best of
trees, healthy in every respect, entirely free from insect pests, and in perfect condition for transplanting.

If You Are Going To Plant Trees, It Will Pay You To Corre-
spond With Us Before Purchasing.

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BIGGS, BUTTE COUNTY, CALIFORNIA.

Sunset

Collection of SWEET PEAS

DIRECT FROM THE A large packet each of
25 New and Distinct Varieties mailed for 75c.

CALIFORNIA GROWERS

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SAN FRANCISCO



JAPAN PLUM TREES.

Apple, Almond, Apricot, Cherry, Prune,
Peach, Fig, Olive, Orange and Lemon

TREES.

Small Fruits, Grape Vines,
Roses, Etc.

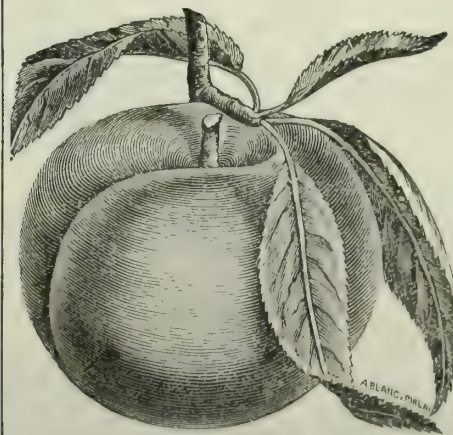
PRICES ON APPLICATION.

VEGETABLE, FLOWER and TREE
SEEDS. SEEDS.

Catalogue on Application.

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ESTABLISHED 1863.

THOMAS MEHERIN,

AGENT FOR CALIFORNIA NURSERY CO.,

LARGE STOCK OF

FRUIT & ORNAMENTAL TREES
AT REDUCED RATES.

SEEDS.—Kentucky Blue Grass, Clover, Vegetable, Flower and Tree Seeds.—SEEDS.
PRICE CATALOGUE MAILED ON APPLICATION.

THOMAS MEHERIN, - - - 516 Battery Street, San Francisco,
P. O. Box 2059.

News in Brief.

—The wages of the Benicia tanners have been cut 10 to 20 per cent.

—The daily capacity of the eighteen shingle mills in British Columbia is 1,380,000 shingles, and a kiln capacity of 985,000.

—A factory is to be started at Grant, Or., to make a new kind of plow invented by a man living across the river in Klickitat county.

—The railroad company has in course of construction at Sacramento a portable plant for treating ties with a preservative compound.

—The Banning Herald professes to have information that a natural gas well with a strong flow has been struck by persons boring a well in Los Angeles.

—The Arizona Land Court has decided that land grants made by the Mexican States are void. This affects the titles of grants aggregating nearly 75,000 acres.

—The United States Court of Private Land Claims, which has been in session at Tucson, A. T., for some days, has adjourned after handing down a decision in the Sonita, San Rafael del Valle, Babacomari and Nogales de Elias grant cases, favoring the settlers.

—The snowfall in the Cascade mountains this winter has been enormous along the Great Northern road. Up to a week ago it had been 63 feet 7 inches on the summit, and after settling it lay 26 feet 3 deep on the level, being above the tops of the telegraph poles.

—The Census Bureau furnishes the following statistics for the Pacific coast concerning the total value of real and personal property. The totals are as follows: California, \$2,533,733,627; Oregon, \$590,396,194; Washington, \$760,698,726; Nevada, \$180,323,668; Utah, \$349,411,234; Arizona, \$188,880,976; New Mexico, \$231,459,857. The same figures for California in 1880 were \$1,343,000,000.

—It is learned at San Diego that the National City & Olay Railroad Company has obtained a right of way for the extension of its line from Tia Juana across the Mexican line and up the Tia Juana valley to Hot Springs, a distance of about six miles. The purpose of the extension is to establish the headquarters of the Mexican Land and Colonization Company at Hot Springs instead of at Ensenada, in order to be more accessible to San Diego.

—Further complications have arisen between the Bear Valley Company and the people of the Moreno and Alessandro Company. The Board of Directors of the Alessandro Irrigation district has recinded the action taken a fortnight ago by which they proposed to pay interest on the irrigation bonds which the Bear Valley people held, provided the latter would pay into the treasury of the irrigation district some \$25,000 due as taxes. Foster, who represents the English stockholders, yesterday made a formal demand on the treasurer of the district for \$16,000 due on coupons of the district's bonds. The demand was refused. The people of the district say that they should not be compelled to pay interest on their \$750,000 of bonds until Bear Valley places water on their lands according to contract, the bonds having been assigned to that company on condition that it provide the water.

—The following figures give a condensed statement of the operation of the proprietary and leased lines of the Southern Pacific Company for the years 1892 and 1893, ending December 31st of both years:

	1893.	1892.
Gross transportation earnings.....	\$48,049,648 32	\$46,972,195 20
Freightage, rentals and other receipts....	658,609 68	993,705 05
Total receipts.....	\$48,708,258 00	\$49,665,900 25
Operating expenses.....	\$30,576,241 06	\$31,288,199 27
Betterments.....	1,201,883 95	2,301,787 26
Fixed charges and taxes.....	16,133,723 47	15,767 351 89
Total expenses.....	\$47,913,801 48	\$49,357,288 42
Balance.....	\$ 794,356 52	\$ 308,611 84
Income from investments of S. P. Co.....	311,489 53	211,932 66
Balance—Expense in reconstruction of road and additions..	1,105,796 65	520,544 49

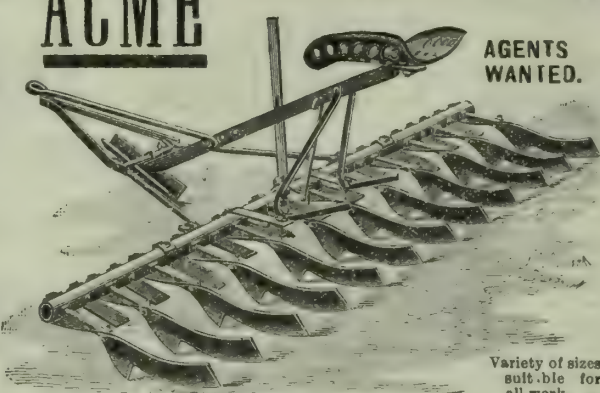
How's This!

We offer One Hundred Dollars Reward for any case of Catarrh that cannot be cured by Hall's Catarrh Cure.

F. J. CHENEY & CO., Props., Toledo, O. We the undersigned have known F. J. Cheney for the last 15 years, and believe him perfectly honorable in all business transactions and financially able to carry out any obligation made by their firm. WEST & TRUXAX, Wholesale Druggists, Toledo, O. WALDING, KINNAN & MARVIN, Wholesale Druggists, Toledo, O.

Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Price, 75c, per bottle. Sold by all Druggists. Testimonials free.

"ACME" PULVERIZING HARROW, CLOD CRUSHER AND LEVELER



AGENTS WANTED.

Variety of sizes suitable for all work.

Is adapted to all soils and all work for which a Harrow is needed.

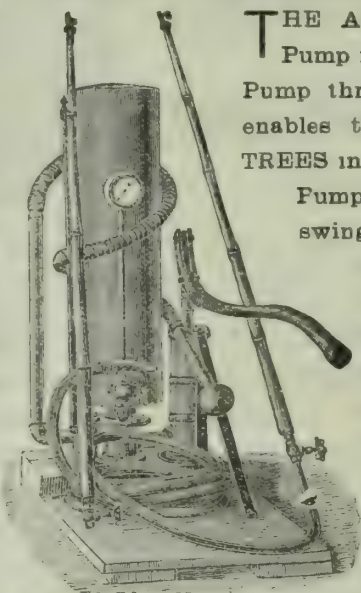
Flat crushing spurs pulverize lumps, level and smooth the ground, while at the same time curved coulters cultivate, cut, lift and turn the entire surface of the soil. The backward slant of the coulters prevents tearing up rubbish and reduces the draft.

Made entirely of cast steel and wrought iron and therefore practically indestructible.

CHEAPEST RIDING HARROW ON EARTH—sells for about the same as an ordinary drag.

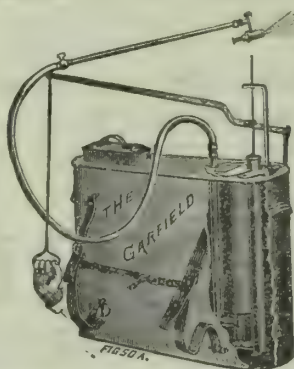
I deliver free on board at SAN FRANCISCO and PORTLAND.

Address DUANE H. NASH, Sole Mfr., Millington, New Jersey.



THE ATTENTION of those desiring a Spray Pump is called to this cut. The Bean Spray Pump throws a CONTINUOUS spray, which enables the operators to spray MANY MORE TREES in a day than could be done with other Pumps. The men who operate the sprays can swing them onto the next tree and keep spraying while the pumper is driving. Time is money. These pumps are in use in every fruit-growing county and town on the coast and are the favorite. THE BEAN and NEW BEAN NOZZLES HAVE NO EQUAL. See them at Midwinter Fair.

BEAN SPRAY PUMP CO.,
SAN JOSE, CAL.



SPRAYING PUMPS.

Ours always the best—We lead others follow—Our Double Empire Barrel Pump has brass cylinder, plunger and rod, brass valve seat, and brass spout. Our

GARFIELD KNAPSACK

is made of heavy sheet copper, concaved to fit the back, with metal valves, and furnished with the latest improved Vermorel Nozzle. The very best Knapsack Sprayer on the market. Our Little Gem pail pump is all brass with metal valves, heavy hose and the improved Vermorel Nozzle. Special prices to offset high transportation rates. Catalogue free.

FIELD FORCE PUMP CO.,
141 BRISTOL AVE., LOCKPORT, N. Y.



SEND FOR CATALOGUE TO
FRESNO AGRICULTURAL W'K'S, FRESNO, CAL.

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Scientific Press



Patent Agency.

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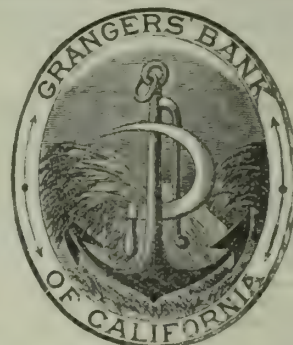
Inventors on the Pacific Coast will find it greatly to their advantage to consult this old experienced, first-class Agency. We have able and trustworthy Associates and Agents in Washington and the capital cities of the principal nations of the world. In connection with our editorial, scientific and Patent Law Library, and record of original cases in our office, we have other advantages far beyond those which can be offered home inventors by other agencies. The information accumulated through long and careful practice before the Office, and the frequent examination of Patents already granted, for the purpose of determining the patentability of inventions brought before us, enables us offer to give advice which will save inventors the expense of applying for Patents upon inventions which are not new. Circulars of advice sent free on receipt of postage. Address DEWEY & CO., Patent Agents, 220 Market St. S. F.

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OF CALIFORNIA.

SAN FRANCISCO, CAL.

INCORPORATED.....APRIL, 1874



Capital paid up.....\$1,000,000
Reserve Fund and Undivided Profits, 120,000
Dividends paid to Stockholders.... 222,000
OFFICERS.

A. D. LOGAN.....President
I. O. STEELE.....Vice-President
ALBERT MONTELLIER.....Cashier and Manager
FRANK MC MULLEN.....Secretary

General Banking. Deposits received, Gold and Silver.
Bills of Exchange bought and sold.
Loans on wheat and country produce a specialty.
January 1, 1894. A. MONTELLIER, Manager.

Deep Well Pumps.

The valves and working parts of the Fulton Pump can be removed, repaired and replaced without taking the pump out of the well.

Pumps fitted up for all depths of wells, ready to put in.

Send for illustrated circulars and price list to

A. T. Ames,
GALT, CAL.

Manufacturer of Pumps and Windmills.



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A. VAN DER NAILLEN, President.
Assaying of Ores, \$25; Bullion and Chlorination Assay, \$25; Blowpipe Assay, \$10. Full course of assaying, \$50. ESTABLISHED 1864. Send for circular.

TREE WASH.
OLIVE DIP.

"Greenbank" Powdered Caustic Soda and Pure Potash.

T. W. JACKSON & CO..

Sole Agents,
No. 5 Market Street, San Francisco, Cal.

S. F. MARKET REPORT

Market Review.

SAN FRANCISCO, April 18, 1894.

Wheat.

It is useless to give a shipping quotation for Wheat, as there is no buying for export purposes. Sales can be made for Call Board uses away above the parity of foreign markets, say at \$1.05@1.07½ per cwt, and it looks as if higher prices would yet be obtainable. Good milling Wheat commands \$1.12½.

Barley.

The boom in this article is still in progress, being intensified by the continued dry weather. The general asking price for feed Barley to-day was \$1.10 per cwt, and it would have to be something poor for which less would be taken. Brewing is altogether nominal, holders keeping out of the market.

Dried Fruits.

Prospects for the growing crop continue to be as favorable as could be desired, while the outlook in regard to prices is also encouraging. Stocks of Apples, Apricots, Peaches and Pears are quite small. Apples, 5½@6c per lb for quartered, 5½@6c for sliced, and 9@10c for evaporated; Peaches, 6@8c per lb for bleached halves, and 2@4c for quarters; bleached Peaches, 7½@10c; sun-dried Peaches, 5@6½c; Apricots, Moorpark, 11½@12½c; do Royals, 10@12c for bleached and 6@7c for sun-dried; Prunes, 5½@5½c per lb for the four sizes, —c for the five sizes, and @4½c for small; Plums, 4½@5c for pitted and 1½ to 2c for unpitted; Figs, 3 to 4c for pressed and 1½ to 2c for unpressed.

RAISINS—Some little inquiry is reported, giving better feeling to the market, though not strengthening values. We quote as follows: London Layers, 75c to \$1.15; loose Muscatis, in boxes, 50@75c; clusters, \$1.25 to \$1.50; loose Muscatis, in sacks, 2½ to 2½c per pound for 3 crown, and 2c for a crown; Dried Grapes, 1½c @1½c per pound.

General Produce Market.

OATS—Another advance occurred this morning. Receipts to-day were only 1000 sks, one-half of this amount coming from Washington. We quote as follows: Milling, \$1.17½@1.27½; Surprise, \$1.32½ @1.37½; fancy feed, \$1.27½@1.32½; good to choice, \$1.15@1.25; poor to fair, 97½c@1.12½; Black, \$1.07½@1.22½; Red, nominal; Gray, \$1.10 @1.20 per cwt.

CORN—Prices firm. No Yellow was seen on the tables this morning and only a small quantity of White. Quotable at \$1.25 per cwt for Large Yellow, \$1.25 for Small Yellow and \$1.27½@1.37½ for White.

CRACKED CORN—Quotable at \$28.00@29.00 per ton.

CORNMEAL—Millers quote feed at \$27.50@28.50 per ton; fine kinds for the table, in large and small packages, 2½@3½c per pound.

OILCAKE MEAL—Quotable at \$37.50 per ton from the mill.

COTTONSEED OILCAKE—Quotable at \$32.50 per ton.

SEEDS—We quote: Mustard, brown, \$2.25@2.50; Yellow, \$3@3.50; Trieste, \$2.50@2.75; Canary, 3@4c; Hemp, 3½@4½c per lb; Rape, 2@2½c; Timothy, 6½c per lb; Alfalfa, 13@13½c; Flax, \$3@3.25 per cwt.

MIDLINGS—Quotable at \$18.50@20.50 per ton.

RYE—Stocks are light and the situation shapes against buyers. Quotable at \$1.10@1.12½ per cwt.

BUCKWHEAT—Offerings are moderately free, but there is no demand. Quotable at \$1@1.15 per cwt.

GROUND BARLEY—Quotable at \$23@24 per ton.

POTATOES—There is pretty good demand and prices for really desirable stock are somewhat steadier than they have been, while poor product goes off slowly at irregular figures. We quote as follows: New Potatoes, 1 to 2c per lb; Sweets, 75c@1.25 per cwt; Early Rose, 35@40c; River Burbanks, 30@40c; River Red, 20@25c; Oregon Burbanks, 50@90c; Oregon Garnet Chiles, 60@75c per cwt.

ONIONS—Quotable at \$2@2.50 per cwt for good sound California stock, with sales as high as \$3 for fancy Oregon.

DRIED PEAS—We quote: Green, \$1.25; Blackeye, \$1.60@1.65; Niles, \$1.50@1.75 per cwt.

BEANS—There is firm holding, but no large trade. The market is in unsettled condition, owing to the dry weather, with the tendency against buyers. We quote as follows: Bayos, \$2.40@2.50; Butter, \$1.80@2 for small and \$2@2.25 for large; Pink, \$1.90@2; Red, \$2@2.35; Lima, \$3@3.50; Pea, \$2.50@2.60; Small White, \$2.50@2.65; Large White, \$2.40@2.55 per cwt.

MILLSUFFS—We quote: Rye Flour, 3½c; Rye Meal, 3c; Graham Flour, 3c; Oatmeal, 4½c; Oats, 3c; Cracked Wheat, 3½c; Buckwheat Flour, 5@5½c; Pearl Barley, 4½@4½c per lb; Normal Nutrient, \$3 per case of 1 dozen cans; Breakfast Delight, \$3.25 per case of 2 dozen packages.

BRAN—Quotable at \$17.50@18.50 per ton.

HAY—Prices are firm. Wire-bound Hay sells at \$1 per ton less than rope-bound hay. Following are wholesale city prices for rope-bound hay: Wheat, \$12.50@17.50; Wheat and Oat, \$12@15.50; Wild Oat, \$12@13.50; Alfalfa, \$9@11.50; Barley, \$11@14; Clover, \$9.50@11; Compressed, \$11@14; Stock, \$9.50@10.50 per ton.

STRAW—Quotable at 75@85c per bale.

HOPS—Business remains quiet, though some little inquiry is noted for parcels that will class as strictly choice. Thomas' Produce Report says: "There has been an improvement of 1 to 2c per lb in prices in New York State. Offerings there and also on this coast are now extremely light. It would not be surprising to see a further advance as soon as the demand increases. The hot and dry weather has commenced to be felt in the hop-growing districts; and, unless we have rain very shortly, the yield will be light, while the new yards that were set out this spring will make no crop." Quotable at 14@16c per lb.

VEGETABLES—Supplies of Asparagus, Rhu-

barb and Green Peas continue very large, and prices for these descriptions are low, with promise of keeping so for a time. Cannors are buying Asparagus, though not in quantity sufficient to have any material influence on the situation. Some small purchases of Rhubarb have also been made on canning account. In another week Peas will likely be in demand for canning purposes. Peppers, String Beans and Tomatoes come in occasionally, but in a short while all three kinds will be in liberal receipt. Arrivals yesterday included 1425 boxes Asparagus, 719 boxes Rhubarb and 680 sacks Green Peas. We quote as follows: Cucumbers, 40@50c per dozen for common and 75c@1.25 for good to choice; Asparagus, 25@65c per box for the ordinary run and 75c@1 per box for choicer quality; Rhubarb, 20@75c per box; Green Peas, common, 75c@1 per lb; Sweet do, 1½@2c per lb; String Beans, 20c per lb; Marrowfat Squash, —@— ton; Hubbard Squash, —@— ton; Green Peppers, 35@40c per lb; Tomatoes, —@— per box for poor to fair and \$2.50@3 for good to choice; Turnips, 75c per cwt; Beets, 75c per sack; Parsnips, \$1.25 per cwt; Carrots, 35@40c; Cabbage, 35@40c; Garlic, 1@2½c per lb; Cauliflower, 60@70c per dozen; Dry Peppers, 15c per lb; Dry Okra, —@— lb.

FRESH FRUIT—Stocks of Apples are cleaning up. Choice product is a trifle firmer in price, but there is no improvement in poor offerings. We quote: Apples, 50@75c per box for common, 85c@1.25 for fair to good, and \$1.50@2 for choice.

BERRIES—Arrivals of Strawberries yesterday were 18 chests. Quotable at 75@90c per drawer.

CITRUS FRUIT—Supplies are not heavy, but there is stock enough to satisfy all requirements. Choice goods have the preference at the higher figure. We quote as follows: Fair to choice Navel Oranges, \$1.35@3 per box; Seedlings, \$1@1.50; Mexican Limes, \$4.50@5 per box; California Limes, 50@60c for small box and 75c@1 for large; Lemons, Sicily, \$4@5; California Lemons, 75c@1 for common and \$1.25@2 for good to choice; Bananas, \$1.50@2.50 per bunch; Hawaiian Pineapples, \$2.50@3; Mexican Pineapples, \$3@3.50 per dozen.

NUTS—Business is confined largely to jobbers. We quote as follows: Chestnuts, 6@8c per lb; Walnuts, 6@7½c for hard shell, 8@9c for soft shell and 8@9c for paper shell; California Almonds, 10@11c for soft shell, 6@7c for hard shell and 11½@12½c for paper shell; Peanuts, 3@4c; Hickory Nuts, 5@6c; Filberts, 10@10½c; Pecans, 5@8c for rough and 8@10c for polished; Brazil Nuts, 10@11c; Cocoanuts, \$5@5.50 per 100.

HONEY—No movement of consequence. There is strong holding, however, because the crop this season is expected to be more or less a failure. It is estimated that from 2000 to 3000 cases of last year's crop are still in first or second hands, stored in this city and at producing points, but they are held as a rule above the figures now nominally current. A shipment of 327 cases was made to New York to-day by sailing vessels. We quote as follows: Comb, 10@11c per lb for bright and 8@9c for dark to light amber; water white extracted, 4½@5c; amber extracted, 4½c; dark, 4½c per lb.

BEESWAX—Quotable at 25@26c per lb.

BUTTER—The better qualities are a shade firmer, receipts being less free. The effects of dry weather and poor feed are shown on many consignments. The inquiry is mainly for choice grades, making it difficult to promptly sell ordinary qualities. We quote as follows: Fancy Creamery, 17½@18½c; fancy dairy, 16@17c; good to choice, 14½@15c; common grades, 13@14c; store lots, 12@12½c; pickled roll, 17@18c per lb.

CHEESE—Large supplies keep prices low and easy. We quote: Choice to fancy, 8½@9½c; fair to good, 7@7½c; Eastern, ordinary to fine, 13@14½c per lb.

EGGS—Stocks are heavy and prices weak. Buyers are getting more discriminating, as there is a wider range in the quality of offerings. We quote: California ranch, 12½@13½c; store lots, 10@12c per dozen.

POULTRY—The market is a dragging one, there being very little demand for anything except choice young stock, and of this there is fair supply. Turkeys are a drug, both live and dressed being neglected. Broilers are more plentiful and lower. We quote as follows: Live Turkeys—Gobblers, 8@9c; Hens, 8@9c; dressed Turkeys, 8@12c per lb for Gobblers and 8@12c for Hens; Roosters, \$3.50 @4 for old and \$6.50@7.50 for young; Broilers, \$3 @5; Hens, \$4@6; Ducks, \$4@6; Geese, \$1.50@2 per pair; Pigeons, \$2@2.50 per dozen.

GAME—Nominal.

HIDES AND SKINS—Quotable as follows:

	Sound.	Culls.
Heavy Steers, 54 lbs up, ½ lb.	4½@5c	3½@4c
Medium Steers, 48 to 56 lbs.	4@5c	3@4c
Light, 42 to 47 lbs.	3½@4c	2½@3½c
Cows, over 50 lbs.	3½@4c	3@4c
Light Cows, 50 to 55 lbs.	3½@4c	3@4c
Stags, 17 to 30 lbs.	4@5c	3@4c
Kips, 17 to 30 lbs.	4@5c	3@4c
Veal Skins, 10 to 17 lbs.	5@6c	4@5c
Calf Skins, 5 to 10 lbs.	7@8c	6@7c

TALLOW—We quote: Refined, 5½@5½c; rendered, 4½@4½c; country Tallow, 4@4½c; Grease, 3@3½c per lb.

PROVISIONS—Hams and Bacon are showing steadier feeling and an advance on quoted figures is not unlikely in the near future. We quote: Eastern Sugar-cured Hams, 12½@13c; California Hams, 11@12c; Bacon, Eastern, extra light, 12c; medium, 9½c; do, light, 10c; do, light, boneless, 11½c; light, medium, boneless, 10½c; extra light, sugar-cured, 13½c; Pork, prime mess, \$14 @15; do, mess, \$17@18; do, clear, \$19.50 per do, family, \$22 per bbl; Pigs' Feet, \$11.50 per do, Beef, mess, bbls, \$7.50@8; do extra mess, bbls, \$8.50@9; do, family, \$9.50@10; extra do, \$11@11.50 per bbl; do, smoked, 10c; Eastern lard, tierces, 7½@7½c; do prime steam, 9½c; Eastern pure, 10-lb pails, 10c; 5-lb pails, 10½c; California, 10-lb tins, 9c; do, 5-lb, 9½c; do, kegs, 10c; do, 20-lb buckets, 9½c; compound, 7c for tierces.

WOOL—Business is of modest proportions, there being no shipping demand. The weekly report of Thos. Denigan, Son & Co. says: "There is a fair demand for all strictly free Wool, but the poor descriptions that class as burry, seedy and 'offs' are

RANDOLPH STEEL FRAME HEADER.

AND

CRAVER ALL STEEL HEADER.



The RANDOLPH HEADER Excels Any Header in the Market, Except the CRAVER.

IT IS LIGHT, SIMPLE, STRONG, AND OF GREAT CAPACITY.

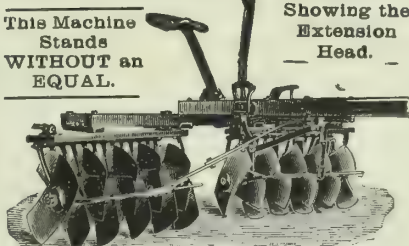
More Randolph and Craver Headers Sold than All Others Combined.

Sizes, 8, 10, 12, and 14 Feet.

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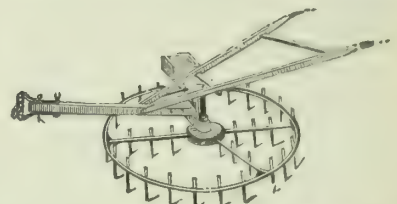
PACIFIC SPADER.

This Machine Stands WITHOUT AN EQUAL.



REVERSIBLE,

Showing the Extension Head.



CALIFORNIA CIRCULAR ORCHARD OR VINEYARD HARROW. NO FARMER SHOULD BE WITHOUT ONE.

HOOKER & CO., 16 and 18 DRUMM ST., SAN FRANCISCO.

not salable. There are no purchases of consequence for shipping, the bulk of the business being for local scouring. From the East we hear of no improvement in the general demand for Wools, though some business is being done at current rates." We quote spring: Year's fleece, ½ lb., 6@7c; Six to eight months, San Joaquin, poor, 5@6c; do fair, 7@9c; Oregon and Washington: Heavy and dirty, 6@7c; good to choice, 8@10c; valley, 10@13. We quote fall: Northern defective, 5@6c; Southern and San Joaquin, 3@4c.

San Francisco Meat Market.

Steady tone to quotations for choice Beef. Good Mutton brings full figures, though there is much poor stock that goes at about any price which buyers will pay. Lamb shows a wider range, receipts being more free. Following are the rates for whole carcasses from slaughterers to dealers:

BEEF—First quality, 5½@6c; second quality, 4½@5c; third quality, 3½@4½c per lb.
CALVES—Quotable at 4@5c for large, and 5@7c per lb for small.
MUTTON—Quotable at 5½@6½c per lb.
LAMB—Spring, 7@10½c per lb.
PORK—Live Hogs, on foot, grain fed, heavy and medium, 4½c; small Hogs, 4½@4½c; stock Hogs, 4c; dressed Hogs, 6½@7½c per lb.

CALIFORNIA FRUITS

—AND—

HOW TO GROW THEM.

A MANUAL OF METHODS WHICH HAVE YIELDED GREATEST SUCCESS; WITH LISTS OF VARIETIES BEST ADAPTED TO THE DIFFERENT DISTRICTS OF THE STATE.

PRACTICAL, EXPLICIT, COMPREHENSIVE.

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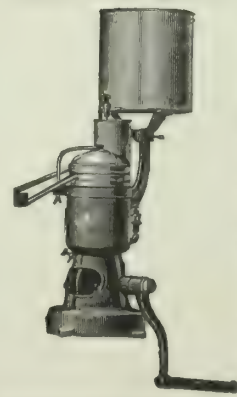
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The Wonderful Arizona Everbearing Strawberry.

Of all the strawberries raised on the Pacific coast there is none more prolific, larger or better flavored and sweet than the Arizona Everbearing, and it colors up fine, is a good shipper and the plants are very thrifty. The writer got 1000 plants from Arizona a year ago, from which he has now over 200,000. Send for some and try them. Price \$1 per 100 or \$5 per 1000 plants, delivered at express office or freight depot in Pasadena. Also Orange and Lemon Trees, one or two-year buds on four-year roots. Fine trees at \$15 and \$20 per hundred, or 25 cts. each in lots of 10 or less than 100. Address C. B. HEWITT, Pasadena, Cal.



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Cause and Cure of Tramp Nuisance.

Continued from page 312.

It is time to begin the thorough investigation of the problem thus pressed upon our attention. The halcyon days of plenty, of free land and ample room to expand, are gone forever. Population has spread over all the desirable portion of our vast domain. Closer crowding of population and sharper competition will be the progressive order of the future. The problem is so to organize labor conditions that there shall be work for all. It is a difficult problem, but it can be solved. It will enter into the discussion of a later monthly topic. It is the first step in the remedy of the tramp evil. People who can find nothing to do by which to obtain a livelihood are not to be blamed for adopting a life of wandering mendicancy; therefore plenty of work accessible to all is an essential condition to checking the drift into tramp life. That the regulation of industrial conditions so that there will always be ample demand for labor is not a hopeless problem is intimated by the fact that the reasonable supply of the wants of all will reasonably employ the industry of all.

In addition to the practical adjustments above indicated, the more rigid restriction of foreign immigration should be urged as a means of preventing the augmentation of the hobo host. Too long we have permitted this country to be made the dumping ground of the paupers, incompetents and criminals of Europe. We are now reaping the fruits of our folly. It is surprising how large a percentage of our tramp population is of foreign birth or extraction. This hints the need of more effective restriction. Something has been done, but not enough. Every Congress for the last dozen years has added somewhat to the legislation governing immigration, in the way of restriction. The last Congress did the best work yet done, and the good effects are visible in the cutting down of immigration in recent months by nearly one-half. Of course it cannot be credited with the entire reduction, but the diminution of the volume of immigration was noticeable before the business depression was felt. Still more in the way of restriction is required in order to relieve our situation from danger. The qualifications, both as to character and property of immigrants, should be materially raised. Personally I am in accord with the demand for absolute exclusion for a period of at least ten years, or until we can assimilate the vast influx by which we have been inundated in recent years. Failing in that, I would come as near to it as possible.

Unfortunately the present Congress shows no disposition to add anything to the effectiveness of immigration legislation. Perhaps, more than any of its predecessors, it appears to be engrossed in partisan legislation. The same motive will cause it to avoid the immigration question. Freshly-arrived foreigners are altogether too valuable as party recruits to be lightly excluded by politicians. The State of New York would be overwhelmingly Republican but for the foreign city of New York, which is overwhelmingly Democratic. This precludes the hope of any wholesome legislation upon this subject by a Democratic Congress. I do not mean to imply that Republicans are not as unscrupulously alert for partisan advantage when opportunity serves. The world is too young yet to reward a search for saintliness among contending partisans.

I am no longer deceived by the clap-trap cry; "America is the asylum of the oppressed, the refuge of the down-trodden, and welcomes the starving to her abundance." The "oppressed and down-trodden," as they materialize among us, are pretty highly seasoned with red-handed anarchists and radical socialists, while the starving do not become self-supporting so often as could be desired. They might as well starve a little longer at home, especially as their coming in such numbers is taking the bread out of our children's mouths and rapidly reinforcing our vagrant elements; hence I lift my voice for more rigid restriction of immigration.

Another occasion of foreboding is that, just as we had secured legislative enactments that promised a reasonably effective exclusion of Chinese immigration, we are confronted by a new treaty negotiated with China by the State Department, and only awaiting confirmation by the Senate, which threatens to undo about all that has been done in the last six years. As I read it, you can "drive a coach and four through it" without transgressing its provisions. It looks as if the wily Celestial had once more outwitted us. There will be a marvelous number of Chinamen who will have the prescribed relatives—"wife, child or father"—entitling them to come; the "property or debts amounting to \$1000"—or who

come as "students, merchants or travelers for curiosity," who will forget to return, their curiosity satisfied, and stay as laborers. Not that the Chinese are likely to contribute largely to the army of tramps, the legions of the unemployed, or to require much relief by our charitable associations. They are notably industrious and orderly. The chief objection to them is that they institute a competition for labor that white men cannot meet, and force them into the ranks of the unemployed, and ultimately reduce them to vagrancy.

More, however, must be done than can be effected by the methods so far suggested. They make no provision against those who are constitutionally opposed to work—who feel insulted if work is offered them. It is of this material that the tramp contingent is largely composed. It should be the business of wise statesmanship to transform the peregrinations of these vagrants into a "Fool's Errand." Upon this class it is time to enforce the ancient law already mentioned, "if any will not work, neither shall he eat." Just so far as they can be identified they should be allowed to starve until they will work. Individually, I act upon this rule, so far as I can do so intelligently. I will not furnish food to a professional tramp if I can determine that he is one. In the majority of cases it is not difficult to differentiate the tramp from the workingman.

There ought to be a system devised and put in operation that would fit the emergency. Something akin to the German method might fill the requirements. After the war with France, Germany was overrun with vagrants, and communities were demoralized. The Government grappled with the evil comprehensively and successfully. Vagrants—all who could work and would not—were summarily dealt with. They were turned over to the police and compelled to work for a considerable period, ranging from two weeks to six months. A system was devised by which the unemployed could seek work, and be assisted in their quest, without fear of molestation. Stations were established throughout the country where a workingman seeking employment could obtain meals and a bed in return for a half day's work. But he must have a card showing his destination, etc. Upon arriving at a station he delivers his card to the superintendent. On leaving, his card is returned properly indorsed by the superintendent. When a tramp is found off the route called for by his card, or without a card, he is treated as a vagrant, if he can give no satisfactory explanation. In addition to this there are other stations established where those out of employment may become inmates for a limited period—not to exceed two years. One half of each day's work is taken as payment for food and shelter. The other half is placed to his credit as a fund when he leaves the colony. This method speedily abated the tramp nuisance in Germany. A similar system could be made equally effective here. It is the height of folly to ignore the vagrant and lawless elements, or to temporize with them as we have done. Their number will increase and their demands grow more insolent, so long as good-natured indifference or weak compliance is shown them. We must resort to sterner methods, however repugnant they may be to a liberty-loving people. It is not liberty that will thus be prevented, but license—the spirit of lawlessness that easily becomes dangerous.

The industrious members of community are entitled to protection against all who propose to live without labor off the labor of others. If that statement cuts much wider than the comparatively limited class of professional tramps, I will not modify it for that reason. Honest labor is no less entitled to protection against the class that swoops down from above than against that which burrows up from below. Labor, the most abundant as well as the most important of all the conditions of human welfare, must not be disturbed or made afraid. Labor must be fostered, protected, encouraged in every possible way. Every scheme to deprive labor of its rights, to share its products without contributing to production, must be defeated. Hence I would not here overlook the fact that, if there are 50,000 professional tramps who aim to subsist solely on the labor of others, there are more than an equal number, who consider themselves the cream of social America, who entertain a similar aim and are quite as successful in accomplishing it. Tramps get but a comparatively insignificant fraction of the product of labor; the aristocracy of plutocracy—tramps of another sort—get more than the half. Both are obnoxious to the law, "If any will not work, neither shall he eat." The enforcement of that law would deny food to many a millionaire. I should like to see it enforced until both tramp and mil-

lionaire were compelled to work, though it would be particularly necessary to prescribe the line of labor in which the millionaire should be employed. The duty of the hour is to guard labor against cormorants and foes of all sorts, and make it secure in the enjoyment of its just rights.

Programme for the Campaign of 1894.

The following programme has been arranged by the Executive Committee of the California State Grange. Bro. Messer, Worthy Lecturer of the National Grange, and Bro. Roache, Worthy Master of the California State Grange, will address the members of the order and citizens at the places herein named:

Watsonville.....	Friday,	April 20
San Jose.....	Saturday,	" 21
Alhambra, Danville and Valley		
—Contra Costa Co. (Address at Danville).....	Monday,	" 23
West San Joaquin (Address at Tracy).....	Tuesday,	" 24
Stockton, Waterloo and Washington—San Joaquin Co. (Address at Stockton).....	Wednesday,	" 25
Santa Rosa, Sebastopol, Bennett Valley and Glen Ellen —Sonoma Co. (Address at Santa Rosa).....	Thursday,	" 26
Petaluma and Two Rock—Sonoma Co. (Address at Petaluma).....	Friday,	" 27
Sacramento, American River and Enterprise—Sacramento Co. (Address at Sacramento).....	Saturday,	" 28
Elk Grove and Florin—Sacramento Co. (Address at Florin).....	Monday,	" 30
Lodi, Woodbridge, New Hope and Lockeford—Address at Lodi.....	Tuesday,	May 1
Roseville—Placer Co.....	Wednesday,	" 2
Wheatland—Yuba Co.....	Thursday,	" 3
Grimes and Antelope.....	Friday,	" 4
North Butte, March, South Sutter and Yuba City—Address at Yuba City.....	Saturday,	" 5

By order of the Executive Committee.
DON MILLS, Secretary.

Mr. Messer at Merced.

Merced Grange met in special session on Tuesday the 15th inst., to welcome Brothers Alpha Messer, lecturer of the National Grange; C. D. Sage, an official of Massachusetts State Grange; and Worthy State Master A. P. Roache, who were expected to arrive on the 11:19 train from Selma. Shortly before 12 o'clock Brother H. J. Ostrander presented the visitors to Worthy Master Bickford, who in turn introduced them to the grange; and after a song of welcome from the members a recess was declared to give each member an opportunity to extend the hand of fellowship to the visiting brethren. No sooner were the greetings over than the master's gavel again called us to order, and we were invited to the banquet room where an appetizing lunch awaited us. When ample justice had been done the luncheon, we again repaired to the hall, where all enjoyed themselves in social intercourse for a time. Then Brother Smith invited our guests to take a ride around town. Brothers Sage and Messer accepted, but Brother Roache preferred to chat with Patrons in the hall.

At 2 o'clock we were again called to order in open session and Worthy Master Bickford announced that the afternoon session would open with a song by the grange. Next, Brother Roache was introduced, and in a short but eloquent and instructive speech, told of the first grange, when and how it originated, and depicted many things achieved for the farmer through the organization. Then Sister Scofield accompanied the Merced quartet, who volunteered a selection which was pleasingly rendered. Brother Bickford then in a few well-chosen words introduced the speaker of the day, Brother Messer, who was listened to for an hour, with marked attention, by an appreciative audience as he in a clear, forcible and comprehensive address, pointed out in how many ways the grange has benefited the

farmer educationally and socially, and, through co-operation, financially. He told of the order in New England, and said "the Grange has never since its organization been as prosperous and popular as at the present time." He strongly favors the election of more Congressmen and legislators from the farming population, because he said they should be better acquainted with the needs of the farmer.

A solo by Sister Jessie Peck was the next on the programme and was much appreciated.

Brother Sage then made a few remarks in praise of the order, also of our State. Then, after a grange song by the quartet, we were dismissed, all present well pleased with the day.

Brother and Sister Smith entertained the brothers in the evening. Fraternally,
COUNTY DEPUTY.

Steady Paying Work.

Work for workers! Are you ready to work, and do you want to make money? Then write to B. F. Johnson & Co. of Richmond, Va., and see if they cannot help you.

ASSESSMENT NOTICE.

Grangers' Business Association,

(A CORPORATION)

Principal Place of Business, San Francisco, Cal.

NOTICE is hereby given that at a meeting of the Directors of the Grangers' Business Association, held on the 11th day of April, 1894, an assessment of three dollars and seventy-five cents (\$3.75) per share was levied upon the capital stock of the Corporation, payable immediately to Charles Wood, the Secretary, at his office at 108 Davis street, San Francisco, California.

Any stock upon which this assessment shall remain unpaid on TUESDAY, the 15th day of May, 1894, will be delinquent and advertised for sale at public auction, and, unless payment is made before, will be sold on FRIDAY, June 15th, 1894, at two o'clock p. m. of said day, to pay the delinquent assessment, together with costs of advertising and expenses of sale.

CHARLES WOOD,
Secretary of Grangers' Business Association.
Office, 108 Davis street, San Francisco, Cal.

NAPA VALLEY NURSERIES.

(ESTABLISHED 1878.)

The Fruit Tree Planting Season being over for this season, attention is called to

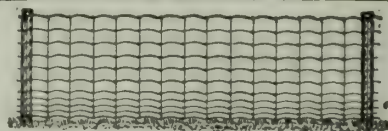
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Ferns, Cypress, Palms.
Geraniums, Fuchsias, Carnations, etc., etc.
A great variety of well-grown plants of the most favorite sorts.
Send for catalogue.
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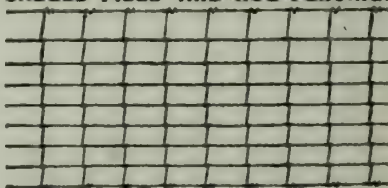
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We are working three gangs of men, in four shifts and turning out a forty rod roll of complete fence every six minutes of the twenty-four hours. Still the hundreds of miles we had on hand Mar. 1st are melting away like April snow. Farmers will have it, and with us, believe in elasticity.

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T. R. BALLINGER, Grain Salesman.

Patents Issued to Pacific Coast Inventors.

Reported by Dewey & Co., Pioneer Patent Solicitors for Pacific Coast, 220 Market Street.

FOR WEEK ENDING APRIL 3, 1894.

517,788—SCHOOL DESKS—T. Beising, Los Angeles, Cal.
517,728—NUT LOCK—J. H. Burrows, Globe, A. T.
517,601—CAR BRAKE—H. B. Cary, Los Angeles, Cal.
517,793—VENTILATOR—W. T. Cottier, Los Angeles, Cal.
517,794—FRICTION CAR—W. T. Cottier, Los Angeles, Cal.
517,815—ROCK DRILL—L. N. Day, San Jose, Cal.
517,567—FIRM GRATE—Ferris & Wheeler, Tacoma, Wash.
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California Manufactures.

A bulletin issued by the Census Bureau gives the statistics of the various manufactures in the several States, including sixty-seven different lines: California is shown to stand as to the value of products in the different branches as follows: Agricultural implements, ninth; blacksmithing and wheelwrighting, seventh; boots and shoes, tenth; bread and other bakery products, eighth; brick and tiles, eleventh; carpentering, thirteenth; carriages and wagons, fourteenth; cars and general shop construction and repairs by steam railroad companies, eighth; dairy products of factories, nineteenth; chemicals, tenth; men's clothing, custom and repairing, sixth; same, factory product, tenth; woman's clothing and dressmaking, sixth; woman's clothing, factory product, sixth; coffee and spice roasting and grinding, seventh; confectionery, ninth; cooperage, eleventh; fertilizers, sixteenth; flouring and grist mill products, eleventh; foundry and machine shop products, twelfth; furniture, twelfth; illuminating and heating gas, fourth; hats and caps, other than wool, ninth; iron and steel work, seventeenth; architectural iron work, tenth; jewelry, seventh; leather, tanned and curried, sixth; distilled liquors, fourteenth; malt liquors, eleventh; lumber mill products, fourteenth; planing mill products, tenth; marble and stone work, eleventh; masonry, brick and stone work, eighteenth; millinery, eighth; painting and paper-hanging, tenth; paints, ninth; paper, fifteenth; patent medicines, thirteenth; paving and paving materials, fifth; plumbing and gas-fitting, twelfth; book and job printing and publishing, eighth; newspaper and periodical printing and publishing, seventh; saddlery and harness, eleventh; shipbuilding, fourth; shirts, fifth; silk, seventh; wholesale meat slaughtering and packing, seventeenth; soap and candles, eighth; sugar and molasses refining, second; chewing and smoking tobacco, fifteenth; cigars and cigarettes, ninth; woolen goods, fourteenth.

A Lightning Calculator.

The new theater of Koster & Bial's, New York, is just now a point of interest to the mathematician.

M. Inaudi, of Paris, astounds every one by his marvelous feats with figures. With his back to a large stage blackboard he reads off accurately long lists of figures given by the audience and written down by an assistant, the figures apparently becoming photographed on his brain and remembered without effort. When later he is called upon to repeat them, each figure in four different sums was correctly remembered and the problems solved, although M. Inaudi permitted a quarter of an hour to elapse after the writing of the figures on the blackboard before he read them off, devoting himself meanwhile to telling the day of the week on which any one in the audience was born, if they stated the year and day of the month. M. Inaudi explains this interesting feat by saying that one part of his brain goes ahead solving the several problems on the blackboard—the figures of which he has only heard announced once and had never seen—and another part of his queer gray matter attends strictly to the business of telling the members of the audience their birthdays!

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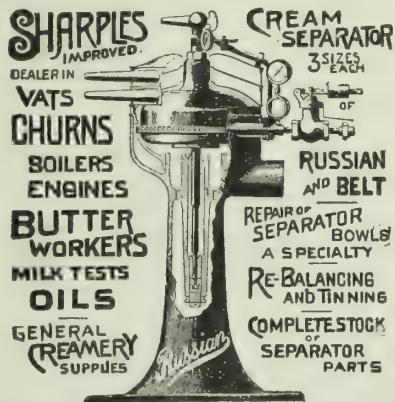
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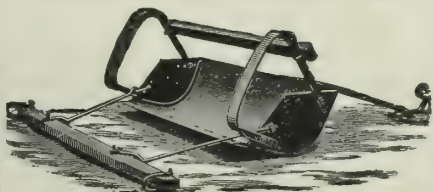
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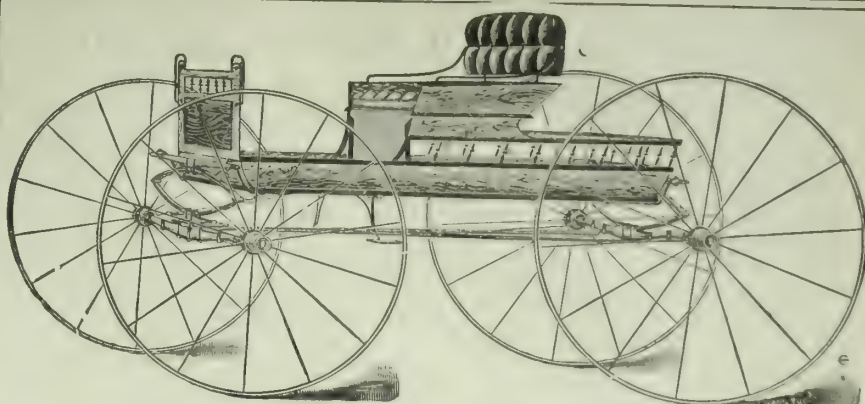
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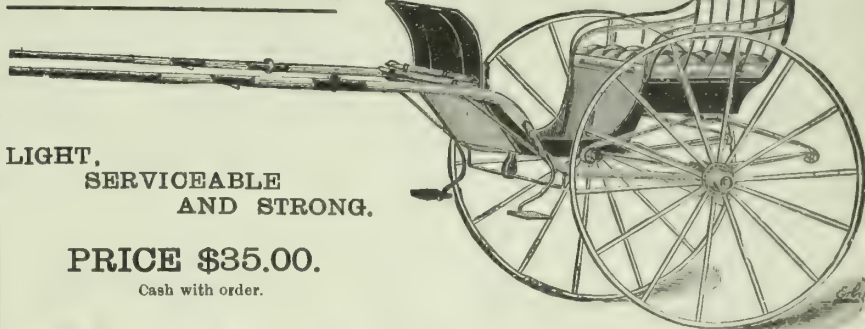
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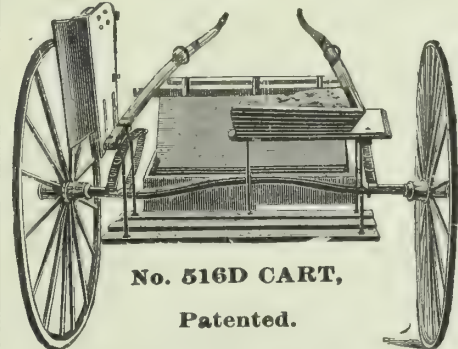
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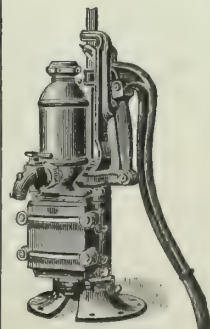
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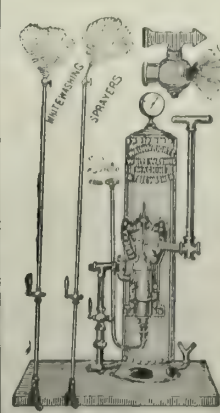
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MORGAN SPADING HARROW.

There has been lately landed in San Francisco the finest lot of imported Percheron and French Coach stallions ever brought to the Pacific Coast. This stock ranges in age from two to six years, and was selected in France by the veteran importer, Leonard Johnson, who for many years was foreign buyer for M. W. Dunham, of Wayne, Ill. Mr. Johnson has personally selected and brought to this country over Two Thousand Horses, and is universally acknowledged to be the best judge of Draft Horses in America. Each animal in this lot is a good one, not only individually, but of the best possible breeding, as is attested by the certificates of registry in both the Percheron stud-books of France and America. A satisfactory guarantee given that each stallion will get sixty per cent of colts. This is a rare chance to get a first-class stallion, as no such stock as this has ever been offered for sale here at as low figures as this will be sold for. Time given on approved paper. STABLES—Close to Midwinter Fair, on Fifth avenue, opposite Race Track, next door to Scott & McCord's Feed Store, San Francisco, Cal. Take Geary street car. For further information and catalogues, address the Secretary of the American Percheron Horse Breeders' Association, S. D. THOMPSON, OCCIDENTAL HOTEL, SAN FRANCISCO.

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PACIFIC RURAL PRESS

Vol. XLVII. No. 17.

SAN FRANCISCO, SATURDAY, APRIL 28, 1894.

TWENTY-FOURTH YEAR.
Office, 220 Market Street.

Flower Shows at Midwinter Fair.

The State Floral Society collected a very fine display of native bloom at its wild-flower show in the Horticultural building at the Midwinter Fair last week. Contributions of wild flowers had been received from Solano, Santa Cruz, Marin, San Francisco, Santa Clara and Alameda counties. Notwithstanding that the north winds have swept the hills early this year, the show was good.

The display itself was particularly interesting in the fact that it called attention to the great number of wild flowers which are to be found in the immediate vicinity of San Francisco. The display was doubtless surprising to those who think they have to go into the interior for wild flowers. Among the beautiful things to be seen were beach daisies, thorn bush blossoms, baby blue-eyes, solomon seal, wild ginger, gillias, columbines, iris, and hundreds of other varieties of more or less familiar flowers.

Along one of the tables were stretched great sprays of wild blackberry vines, with the blossoms looking just as natural as if seen along the roadside. On another table were wild bleeding hearts and columbines, the Indian paint brush, and a specimen of one of the most beautiful double cream California poppies that a Californian ever laid eyes upon. Those in attendance assure us that the wild flower was very attractive to the throngs of Eastern visitors who examined it.

The next effort of the Floral Society at the Fair will be a rose show, which will be opened May 11th and continue several days. It is hoped that this opportunity will draw out as fine a display of California roses as the season will allow. To this end the society urges rose-growers in all parts of the State to take part in the show and to send their contributions, which will be carefully displayed by the committee in charge, if the exhibitors cannot personally attend. The Midwinter Fair has a most elegant place for showing flowers. It furnishes all the tables and receptacles which can be used and invites the interest and co-operation of all flower lovers. The State Floral Society will meet at 220 Sutter St. on Friday, May 4th, to make final arrangements for the show of May 11th, and all representatives of other floral societies and all individuals interested in the work will be welcomed to participate in that meeting. It is earnestly desired that knowledge may be had in advance, if possible, of all who will send roses for exhibition, and all such correspondence may be addressed to the Floral Society, in care of the PACIFIC RURAL PRESS. We hope participation in the effort may commend itself to all our flower-growing readers.

THE prospect of a very short supply of home-grown fruit at the East this summer is helping wonderfully to clean up the dried fruits which have been held for an advance in this State. Better prices are being offered and many are doing wisely to clear out the stock so that it may not stand in the way of the new crop.

Water Supply for Irrigation.

We have received from F. H. Newell, of the U. S. Geological Survey, a copy of his report on "Water Supply for Irrigation," to which allusion was made in the papers by Major J. W. Powell, Director of the Survey, which recently appeared in our columns. This work of Mr. Newell is just from the press, and conveys the results of the latest investigation as to the available water supply and the area of the arid region. It should be studied by all interested in irrigation enterprises. It is shown that up to May 31st there was to one acre of irrigated land 250 acres of land not utilized in any way except for pasturage. The report goes into the subject of avail-



MOUNT SHASTA—FROM A RECENT PHOTOGRAPH.

able water in streams, discusses the phenomena of runoff, the area of drainage basins, giving exact measurements and computations for the great interior regions where irrigation enterprises are but just beginning.

We shall be much interested in a publication which is now contemplated by the Census Office at Washington and may take the form of a bulletin on irrigation in California, Colorado, etc., regions in which most has been accomplished in this line. It seems to us that such a publication should have been advanced in the series, for certainly the lessons to be drawn from the experience of the oldest irrigation regions will be most instructive to those undertaking new enterprises. The publications of our own State and of the general Government thus far have not reached the exact statements of irrigation practice and the actual duty of water, which it seems to us are usually a the foundation of the whole matter.

THE heaviest rain that has occurred in southwest Texas for several months fell last week. Several streams which have been dry for two years are running bank full and the water holes are also full, thus affording plenty of water for live stock.

Mt. Shasta.

The approach of the outing season gives keen zest to striking portrayals of the gems of natural scenery. In this list may surely be placed the engraving upon this page, for it is strikingly clear and beautiful, creditable alike to the photographer and the engraver. It is also notable as a new view of one of our grandest mountains—quite different from the earlier portraits of this grand uplift of earth-crust which have already appeared in our columns.

Mt. Shasta has been appropriately termed the keystone of the arch formed by the great incurving mountain chains of California, the Coast Range and Sierra Nevada.

Though the great floor of the Sacramento valley terminates about on the southern boundary of Shasta county, in a foothill region half-circular in shape, there is beyond this the upper valley and its many arms with their inclosing hills and mountains, forming a country rich and picturesque, which extends northward many miles before the higher mountains close in and place the crown of eternal snow aloft on Shasta's brow, 14,440 feet above the level of the sea.

It has been frequently remarked of late that the great snow-covered mountain, through the dissemination of engravings of it reproduced from the masterpieces of the artists, has really given distant people the impression that northern California was an arctic region and central California must therefore be semi-arctic. Such conclusions are very erroneous. The towering Alps do no lead to a misconception of sunny Italy, nor should Shasta reflect a chill, even in thought, upon the genial regions which owe their winterless clime in part to the protection afforded by his massive form and by the

ranges which inarch their ridges on either side to support his pedestal. A recent writer has commented upon the majesty and beneficence of Mt. Shasta as follows:

"Of all American mountains it has the most sovereign look. It leans on no other height; it associates with no other mountain; it builds its own pedestal in the valley, and never drops its icy crown. It is a glory in itself. It seizes the clouds with icy arms and compresses them until their contents are dropped upon the thirsty fields below; from its base the Sacramento starts on its way to the ocean; despite its frowns, it is a merciful agent to mankind, and in the minds of those who see it in all its power and splendor, a picture is painted which will last as long as the gift to admire anything magnificent is left."

Of late years Mt. Shasta has been brought very near to his admirers by the overland railway which passes near him. Accessibility has also made the Shasta region popular as an outing resort. Formerly only the persistent and venturesome penetrated thither, but now the building of a great hotel and the abundance of more modest accommodations brings a hundred to Shasta where one went before. Our engraving may suggest to readers the desirability of knowing Mt. Shasta better than pictures can teach.

PACIFIC RURAL PRESS.

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ANY subscriber sending an inquiry on any subject to the RURAL PRESS, with a postage stamp, will receive a reply, either through the columns of the paper or by personal letter. The answer will be given as promptly as practicable.

ALFRED HOLMAN.....Editor
E. J. WICKSON.....Special Contributor

San Francisco, April 28, 1894.

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The Week.

During the week showers have fallen here and there, but in weight thus far have been little more than dust disturbers. After such a long drouth it takes quite a shower to penetrate the dust carpet. As we go to press on Wednesday there are better rain promises than for two months, but still not as good as we would like. April has evidently lost all ambition in this direction—as the wise knew two weeks ago when the moon held both horns up lest she should spill some water on the earth. And having failed with April, we have not much reason to place hope in May, for the records of the Weather Bureau show that the average rainfall for May for 23 years has been less than three-quarters of an inch; that though in 1883 May brought 3.52 inches of rain, in 1863 May had absolutely no rain at all. We have, then, an average too small to be of any particular account after such a drouth, and extremes from nothing to three and one-half inches—with the chances, of course, running largely toward nothing.

Evidently the fruit crop is the reliance of the State this year. It is pleasant to hear of its promised extent and of the prospect of its value. Let it be handled for all there is in it. The wages to be had from handling it will be of great assistance to many who will forsake their own dry fields this summer to help out the family income in the orchards. The large acreage in bearing now will fortunately give work to many.

At the East the signs are still for wide demand for California fruits in all shapes. It is announced that the Eastern pack of canned fruit will be very small, and the dried fruits, aside from apples, must also be of reduced amount. These facts are already making their influence felt at this distance.

HORSE-FED PORK promises to be the next Nevada delicacy. The Austin *Reveille* has a story of a rancher who is said to be killing range horses and feeding his hogs upon the carcasses. He has Indians to do the killing by shooting the horses with a rifle. The horses are very wild, but the Indian slips upon the band, and succeeding in shooting one horse down, the others throw up their heads and tails and plunge about in dismay, every few minutes going closer to the dying animal, when another is brought down, and so on, until lately one Indian killed in a few minutes one entire band of twenty-seven horses. This is a new outlet for the surplus horse supply which perhaps California breeders have not yet thought of.

Sorghums for Summer and Fall Feed.

The desirability of sorghums for summer and fall feed is especially pertinent to those who have land moist enough for a summer crop. The use of these plants has considerably increased in this State during the last ten years, and the result is that many of our dairymen who have a little moist land know just what to do to help them through the dry season. Those who have not yet grown these forage crops should not fail to try them this year. The seed is cheap and can be had from seedsmen and grain dealers. The culture is simple, being the same as for Indian corn, either in hills, if one seeks primarily the grain, or in drills if chief importance is to be given to the forage. As with Indian corn, so with the sorghums; it is best not to grow too thickly in the row if one wants leafy growth of the plant instead of preponderance of stalks, and it is also important to maintain the most thorough cultivation to retain moisture in the ground. The cutting for forage should also be done early enough to secure succulent and tender stems and to enable the plant to proceed at once with its second growth. People who allow the crop to advance too far toward maturity, unless they seek the grain, will find they have a fodder crop of which much is too woody for mastication and the plant too far gone to furnish vigorous new shoots.

Land which has had good winter cultivation will carry a crop of sorghum to profitable weight with much less winter rainfall than most other crops require. For this reason the sorghums are looked upon as *par excellence* dry land crops. This fact can also be seen in the practice of planting sorghum after a barley crop has been harvested on some of the low lands of the interior valleys. This year does not, of course, favor such double cropping, but the fact shows that the plants make a very moderate requirement of water, and therefore can be carried this year on a considerable area, though, of course, it is idle to sow sorghum in dry ground unless you can do something for it in the way of irrigation.

Low moist lands which are usually too wet for winter cropping can be made this year to yield immense weights of sorghum seed and forage if they can be plowed even as late as this date. If the grain is desired, probably the variety commonly known as Egyptian corn will give best satisfaction. This grain has been produced during the last few years in large quantities in both the Sacramento and San Joaquin valleys. In Kern county thousands of acres have been planted some years, the harvesting being done by stock turned into it, to eat both grain and fodder. There is sometimes injury reported from feeding the seed-heads to stock, but this is believed to be obviated by allowing them access to both heads and the other parts of the stems. The grain is also by other growers regularly harvested, with a yield of about 15 sacks of 130 pounds weight to the acre, and last year it was estimated that if all the Egyptian corn had been regularly harvested the aggregate would have reached 10,000 tons. Another region famous for Egyptian corn is adjacent to Yuba City, where it is also grown both for grain and forage. While Egyptian corn, or the sorghum variety with a hanging head, is the one chiefly grown for grain, Kaffir corn, which is another variety of sorghum with an upright head, is also satisfactory as a grain and forage producer. Egyptian corn requires ample heat to thrive well; in cooler situations other sorghums are more satisfactory.

If sorghum is desired chiefly for the stem and blade, as a forage crop, the varieties usually grown for syrup-making are generally most satisfactory. The chief of these is the Early Amber. It makes a very rapid growth and has a stem of high saccharine quality. There are several others which are, however, very desirable. The statement of the results of an experiment at the State University with the different sorghums, which we publish on another page, will enable our readers to see about what they may safely expect from these varieties, and how late in the fall they will supply succulent feed. There is now very little that is doubtful about these plants, for they are grown here and there all over the State, both on valley and foothill lands, and they probably return more feed for the water than anything which can be put in the ground. The chief value is the forage; the seed is valuable for chicken feed, but it is inferior to the varieties known as Egyptian and Kaffir.

Objection is sometimes made to these plants on the score of the difficulty of getting the stubble out of the ground. The plant, to stand dry soil, has to make a great mass of roots and send them down well. If it is desired to clear up the ground early in the fall or winter the stubble may be an objection; but the frost kills it utterly, and if one is not in too great a hurry to work the land, the rains will rot it down. However, one can hardly blame a plant which does what the sorghums do for taking a good hold on the soil. The farmer who gets the feed should not complain of clearing up the debris.

These sorghums are usually grown without irrigation

on land which will carry them through. They can, of course, be grown by irrigation on almost any arable soil. If the soil has moisture enough to start the seed, the irrigation will consist merely in occasional running of water in a furrow alongside the rows, following each irrigation by a good cultivation. The amount of irrigation must be determined by the behavior of the plant. So long as it grows thriftily and does not curl its leaves it is amply supplied. This is the way it usually grows on unirrigated soil, and it maintains growth and thrift where Indian corn would perish. If the soil is too dry to start the seed, there must be general flooding, followed by the plow and harrow and seed drill, or if the land has been dried out after cultivation the seed can be drilled in the dust and a little stream of water taken alongside the drill to moisten the earth. After the plants start well the furrow irrigation and cultivation just mentioned may be entered upon.

Now we would like to hear what others think of sorghum varieties, what they have done with them and how they have done it.

Cost of Grain.

Statisticians are still actively engaged in the effort to inform the farmer as to whether he can profitably grow grain at present prices. It is a singular effort, one may say, for if the farmer does not know what his crops cost him how can he get the information from statisticians? Viewed from one side the reply would be that their efforts are illusionary, but when it is remembered that any one man's experience in production may be so influenced by the personal equation or by other local conditions that the proper or true cost can only be ascertained by eliminating, so far as possible, such factors, and this is done by gathering and comparing the results of many productive efforts, and this is the work of the statistician, individual growers can gain points sometimes by comparing statisticians' generalizations with their own experiences.

It is telegraphed from Washington that the statisticians of the Agricultural Department have been grappling with the problem of raising wheat and corn at a profit. A summary has been made from the individual estimates of 25,000 practical farmers in the case of wheat and 28,000 in the case of corn. Some 4000 experts have also given the result of preservations. The conclusion reached by the department is that with wheat selling at 57 cents and corn 36 cents a bushel in Chicago, a rotation of crops rather than a persistence in exclusive wheat-growing would be more profitable to farmers. This conclusion may be of some account east of the mountains, but it is of no earthly use here, for our wheat lands will not grow corn in rotation or in any other way.

The result of all the comparisons mentioned above is that the cost of raising wheat per acre is estimated at \$11.69 and corn \$11.71. In each instance the rent of the land is the heaviest item, wheat being \$8.81 and for corn \$3.03. In the report for December last the average farm value of wheat is placed at \$6.16 per acre and of corn \$8.21. It must be remembered, however, that besides the production of the wheat, the farmer has the straw of wheat and the stalk of corn, which in some sections of the country have a feeding value of \$5 per acre, and while the cost of production was normal, the price of both wheat and corn in the December estimate was far below the average. This indicates something of the hard time our grain-growers have had when even by counting a high value to straw the acre-value only can be made to reach the acre-cost. In California the straw value is almost nothing. Nothing but our lessened cost of production by machinery, and in some cases our increased product, have saved us from making as bad a balance sheet as do the grain-growers of the prairies.

In Illinois the estimate of wheat cost of production is \$11.45 per acre, and of corn \$11.46. In Iowa wheat is placed at \$9.74, corn at \$9.92. In Wisconsin wheat is \$12.93 and corn \$15.53. Indiana, wheat \$12.39; corn \$12.95. The general average of the Western States is \$10.79 per acre for wheat and \$11.08 for corn. The report seems to have no California figures on cost of wheat. If the statisticians' results do not agree better than the estimates of our largest producers, it is no wonder that they threw them all out.

OVER 125,000 sheep are near Thompson Springs, Utah, enroute East through Colorado. The settlers of western Colorado are arming, and say they will not permit this great flock to enter the State.

ANTI-THISTLE bills do not find favor in Washington, and the bill to appropriate \$1,000,000 for their extermination has been reported adversely on by the House committee on agriculture.

From an Independent Standpoint.

The Coxe movement has assumed a new and vastly more serious aspect within the past week. The near approach of the original division to the National Capital, the steady progress eastward of the several other columns, their marked growth in numbers, the sympathy manifested almost everywhere by the industrial classes; these are circumstances too significant of motive, of vitality and of portent to the established order of things to be lightly dismissed. Most important of all is the fact made evident by the events of the week that the heart of the wage-working classes is with the movement. At Omaha, four thousand mechanics with their wives and children gave the crusaders an ovation, contributed food and money for their comfort, and loudly condemned the authorities when an attempt was made to enforce against them the ordinary police regulations. When the railroads refused to carry the army further, the Iowa farmers freely contributed the service of a hundred wagons and teams to help them along. In Southern Pennsylvania and Western Maryland, the Coxe column met with similar kindness; and at Sacramento, in this State, on Monday the mechanics in the railroad shops gave a considerable sum of money to feed the Stockton contingent, and by formal resolutions roundly criticized the local authorities for not making provision for the stranded wayfarers. At Denver and elsewhere the Knights of Labor have demonstrated their sympathy by resolutions and by gifts of provisions and money, these expressions coming in several instances from places away from the lines of march, and therefore independent of that mere emotional pity which often springs from personal contact with distress or enthusiasm, and which has no deeper motive.

In one sense the movement is a success, for it has overcome obstacles which seemed impregnable, and in doing so has gained in numbers and in consideration. Absurd, grotesque, unspeakably foolish though the march to Washington be, it bears somehow the character of a protest against the prevailing social and industrial order of things, and this is the motive back of the sympathetic demonstrations at Omaha and elsewhere. We do not have to look far to see why the "masses" are not satisfied. They see and feel the inequalities of our social and industrial system. They see one judgment for the poor and another for the rich. They see property no longer guarding and upholding the standards of civilization, but as a corrupt and corrupting social force. They see those who juggle with the game of business grow fat while the producers grow lean. They see dishonorable wealth exalted and honest poverty debased. They find it increasingly harder to earn a living, and yet they see superfluous wealth multiplying and its possessors growing in pride and insolence. They have lost confidence in human sympathy and even in religion as a righter of wrongs. And in reasonless passion they give their heart and their alms to the first movement, no matter how whimsical or how absurd, which voices a protest against this crowding mass of injustice. Talk with the mechanics who gave comfort and support to the "army" at Sacramento and Omaha, and they will admit the folly of "General" Kelly's plans; but nevertheless they will give again. The motive is deeper than logic; it is the very spirit of social discontent; and therein lies its force and its menace. A forlorn and ragged brigade of unarmed men is not to be feared; but a dissatisfied people is very much to be feared.

Popular discontent, especially in a self-governing country, means evolution or—revolution. It need not involve bloodshed, for the world is wiser than it used to be and the machinery of modern society provides ways of change simpler than warfare and equally effective. In our country the ballot will do what the sword did in other times in other lands. The classes upon whom the inequalities of the times bear heavily are in the majority, and in the end they must control. That they should do so is in line with the modern social spirit the world over; it is inherent in the system of government by the people. The conditions which have brought the industrial army into existence, and which raise up friends for it wherever it goes, must be superseded by conditions more in line with natural justice and with human equality. The avenues by which shrewd men contrive to get between the public and things of public necessity must be closed. In other words, sharpers must not be allowed to grow rich at the cost of the industrious. Shrewd or lucky men must not be allowed to divert to private advantage values that have been created by the public and which in equity belong to the public. Interests which dominate the welfare of communities must not be trusted to the selfishness or the caprice of unlimited private control. The railroad companies must not be allowed to make our transportation laws, the express companies must not fix the rates of postage, the trusts

must not arrange our tariffs, private interests must not name our public men. This programme involves something of a change; but does any rational man doubt that the change will come? It must come or the race will go backward.

Indeed, the process of evolution has already begun. The organization of labor was one of its first signs in this country. The successive political "landslides" in 1884, in 1888, and in 1892 were blind efforts in the general movement. The Farmers' Alliance and the Populist uprising is another step toward social and industrial revolution. The movement was well under way when the period of hard times came, and it has wonderfully accelerated its progress. And now, as a development of special conditions, we have in the industrial legions marching through the land a bolder and more extravagant manifestation of the same spirit. In spite of its form, it is identical in impulse and in motive with the other manifestations named; like them it is developed from a basis of popular dissatisfaction with existing social conditions. It is not unusual that the spirit of reform should manifest itself in these absurd ways. From the beginning of civilization the first movements toward revolution have proceeded from the base of the social pyramid. It is the enthusiast, or—in modern phrase—the crank, who always starts the wheels of reform; and it must always be so, for it is in the nature of things that the established and prosperous classes should seek to conserve and perpetuate the conditions in which their own good fortunes are bound up. The Coxe movement is in itself nothing, and it will come to nothing; but it must not be despised in the sense of being disregarded, for it is a protest against things present and a sign of things to come, and as such it vastly and profoundly concerns all the people of the United States.

But it is the immediate problem which just now destroys peace of mind at Washington. Within four days Coxe will be there and unless something is done to divert the march of the Frye and Kelly columns, the District will soon be filled with hungry and penniless men. President Cleveland is said to be very much annoyed at the prospect; and after conference with him the District Commissioners have issued a proclamation designed to stay the army in its course. It recites the facts concerning the approach of the Commonwealers, and, with this as a text, declares that "the constitutional right of petition does not justify methods dangerous to good order." It points out that the District has already a considerable burden in the form of unemployed population; that there are no means of providing for newcomers, and earnestly appeals to the Coxeyites to stay away. After pointing out that "no good can possibly come from such a gathering," the Commissioners add:

No wrong can be righted, no condition of labor ameliorated, no remedy for existing evils realized by the contemplated demonstration of physical force. Every desirable end can be more certainly and effectively accomplished by ordinary and lawful methods. The Commissioners, while in entire sympathy with all people out of employment, and having no desire or purpose to deal harshly with all honest men who seek relief by reasonable and lawful means, are in duty bound to give notice to those who are tempted under any pretext to swell the number of unemployed persons already here, that there is neither work for them nor means for their maintenance in the District; that the law does not permit the soliciting of alms in our streets, and forbids parades, assemblages or orations in the Capitol grounds and the obstruction of any public grounds, streets, highways or avenues and the approaches to public or private buildings. The Commissioners give notice also that the criminals and evil doers, who, under cover of a crowd of unemployed men in our streets, may come for the purpose of crime and disorder—that all such will be apprehended and summarily dealt with. And finally they give notice to all that come here against their advice and protest that the laws in force in the District of Columbia are adequate for every emergency and will be rigidly enforced.

While this proclamation is signed by the District Commissioners, it is understood to have been inspired by the President and is of interest as showing his attitude toward the movement. When Coxe read the proclamation he laughed contemptuously and declared that himself and his men were law-abiding citizens; that they had a perfect right to visit the Capital, and that they should not be stopped by proclamations. It is not doubted that they will march into the city; and since they are destitute, somebody will have to provide them with food and shelter, for it is not thinkable that they will be allowed to starve or perish from exposure, or that they will passively submit to such straits. The proclamation will accomplish nothing and it only goes to show the deep concern felt by the authorities at Washington. Time and time alone can solve the problem. It looks, however, as if Congress, in common humanity, would have to make some provision for its strange petitioners.

It is in the course of things that such a social movement as the march of the industrials and the conditions out of which it has grown should have a profound influence upon current politics; and it is equally in the course of things that it should bear unfavorably upon the

fortunes of the party presently in authority. It is human nature to blame the disaster upon the man at the helm; and in consequence of this tendency the Democratic party is suffering in public esteem. This is the meaning of the unbroken series of local Republican successes in all parts of the country since the special session of Congress last year. The times are against the party in power; and those of its own members who have the courage to say what they really think admit that the Democratic landslide of 1892 is bound to be matched by a Republican landslide in the elections of 1894. Nobody who is candid with himself doubts that the Congress to be elected this coming November will be overwhelmingly Republican. It is inevitable that it should be so, for in times like these the public always seeks a change.

If the party is to be saved from absolute disaster—that is, from such a defeat as will make recovery impossible in time for the next Presidential campaign—it must be by a quick change of policy. Senator Hill of New York, whose political eye is exceptionally keen and always wide open, sees this clearly. He sees the public dissatisfaction with President Cleveland's financial policy; he sees dissatisfaction within the party, growing out of certain appointments to office, notably that of Mr. Gresham; he sees the unpopularity of the Wilson tariff scheme; he recognizes to some extent the significance of the Coxe movement as it affects party politics; and with the wit of large political sagacity he is trying to put himself at the head of an anti-administration movement within the party. The significance of his recent speech—quoted in the *RURAL* two weeks ago—lay in its relation to these considerations. As a statement of Mr. Hill's views upon public questions it had small importance, because Mr. Hill's views are worthless; but as a political sign of the times it was a matter of large consequence. It has been so taken by the public and thus marks a revolt within the Democratic party against the President whom its votes placed in authority less than two years ago. One of the leading questions of current politics is, Will this revolt have strength enough to dominate the party and to protect it from the consequences of Mr. Cleveland's mistakes?

It looks to the *RURAL* as if the scheme of tariff reform on the lines laid down by Mr. Wilson in his famous bill, were slowly dying. The aggressive spirit by which the bill was carried through the House, and in which it was presented to the Senate, has somehow been lost. Although it was given up for six weeks to the Democratic caucus and largely modified to meet Democratic objections, it is still far from satisfactory to the party. And the fact that objection to the measure within the party is nominally secret does not limit its force. This is why languid methods of support have superseded the hot spirit in which it was introduced.

The bill has yet to go through the process of reading section by section for amendment; and from all the signs it seems to the *RURAL* practically certain that before the end it will be modified beyond resemblance to its original—recast on lines very different from those laid down by Mr. Wilson. From the beginning we have not believed, and still we do not believe, that the Senate of the United States will enact a law whose plain and manifest effect will be to give the death-blow to our paralyzed industry and make hardship and poverty universal.

Grapes and Wine.

Well-known viticulturists tell the *Examiner* reporters doleful stories of the wine outlook both in vineyard and market.

"There is no question that the yield of the vineyards this year will be seriously affected by the recent dry weather and strong winds," said Secretary Winfield Scott of the Viticultural Commission. "In some sections of the counties around the bay, which are the principal dry wine producing districts of the State, it is impossible to plow the vineyards. The dry season came on so unexpectedly that those who usually plow late find it out of the question to cultivate the soil. This certainly indicates a short yield."

"Especially is this true of Sonoma county. I. de Turk, who is Viticultural Commissioner for the Sonoma district, reports that not more than half of the vineyards of the county have been worked; nor can they be unless there be some rain. Small berries and a short yield are the accompaniments of this condition of affairs."

"Commissioner H. W. Crabb of the Napa district says that the vineyards of the Napa valley are in better condition as regards plowing, but in recent years the progress of the destruction of vineyards by phylloxera has been so steady that the total yield of the valley cannot approach what it has been in late years. There has been next to no planting of new vineyards or replanting of old ones last season."

ALAMEDA AND SANTA CLARA.

"As regards Alameda county, the condition of the vines is fair. In the district about Mission San Jose the vines look fairly well, but in the Livermore valley Clarence J. Wetmore says that cultivation in many vineyards is insufficient, shortening the crop. There has also been some

frost in the valley, affecting the vines in the low-lying vineyards.

"Santa Clara is now the county which produces the largest quantity of wine. Complaints of dry weather and insufficient working of vineyards are heard in that section. Henry A. Brainard of San Jose, who has been making a thorough canvass of the vineyards of the county, is authority for the statement that the phylloxera is now widely spread in the county and that the effects are beginning to be plainly apparent."

A CHANCE FOR HUNTINGTON.

"There are three remedies for the situation," said Chas. A. Wetmore—"reduction of the product, combination of the growers and the dealers, or putting more capital and new blood into the business. The last is the only one worth considering; and as far as I can see, C. P. Huntington is the only man to grasp and master the situation. I would have him organize a company with large capital, then establish warehouses in the vicinity of New York to which California wine could be shipped, there to be blended and matured or placed on storage and where Eastern dealers could make their purchases. I would have a distillery plant in the State for the manufacture of brandy from inferior grapes and wines which it would not pay to send East. More than this, I would have two cheap depots on the lines of Mr. Huntington's roads. I would have one located at Fort Yuma for sherry wines which must undergo a period of high temperature, and another at Truckee for those which demand a cold regime. Neither of these would be expensive and both would come in good play in connection with the great warehouses near New York."

"Apart from the profits directly arising from the venture, it would furnish large transportation to the railroads, and what local transportation from the vineyards to San Francisco might be lost would be more than made up by the increased prosperity of the vineyards. Such a company as that which I have outlined would have the capital to purchase at the lowest rates and the money to advance for coöperation, transportation, etc. It would prove profitable to the corporation and would relieve the producers from the straits in which they now find themselves."

"Overproduction is the trouble," said Mr. C. Carpy, who is essentially a wine dealer. "Root out about one-third of the vineyards and compel Americans to drink California wine. The phylloxera is helping to the end in view, but is not going quick enough. People of means are planting resistant vines and grafting on them fine varieties of grapes. The result will be a better class of wine and less production. Of the drought it is too soon to speak. Producers are getting from 8 to 10 cents a gallon for their wines, and if that continues it will mean bankruptcy for them. The merchants do not want to ruin them, but are compelled to follow the tide. Trade with the Spanish-American countries is increasing, but that will not remedy the situation. We are laying California wine down in New Orleans at 23½ cents a gallon, of which 7½ cents is freight. That price pays neither the viticulturist nor the dealer. What we need is to educate 65,000,000 people to drink 20,000,000 gallons of California wine, and until that be done we must diminish our production."

Crop Condition and Outlook.

Reports from Nearly All Counties.

Following is a synopsis of the crop bulletin for the past week received by Director Barwick, of the State Weather Service, from voluntary observers:

The average temperature during the week ending April 23d was: For San Francisco, 54; Eureka, 64; Red Bluff, 64; Sacramento, 63; Fresno, 66; Los Angeles, 62; and San Diego, 58. As compared with the normal temperatures, there was a deficiency of heat at San Francisco of 2° and at San Diego of 1°, while an excess of heat over the normal was reported at Eureka of 7°; Red Bluff, 3°; Sacramento, 3°; Fresno, 3°; and Los Angeles, 1°. This excess of heat over the Sacramento and San Joaquin valleys, along with the continuous drying northerly winds and lack of rain, has very much intensified the need of moisture, and all cereal crops, pasturage and hay are rapidly reaching that point from which recuperation is impossible, except to a few favorable spots in the Sacramento valley. During the early part of the week light frosts were reported over the greater portion of the State. North of the Tehachapi range of mountains but little damage has occurred to the fruits, prospects of which are extremely good. The cherry crop is reported to be the largest in many years. This extremely unusual dry spell continues, and bakes the ground so hard that summer fallowing had to be abandoned, as also the cultivation of vineyards and orchards, all of which suffer to some extent thereby. The outlook is certainly very serious for the grain and hay crop and the pasturage, which has caused a great portion of the State to look more like the condition of August, rather than April. The highest and lowest temperatures were 102° at Tulare and 26° at Ager, Siskiyou county. The slight rainfall along the coast on Sunday did no good, as it was too small in amount.

LASSEN (Susanville)—Weather everything that could be desired. Highest and lowest temperatures, 74 and 32 deg., with occasional ice and frost. Trees blooming freely. Winter grain shows up well on high ground.

SISKIYOU (Ager)—Fall-sown grain still looking well. Rain, however would be beneficial. Spring-sown crops, including garden truck, must have rain very soon. Highest and lowest temperatures, 86 and 26 deg.

SHASTA (Burney Valley)—If rain does not come soon the grain crop will be rather short. (Anderson)—The drought still continues, and farmers getting uneasy, for rain is very badly needed. Showers on the mountains during the 22d and windstorms from the south. Fruit looking well but grain will be short. Highest and lowest temperatures, 86 and 49 deg.

BUTTE (Chico)—Crops look well, but rain badly needed for plowing, etc. Apparently so far there is little suffering from the dry weather and northerly winds, although rain will do all crops good. (Gridley)—Outlook still good for all cereal crops. Fruits doing well. Highest and lowest temperatures 90 and 48 deg. (Palermo)—Fruit crop very promising owing to facilities for irrigation. Most of the farmers have already begun at least a month earlier than usual. The

grain crop looks well except on very dry land. All, however, need rain, and unless it comes soon the crops will be below the average. Highest and lowest temperatures, 89 and 25 deg.

GLENN (Willows)—Barley heading and on good land will make a fair crop. Wheat on summer-fallowed land is still looking well. Volunteer and grain on second-grade land is about gone. Winter-sown will be benefited greatly by rain. Fruit so far is doing well.

SUTTER (Yuba City)—Grain is showing decidedly bad effects from the drought. Without rain this county cannot expect more than one-third of a crop. Much winter-sown will be an absolute failure. Summer-fallow is turning yellow in places. Adobe lands look worse than best sandy soil. Some hay will be cut next week. Crop very light. Fruit prospects excellent so far. Early potatoes very short. Feed on hills nearly all dried up, and therefore will not be as good as usual. (West Butte)—Grain is doing fairly well. Highest and lowest temperatures, 84 and 43 deg.

LAKE (Upper Lake)—Hay and grain beginning to head out and the yield will be short. Unless rain comes very soon it will do little if any good. Orchards and vineyards that were plowed early are in good order and vines are looking quite well, but trees are not making the growth they ought to. Highest and lowest temperatures, 83 and 34 deg.

YUBA (Wheatland)—The prevailing dry northerly winds will not noticeably affect the hop crop. Old yards are coming out in splendid order. New plantings are checked somewhat by the north winds.

YOLO (Winters)—The effect of the drought is getting more apparent each day. Winter-sown grain is suffering badly, as is also the vegetable crop. A good rain would save the latter if it were to come at once. Highest and lowest temperatures, 85 and 52 degrees. (Cacheville)—Vineyardists and fruit-growers are complaining of the army worms, which are causing much destruction. (Grafton)—Potato crop promises a good one. Corn being planted. (Dunnigan)—Prospects good for a large grape crop. Those vineyards cultivated early and often are in excellent condition, with plenty of moisture close to the surface. (Blacks)—On some low lands, with soil wet at only a few inches from the surface, barley is heading out and only a few inches high.

PLACER (Newcastle)—Orchards need rain badly to soften the ground sufficiently for thorough cultivation. Fruit trees are generally well set with fruit, especially the peach trees. Cherries promise a fair crop. Highest and lowest temperatures, 86 and 36 deg.

EL DORADO (Cool)—The northerly winds are drying up the pastures. Early-sown grain looking well so far, but with one inch of rain inside of eight or ten days will turn off fair crops. Late-sown grain not worth cutting. The outlook for fruit is good; all is well set, and with careful irrigation a good crop will be assured, especially Bartlett pears. No rain since March 18th. Highest and lowest temperatures, 81 and 40 deg.

SOLANO (Denverton)—The drought has stopped all summer-fallow plowing, with but few farmers more than half done. From present appearances the hay and grain crop will be a failure. On the western border of the county fruit crops are quite promising. (Vacaville)—Peaches, pears and apricots are a good crop. Prunes, plums and cherries light. Hay and grain suffering from the effects of the north winds and dry weather. An early rain will still do much to improve the hay crop.

SACRAMENTO—The grain crop has suffered from the dry north winds and will be almost a failure. The hay crop would be quite good with a few showers of rain soon. The fruit crop will be a heavy one on river lands, especially Bartlett pears, which are looking fine.

SONOMA (Forestville)—Grain looking well. Feed is drying up. Crop prospects good, provided the ground will retain moisture enough to mature the fruit, which is doubtful for some varieties, on account of not receiving good cultivation. Hop men complain of the continued dry spell, and unless rain comes soon many hop roots in newly-planted yards will not amount to anything this season. Most of the orchards in this vicinity have only been partly plowed, but heavy crops are indicated. Highest and lowest temperatures, 86 and 38 deg. (Cloverdale)—Crops need rain but are still keeping a good color. Fruit trees and vines are looking well. If no rain comes within eight or ten days the grain yield will be only half a crop. Highest and lowest temperatures, 87 and 42 deg. (Sonoma)—Although rain is needed, good reports are heard from the greater portion of the valley both for grain and fruit. The early-sown grain is looking well. For the hay crop a good rainfall is needed, which would also be very beneficial to all upland pastures. (Petaluma)—The outlook is good for a large fruit yield in this vicinity.

MENDOCINO (Covelo)—Crops have not suffered to any great extent as yet. If rain comes in ten days, crops will be good. On the nights of April 14th and 15th hard frosts killed half of the peaches and about one-fourth of the apples, pears and plums. (Ukiah)—Rain is much needed for crops and all vegetation. Highest and lowest temperatures, 85 and 32 deg.

AMADOR (Oleta)—Quite a frost early in the week, but no damage done to fruits or vegetables. Summer-fallowed grain a good color, but needs rain to make a full crop. Winter-sown grain a good color, but without rain will be a failure. Highest and lowest temperatures, 80 and 36 deg.

SANTA CLARA (San Jose)—Weather dry. Frosts Monday, Tuesday and Wednesday. It is reported that apricots and peaches have been injured by these frosts, but if so the damage must be slight. Highest and lowest temperatures 85 and 29 deg. (Santa Clara)—The frosty mornings during the early portion of the week have caused many contradictory reports to be circulated from our surrounding orchards as to the effect on the fruit crop, but investigation shows that they are practically uninjured. In some places along the creeks, or where trees have been extensively irrigated, the blossoms on the north sides of the trees have been injured to a slight degree, but no damage has been done to trees situated in other localities. Even in these cases no material damage has been done, and what few blossoms have been injured will make the remaining fruit larger and of a better quality.

SAN JOAQUIN (Acampo)—Grain still holds its healthy appearance, and with rain shortly there would be a fair crop. Very little wind during the week. Fruit orchards in excellent shape, and prospects good for a large yield. The hot days have had no bad effects on grain or fruit, as the nights are cool, with heavy dews. (Lodi)—Grain growing slowly but not promising much. Grapes look well, with an abundance of buds. The light frost of the 17th did no damage. Some alfalfa being cut; the crop will be a fair one, while other varieties of hay will be very short. Highest and lowest temperatures, 87 and 37 deg. (Bethany)—Calm, hot and sultry weather has prevailed. There will be but little grain harvested here and about hay enough for home consumption. A great deal of the grain fields will be used for pasturage.

MARIPOSA (Mariposa)—Grass is drying up in the lower foothills. Crops look tolerably fair but need rain. Frost on April 16, but did no damage. Highest and lowest temperatures, 79 and 37 deg.

STANISLAUS (Turlock)—The absence of severe winds has been advantageous to the grain. Rye will make a light crop if no more rain falls, but wheat will not. Highest and lowest temperatures, 91 and 37 deg.

MERCED (Los Banos)—North winds and lack of moisture have been the feature of the week, but fruit, vegetables and alfalfa are doing well. The grain crop will be a very light one along the foothills and on the plains where there is no irrigation. Highest temperature, 88 deg.

KINGS (Hanford)—Highest and lowest temperatures, 90 and 36 deg.

FRESNO (Fresno)—Unless rain comes in next ten days crops will probably be a failure. Should there be a good rain by May 1st there will be about half a crop. Highest and lowest temperatures, 92 and 39 deg. Frost on the 16th slightly injured grapes and drought injured the growing grain. (Fowler)—There will be but few fields of grain harvested in this vicinity unless rain comes at once. Light frosts the first part of the week damaged a few young vineyards, while the cut worms are damaging many vineyards. The prospects for a large fruit crop were never better. (Reedley)—A little rain

would save us yet. The cut worms are devastating the vines west of Kings river. Frost on the 15th killed some vines in isolated places. Apricots doing well, as also are other fruits. Alfalfa under irrigation is fine. All irrigation districts report plenty of water. (Easton)—The wheat is not yet dead and with plenty of rain would yet make a light crop. The frosts of the 17th and 18th did no damage in this locality, but the cut worms are doing serious damage to vineyards. Many show no more leaves than they did in February. Alfalfa hay is being cut and is the cleanest first crop for 12 years. As the season advances apricots show to better advantage, and a good crop is looked for. Peaches are doing well. Blackberries in blossom. Malaga vines are not blossoming well.

MADERA (Madera)—Early grain will not yield more than feed and seed. Late grain with rain soon would make half a crop. Irrigated crops look well. Fruit prospects continue good. Grapes so far have escaped frosts and a good yield is looked for.

TULARE (Tulare)—No wheat or barley crop on account of drought, except where irrigated. Fruit and grape prospects good so far, but are later than last season on account of the dry and severe winter. Light frost, but no damage done. Highest and lowest temperatures, 102 and 34 deg. (Visalia)—Fruit doing well. Barley will make hay or feed, which is the only grain that is doing anything. The country looks more like August than April. Highest and lowest temperatures, 88 and 37 deg. (Porterville)—Wheat on plains a total failure, while on the bottom lands there are some good pieces. There will be a good crop of peaches, plums and apricots. All vineyards and orchards are being irrigated and are looking well. Orange and lemon trees in bloom. Highest and lowest temperatures, 90 and 40 deg.

KERN (Tehachapi)—Heavy north winds damaged peach trees where they were exposed. The cereal crops are coming on nicely, yet rain is or will be needed in a few days. If rain holds off, and north winds continue, crops will begin to suffer. Highest and lowest temperatures, 81 and 26 deg.; with a trace of rain in the west. (Rosamond)—Ground drying out very fast and hay and grain will be very short, as it is too late in the season to expect much, if any, rain here. Fruit trees and vines are doing well and present appearances indicate a good crop. Highest and lowest temperatures, 90 and 55 deg.

SAN BENITO (Hollister)—Present indications look well for a large fruit yield. Frosts in the forepart of the week did some damage to walnuts, but not enough to warrant apprehension.

SAN LUIS OBISPO (Arroyo Grande)—Barley heading in some places and drying up in others. In the bottom lands and on the sandy mesa near the coast there will be a pretty fair hay crop, judging from present indications. On loam or adobe upland the crop will be very small even if it should rain within a week. Fruit still promises well. Highest and lowest temperatures, 78 and 30 deg. (San Luis Obispo)—Early barley on good lands will make grain; other crops will make hay; strawberries ripening. Prunes look well. Other fruits are doing fairly well. Pasture in most districts very poor. A bean crop can only be had on good bottom land. Highest temperature, 88 deg.

VENTURA (Hueneme)—The farmers are planting beans. SANTA BARBARA (Santa Barbara)—A rain within the next few weeks would do untold good to late barley and other crops, while the outlook is not so bad as some people think.

LOS ANGELES (Neenach)—High northerly winds and continued drought have caused the crops to suffer considerably; and, unless it rains within ten days, there will be little or nothing to harvest in the valley. Rainfall to date, 4.83 inches, as against 10.74 inches to same date last year. Highest and lowest temperatures during the past week, 84 and 35 deg. (Los Angeles)—Weather clear and very warm for the season. The prospect for a grain crop is rapidly vanishing, except some fields on moist lands. The outlook for deciduous fruits continues most favorable. (Pasadena)—The high winds and hot spell did considerable damage to what grain was still in fair condition. The crop will be very poor. Deciduous fruits in fine shape. Apricots a big crop. Oranges blooming heavily. Highest and lowest temperatures 94 and 38. (Pomona)—Weather still dry and warm. Late-sown grain making a hard effort to head out. Dry land beet crop bids fair to be a total failure. Beets are making a poor stand, some having been planted the third time. Highest and lowest temperatures, 94 and 39 deg.

SAN BERNARDINO (Redlands)—The slight rain during the week (.09 of an inch on the 16th) improved the outlook for hay and grain, increasing in importance with altitude, the rainfall in the higher valleys reaching about an inch. Apricots and peaches are looking fine. Vines of the raisin grape are full of health and vigor.

RIVERSIDE (Arlington Heights)—The warm temperature has helped everything to make a rapid growth. The orange and lemon trees are doing very well. The weather has had no effect upon the hay and grain crops, as nothing but a soaking rain would alter their condition. Highest and lowest temperatures, 90 and 38 deg.

SAN DIEGO—Weather very dry, with extremely low humidity on the 19th and 20th. Owing to the dry northwest winds grain and hay are looking badly and rain will not benefit them much. Crop prospects very discouraging. Fruit outlook good; none dropping, but will have to be thinned out as trees cannot carry such loads, owing to want of rain. Highest and lowest temperatures, 83 and 46 deg. (San Jacinto)—The extremely early-sown grain is now too far gone for even a foot of rain to bring it to life.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, April 25, 1894, are from official sources, and are furnished by the U. S. Weather Bureau expressly for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total rainfall for the week.....	Total seasonal rainfall to date.....	Total seasonal rainfall last year to same date.....	Average seasonal rainfall to date.....	Maximum temperature for the week.....	Minimum temperature for the week.....
Yuma.....	.....	2.16	1.86	3.16	98	52
San Diego.....	.04	4.80	9.07	9.48	82	46
Los Angeles.....	.06	6.46	26.19	17.93	86	46
Fresno.....	.01	6.18	11.10	8.58	72	46
Sacramento.....	.....	13.85	22.86	18.99	50	42
San Francisco.....	.01	16.11	21.57	23.73	82	86
Red Bluff.....	.....	19.16	31.57	22.46	80	42
Eureka.....	.05	51.04	46.23	42.24	64	44

It is announced that 250 carloads of machinery and material have been ordered by the Ohio Valley Beet Sugar Company. When contemplated improvements are completed the value of the plant in this place will closely approximate \$1,000,000. The company is at present employing 125 men. Most of the new machinery is of American make.

THE DAIRY.

Progress and Future of Dairying Interests in California.

By E. W. Steele of San Luis Obispo County, at the Grange Congress at the Midwinter Fair.

Within the memory of many now living, dairying was first started in California in the most primitive manner. It was primitive as to the cows used, methods, tools and buildings, as well as in the experience of those engaged in it. When California first came under the United States Government there were great herds of Spanish cattle, in some instances numbering many thousand head, roaming over the immense grants of the Spanish grandees and of some other grant holders, mostly English or American. But it was very rarely that any cows were milked, even for home use. Occasionally a wild cow was lassoed and staked near the hacienda, with her calf near her.

In 1856, when I came into the State, it was not usual to see butter, or milk for tea and coffee on these large cattle ranches. Beef, bacon, bread, potatoes and beans, with tea or coffee without milk, was the usual diet. But as the country began to fill up with miners and those who were here to deal with the miners, and as customers began to multiply, the primitive conditions began to be changed. With the accumulations of wealth the advent of women and the era of home building there sprang up a demand for better butter and cheese than could be obtained from the Eastern States or South America.

At that time, as compared with the present, dairying in the East was in its infancy, and dairy products, under the deteriorating influences of long sea voyages and tropical climate, arrived here in bad condition. Such productions would not sell now in this market at the price which oleomargarine and filled cheese command. The commencement of dairying in California was therefore hailed with delight by all classes. Money was plentiful and good butter readily sold for from \$1 to \$1.50, and cheese for 40 cents per pound.

In sketching the early history of California dairying, I know of no better way than to give some facts in the early history of our firm, "Steele Bros.," for as it was with us, so was it with the dairy interest generally, in those times. As late as the year 1858, Steele Bros. were selling butter at \$1 per pound and cheese at 40 cents. During the winter months and in summer, butter commanded 50 cents and cheese 27 to 30 cents. In 1857 we rented a league of the very best of virgin pasture land on Point Reyes for \$25 per month, and paid our help about \$30 per month, occasionally \$35 to an extra and very reliable man, and \$40 to the kind of cheese-maker to be had at that time—usually some man that made cheese on about the 49th hearsay from some Herkimer county, N. Y., cheese-maker.

We used to make a pound of cheese from eight pounds of milk and sometimes even less. This cheese was sent almost daily from the press to market and immediately sold. It went to the consumer before it had time to leak or spoil. Even the cheese made from milk set one milking for 24 hours and one milking 12 hours, then skimmed, the cream churned and the buttermilk put in and made into cheese, sold in early months in 1858 for 27 and 28 cents per pound and the butter for \$1 per pound. At this time, when every member of the firm were hands in the corral and cheese-house, we more than paid our hired help with the cheese made from buttermilk, although we were milking 150 cows at that time.

The high prices which beef commanded during the gold excitement and rush of immigration into the State caused hundreds of thousands of cattle to be driven across the plains from the Western States and Texas; those from the Western States were called American and those from Texas, Texas cattle. From this stock of American cattle, cows were selected for the dairy. Such as would give down their milk were milked without their calves, but quite a large per cent had to have their calves before they would give their milk, as, when milked at all, they had been broken in that way. The principal object of the pioneer dairymen, who came largely from Missouri, was to raise the calves to be grown into cattle on the then free ranges. And they went into partnership with the calves, letting them take a part of the milk during the flush of the season, and turning cows and calves out together as the natural pasturage dried up. Every possible calf was raised by both dairymen and stockmen. This natural increase, with the cattle driven across the plains, soon filled the country with a better class of cattle and those were utilized in the dairy. Under the stimulus of quick sales and high prices and plenty of cows, at constantly decreasing prices, dairying rapidly increased until the free, or comparatively free, pasturage was exhausted in the counties around the Bay of San Francisco, which was the principal seat of dairying, and the open country was settled up by homesteaders and squatters. In those times it was not thought possible to do anything on 160 acres of land in cattle-raising or dairying, and the temporarily-in-the-business dairymen, the partnership-with-their-calves dairymen and the men dairying on Government land became overstocked and hemmed in, and the price of their cattle became so reduced that they were compelled to sell them for what they could get and take to farming and other pursuits, and this while dairy productions were selling at remunerative prices—cheese at about 15 cents per pound and butter at 38 cents, in the flush of the season.

In the autumn of 1862 and 1863 our firm bought in Sonoma and Marin counties 1300 head of cows, to stock a grant which we had rented at Pescadero, at that time in Santa Cruz county, now in San Mateo county, and delivered them on that ranch at an average cost of \$10 per head. This was the beginning of the dairying interest in the coun-

ties south of San Francisco, save in Santa Clara county, where some dairies had been established. A good four-year-old beef steer was only worth \$10.

In 1863 we thought dairy productions had reached the very lowest remunerative prices, to-wit: 13 cents for cheese and 30 cents per pound for butter. In 1864 came the great drought, and in the counties south of San Francisco a very large percentage of the cattle starved to death; ranches having thousands of head of cattle only saved a few hundred. In San Luis Obispo only about 200 head were saved out of 8000. Up to this time raising cattle was the principal industry in the southern counties. It was not thought that forming could be made to pay there on account of the distance from market and the frequent occurrence of dry seasons. The dry season of 1864 confirmed this impression. The grant holders had no means left and were discouraged, did not know how they could pay even taxes, and in San Luis Obispo and Santa Barbara counties offered their land for sale. Some ranches were actually sold at 25 and 50 cents per acre. This attracted the attention of the dairymen in the counties where there had been a good season, and where the great drought had been a benefit to them, by re-establishing old prices for dairy productions. The large dairies began to go into Monterey, San Luis Obispo and Santa Barbara counties; dairymen began to lease and buy large tracts of land, move their cows onto the land so obtained, raise every heifer calf and break them into the dairy, and in consequence the business rapidly extended south and into the interior.

Large dairymen increased holdings of land and cows, and paid more attention to the quality of their productions. In 1865 large dairies were moved from Point Reyes into Salinas valley and about Monterey, and the number of cows increased in every possible way. Land was rented for a term of years, at about \$300 per league, or purchased, or with the privilege of purchase within from three to five years at about \$5000 per league. In 1866 our firm bought and leased, with the right of purchase, 45,000 acres of land on about these terms, and moved our Point Reyes cows onto it, and increased our dairy cows by every possible means. As we did, so did other dairymen, until the State was full of cows again, from north to south and west to east. Still, for a time, the California dairymen practically had a monopoly of the dairy productions on this coast, and prices were remunerative for many years. In March, 1867, we sold our beef at San Luis Obispo for \$50 per head, and were offered in the autumn of 1866 \$50 per head for our Point Reyes cows.

In the few years following this dairying reached high-water marks. Cheese sold during these years at from 14 to 20 cents and butter from 25 to 50 cents. Is it any wonder that we were satisfied with our business and methods? Is it any wonder that, while we were thus pampered children of "old dame Nature," and favoring environments, we did not think of high feeding or balanced rations, did not think of creameries and cheese factories, did not trouble ourselves to make the most of the means at hand. But now there is an entire change from all these favoring environments. Our pastures are decreasing in area. Our one-time rich native grasses are being superseded by fox-tail and less valuable grasses. With the advent of the overland railroads and constantly decreasing freights, we have come more and more into competition with the old-established Eastern dairymen, with their cheese factories and creameries; with dairymen instructed in scientific methods by their experiment stations and dairy schools, and bulletins issued monthly, giving every new discovery and improved method. We have come into competition with their refrigerators for preserving their productions during the hot or cheap period; with refrigerator cars and cheap freights to place those productions in competition with ours during the time when otherwise we would get good prices; and lastly, we have come into competition with that personification of fraudulent practices—oleomargarine, butterine, or by whatever name known. I say, by the spreading and increase of dairying on this coast and from all these causes, the prices of our productions have been so reduced that even the Swiss dairymen, who milk so closely, work such long hours, do with least possible amount of hired labor and practice such rigid economy, can hardly make a new dollar for an old one.

And now the practical question is upon us. What can the dairymen of California do to sustain their industry and make it still profitable? First, we should organize national and State and county dairymen's unions, as nuclei around which shall crystallize and be made manifest the influence, rights and necessities of our industry through our broad land. The industry which produces over \$800,000,000 per annum in the United States must be heard when she speaks with a united voice. Already has a National Dairymen's Union been formed, and held its first meeting in Chicago, January 16th, 17th and 18th of this year. The object of this organization is "to secure legislation to prevent fraudulent sales of butter substitutes and to encourage and increase a more economical production of high grades of dairy productions." To carry out these important objects, the National Dairymen's Union recommended that State dairymen's unions be formed in every State to co-operate with it. Send delegates to its meetings, distribute information and statistics with regard to the objects aimed at, as a means of obtaining them and as nuclei from which to spread the good work and furnish the sinews of war. Some idea of the importance of this work may be obtained from the fact that the United States tax of two cents per pound on oleomargarine produced in 1893 was \$1620,643.50, which shows a sale of 81,003,217 pounds. The immensity of this figure may be somewhat understood when we consider that if we divide this total by the average number of pounds of butter produced in a year by one cow, this enormous amount of oleomargarine represents the product of over 500,000 cows.

As is well known, Congress did not make a sufficiently large appropriation to enforce the law fully, and large quantities of oleo productions escaped the tax. An oleomargarine manufactory is established on this coast, and from a pamphlet addressed to dairymen by the Dairymen's

Union of California I learn that 42,000 pounds of oleo productions were sold in one month in San Francisco alone. Large quantities were shipped to other parts of the State. From a deputy Revenue Collector I learn that its sale is being energetically and successfully pushed as genuine butter in Los Angeles, and in consequence, genuine butter has rapidly declined in price until that market, which has heretofore been a better market by several cents per pound than San Francisco, is now a worse market. From this it will be seen that we need to be up and doing or we shall be ruined by this stuff fraudulently sold as butter.

An anecdote lately related to me by a lady acquaintance well illustrates this subject. She sent Bridget to the market for some butter. She tasted the so-called butter, and said to Bridget: "This butter, while it does not taste bad, is not good; it has no flavor to it." Bridget, tasting it, said: "Well, mum, I believe it is not butter at all—but is Holy Margery." Many people use oleo productions, supposing they are using butter, and either don't mind the want of flavor or supply it by their imagination from the natural flavor of oleo.

Every man interested in honest butter should write a postal card at once to his Senator and Representative in Congress to support Senator Hill's bill to give each State full power over all oleomargarine questions—to do away with the original package law. We could, through and by means of such organizations, indicate in forceful numbers to our State Legislators and Governors, that, regardless of party, we would only support at the polls those candidates who will pledge themselves to advocate and vote for such laws in our interest as these organizations may propose.

Some 17 or 18 of the Eastern States have established experimental stations and dairy schools, and at several of the colleges they teach young men and women all of the latest discoveries in dairy science and practical dairying. They issue frequently bulletins which are published by the dairy papers and scattered broadcast through those States. We have no such means of advancing our interests. We need them. We must have them, or be left behind in scientific dairying, and a full knowledge of our business. Poor products are doomed. We must adopt the factory and creamery systems. We must use the centrifugal cream-separators to get the full value of our milk in cream. We must get our cream in proper state of cure, and churn at the right temperature to get all the butter fat from the cream. My experience in this respect is that cream should be cooled as soon as possible, by setting the cream cans in the coolest water you can get, in a vat of proper dimensions, into which should be run a stream of cold water till the cream reaches the temperature of the water. In the Eastern States ice is used. I have a platform out of doors, so situated as to be accessible to the breeze from every direction, on which I set the cream in tall shotgun tin cans of small diameter, during the night. No doubt every Californian has noticed how cold water will get, set in the open air at night in a tin or galvanized bucket. In our climate it is very rarely that we cannot get the cream down to 57 or 58 degrees. If we have hot nights, I usually send to town for ice. Managed in this way, our cream usually comes to a proper state of cure for churning in about 36 hours. It must not be too sour nor soured too quickly for the best results. If you can just detect the acid in 36 hours, and then churn at a temperature of 57 degrees, there will frequently be but a trace of butter fat in the buttermilk, and rarely as much as 2-10 of 1 per cent or 20-100 of a pound of butter fat left in 100 pounds of buttermilk. If there is more butter fat than this left in the buttermilk, something is wrong, either in the curing of the cream, or temperature of the cream when churned, or in the churning. If the best work is done, there need be no more than 15-100 of 1 per cent of butter fat left in both skim-milk and buttermilk, and even less than this is possible. We prove this by the Babcock test. We frequently test both skimmed milk and buttermilk. No dairy should be without a tester. We test the milk of every cow in our dairy from samples taken on two consecutive days, monthly, and the cow remains in the dairy or is disposed of upon her record. Our standard at present is 300 pounds of butter per cow per season. We are using thoroughbred Holstein and Jersey bulls, raising the calves and passing all the heifers through the dairy.

We aim to feed each cow a proper feed every day she is milked—but little extra feed is needed when good, rich pasturage is abundant. Our native grass, when abundant, comes nearer to being a balanced ration than anything I have been able to compound from grain, roots and hay.

We usually feed a little dry hay, even when the pasturage is the best. If pasturage is not good, as is the case this year, or when it begins to dry, we feed ensilage mixed with ground barley and ground horse, or Portuguese, beans and bran. Horse beans contain 30 per cent of protein. Ground barley contains only ten per cent. Horse beans are the only practical substitutes, that I know of, for the California dairyman—they are only substitutes—for the oil-cake and cotton-seed meal used by the Eastern dairymen to make a balanced ration. On rich bottom land, from 3000 to 6000 pounds of these beans can be raised per acre.

A good and, to California dairymen, practical ration for a cow in full milk, say a cow that will give 35 pounds of four per cent milk, is as much good hay as she will eat, 40 pounds of squash, pumpkin, roots or ensilage mixed with four pounds ground barley and four pounds ground horse beans. These can be raised on the farm and sold to the cows at a good price. Fed in this way, and properly milked, a dairy cow will milk profitably (if there is any profit in dairying) eight to ten months in a year. Indeed, it is often difficult to dry them up at all; but they should have at least two months' rest. Even poor and matured cows, under such treatment, will increase their milk from year to year for several years. The manure from cows so fed, if properly saved, will be worth \$18 per head per year, or what would cost this sum if invested in commercial fertilizers.

To carry out this system, we must alternate cultivation of our lands with various crops for our cows and with pasturage. There is probably no plant so valuable for us as alfalfa. To do the best with it, we must flood it at least once a year; otherwise the gophers will eat it out, and we

shall have to reseed frequently, and get only partial crops. In order to flood the alfalfa once a year we should save in reservoirs all the water practicable from our surface streams, and tap artesian water wherever it exists.

We must utilize all modern improvements in tools and machinery, and adopt the best methods of butter and cheese-making. We must dispose of at least that one-third part of our cows that we are constantly milking at a loss. All these things the advanced Eastern dairymen, our competitors for the trade of this coast, are doing to-day. Their labor only costs them three-fifths as much as we pay, if indeed it costs them anything. Oftentimes it is done entirely by their families. In Delaware county, N. Y. (the banner dairy county of the United States), in making up their balance sheets to ascertain their yearly profits, labor is not taken into account at all. If, therefore, we continue to dairy profitably in competition with such dairymen, we must have cheaper labor; we must dairy only high-grade cows; we must feed abundantly, and we must adopt Eastern and foreign systems for making and preserving fresh our products. After all this is done we may have to dairy small dairies with home labor, with the assistance of the creamery and cheese factory; and we must shake off the oppression of the middlemen. The law of supply and demand must fix our prices and not the commission man. Why should not the dairymen concentrate their productions at several principal points of business, have them graded and sold to the highest bidder for cash in the open market, or to dealers at an agreed percentage below highest prices for commission? Dairymen of California, give the Dairymen's Union, or some other co-operative dairymen's association, or several of them, the control of the majority of your products, and all this can be accomplished at once. Remember that all these advantages Eastern dairymen have now, in most localities.

The Elgin Board of Trade very nearly fixes the price of dairy productions in the West and influences it all over the United States. These things being done by us, no doubt our dairying will still be profitable. This accomplished, we can meet all competitors as "Greek meets Greek," with cost of freight from other places and the advantages of our unrivaled climate and productiveness of soil to balance the scales in our favor. With no long and cold winters to contend with, also the possibility of green feed nearly the year around and every advantage in silos which the East possesses, we shall still be able to dairy with profit. It is still considered to be the most profitable branch of farming in the East.

Our way is marked out for us. We must use economy, thrift, the most improved methods of manufacturing, and plenty of balanced rations. We must breed only from the best milk-producing strains of blood, and select our cows from cattle so bred. Remember that the bull is one-half of the herd. We must be on the lookout for all discoveries that will teach us how to make the best-flavored and longest-keeping butter. There was no point in which the butter at Chicago varied so much and was so often deficient as in flavor. Another point not yet determined is the proper percentage of moisture and other foreign substances to be left in butter; or, in other words, the proper percentage of butter fat. At present it is supposed to be about 80 per cent, or a little less.

We all know that feed is a prime factor. But there are other things. We are on the eve of important discoveries in these directions. Already the news of great improvements is in the air. We must know of them and adopt them when they come, for surely the law is universal, and perhaps there are too many of us. *The fittest must survive.*

ENTOMOLOGICAL.

The Patent of the Gas Treatment Declared Void.

Those interested in the hydrocyanic gas treatment for scale insects will be gratified that the process is not to be hampered by royalties to those claiming patent rights in the operation. In the U. S. Court at Los Angeles last week Judge Ross rendered a decision in the case of W. B. Wall et al. vs. Henry Leek, an action to enjoin defendant from an alleged infringement of certain letters patent, and for an accounting of profits alleged to have been realized by defendant thereby, in accordance with the following brief but pithy opinion:

* * * The patent referred to in the bill, and which forms the basis of the suit, is for a process of fumigating trees and other plants. The specification of the application for the patent (Specifications and Drawings of Patents, United States Patent Office, January, 1891, part 2, p. 2179) declares: It consists in fumigating the plant with hydrocyanic acid gas in the absence of light.

The specification proceeds to declare:

Hydrocyanic acid gas has heretofore been employed in fumigating trees, but has not been considered practicable, for the reason that if the gas were of sufficient strength to destroy the insect on the plant it also injured the foliage and fruit.

We have discovered that when the light is excluded the action of the gas is more effective in destroying insect life, and at the same time becomes harmless to plant life, unless used excessively.

Our process differs from the ordinary process of fumigating with hydrocyanic acid gas only in that we exclude the light. This may be done by means of the oiled tent or covering ordinarily used for such fumigation, provided the fumigation is done at night. If the work is done in the daytime the covering must be so colored as to exclude the actinic rays of light, but we do not believe it possible to produce satisfactory results with any colored tent in bright light.

To illustrate our invention we will explain its use in fumigating an orange or lemon tree of twelve feet in height: The tree is first enveloped in an oiled or painted canvas in the ordinary way, such canvas being impervious to the rays of light and surrounding the tree. We then place in a vessel under the canvas three ounces of cyanide of potassium, then six ounces of water, and then pour into the vessel three ounces of sulphuric acid, and close the covering for a period of about fifteen minutes. The canvas is then removed. The vessel may be covered with a piece of sacking or other textile fabric after the sul-

phuric acid is poured into it. This will prevent the sprays from the decomposing chemicals from injuring the plant or canvas.

It is obvious that hydrocyanic acid gas may be produced by other chemicals than those mentioned; also that the time and the amount of gas employed may be varied. We have secured good results from a fumigation lasting only five minutes.

Having thus described what the patentees state as their discovery, they declare that what they claim as new, and desire to secure by letters patent, is "the process set forth of fumigating plants with hydrocyanic acid gas, in the absence, substantially, of the actinic rays of light."

The specification, as may be seen, expressly recites the fact that the process of fumigating trees and plants with hydrocyanic acid gas, by means of an oiled tent or covering, is old, and that the process for which they ask a patent differs from the ordinary process only in that the applicants "exclude the light." Yet no method of excluding the light is stated or claimed. On the contrary, they declare that it "may be done by means of the oiled tent or covering ordinarily used for such fumigation, provided the fumigation is done at night." Of course, night excludes the light. Everybody knows that. Nor is the night patentable. The ordinary tent or covering of the old process necessarily excludes, to a greater or less degree—depending on the thickness of the covering and the extent to which it is colored—the actinic rays of light, which is that power of the sun's rays which changes the chemical nature of the mixture. So, also, will the clouds, to a greater or less degree, exclude the rays, depending upon the density of the clouds. And, after the sun sets and before it rises, they are entirely absent.

The old process, as described in the specifications, in no manner depends upon the time it is used. In consists, as the specification expressly recites, of fumigating trees and plants with hydrocyanic gas, by means of the oiled tent or covering. Whether used by means of a thin or thick covering, heavily or slightly oiled, or not oiled at all, in bright daylight, or in the twilight, or at night, or in the early morning, it is all the time the same process, which the public is entitled to use, because it was old when the patentees applied for their patent. An old process does not become a new and patentable process by being used at night instead of in the daytime, or at any particular time, or in any particular state of the weather, or because better results are obtained by its use one time than another.

The court, being of the opinion that the patent is void, for want of novelty and invention, and that, in view of its recitals, it is so plainly so that it cannot be aided by evidence, it should be so declared on demurrer, without subjecting the parties to the costs of producing proof.

THE FIELD.

The Coming Hop Crop.

California has had an exceedingly mild winter, and the prospects for a good hop crop should be very bright, but they are not in the vicinity of Sacramento, according to the *Record-Union*. The roots were in an unhealthy state, and many thousand new ones have been used for replacing old fields. The stock is decidedly scarce. The cause of the poor roots is ascribed to late cultivation and close trimming. Conservative estimates place the increased acreage at about 20 per cent.

The long-continued dry weather has been detrimental to new planting, especially those on high ground, but the dry weather has forced the roots, and the ground is covered with vines at this time, giving assurances of an early crop. The quantity will depend upon the amount of rain within the next fifteen days, and at the same time the yards along the Sacramento river will be helped considerably by the present high water. The following reports have been received from other parts of the coast:

MENDOCINO COUNTY.

Ukiah—While it is considered too early in the season to predict the outcome of the crop report, the wintering of the plants has been excellent in this locality, and all signs point to a yield equal to that of last year. The acreage has been increased by at least five per cent, and although the crop is somewhat dependent on the late rains, there is no fear among prominent growers regarding the outcome. Last year about \$200,000 was realized by the growers in this vicinity, and with an increased acreage this year there is no fear that this sum will not be increased. Altogether the outlook is an excellent one, and with a few spring showers the yield will be very large.

SONOMA COUNTY.

Santa Rosa—About 400 bales of last season's hops remain unsold in this county. The yards are all reported in good condition; the roots have wintered well. Over 500,000 roots were shipped from this point to Sacramento county during the late winter and early spring. As to the prospect of the quality and size of the coming season's crop growers are all encouraged. Several have contracted their crops ahead, and are using the advances thus obtained in enlarging and putting out new yards. The yards which came into bearing this year will probably increase the county's hop revenue \$20,000. This calculation is based on an authentic report that the yield will exceed that of last season by 500 to 700 bales.

Healdsburg—The season thus far has been a dry one for the hop crop, but the growers of this section claim that they will produce fully as large a yield as last year, and many growers believe they will have a much larger yield. It is impossible at this time to estimate what the probable excess in dollars and cents of this year's crop over that of last year will be.

OUTLOOK IN OREGON.

Portland—The prospects of a large hop crop in Oregon the coming season is good. The plants have wintered well and are now further advanced by probably three weeks than at this time last year. There has been a large increase in

acreage this season, though this increase will not materially affect this year's crop. It is estimated that the increase will amount to 20 per cent, or about 3000 acres. The growing plants are healthy and at this time there is no indication of disease. Last year's crop amounted to 38,000 bales, which was a small yield. If the weather conditions continue favorable to the end of the season the crop should be 50,000 bales, as against 38,000 in 1893, and 27,500 in 1892.

Bearing yards are already being twined and under heavy cultivation. For the most part new yards are adopting the short pole and twine and wire trellis system. Actual contracts for the 1894 crop are being made at from 12 to 13 cents. A few contracts for five years have been made at 12½ cents.

Growers who last year consigned to London are not pleased at the slow and small returns, about 11 cents being the best returns yet reported.

WASHINGTON.

Tacoma—Reports from the hop-growing districts of Washington show that hop roots are just peeping through the ground. They are about two weeks backward. The acreage is largely increased over that of last year. Some growers estimate the increase at 25 per cent, and the yield for 1894 at about the same proportion. The bulk of the increase is in the Yakima valley, where the completion of irrigation ditches has given a stimulus to the hop business.

The vines, so far as can be determined at present, are in good condition, and no danger from ice is anticipated. Washington State in 1893 produced in the neighborhood of 46,000 bales, and under favorable conditions this season's product will be 60,000 bales.

THE IRRIGATIONIST.

Irrigation for the Humid Region.

Points concerning the desirability of irrigation facilities are likely to be given their full weight this year. Prof. E. W. Hilgard, of the State University, has just written a letter for the *Farmers' Magazine*, a new Illinois journal, which is intended for farmers in regions with a rainy summer, but the points made are necessarily pertinent to an arid country as well. We quote as follows:

In the region of summer rains there is still a popular impression that the need of irrigation for the production of crops in arid climates is essentially a disability as compared with the presumed absence of such need in the humid climates; and that the farmer who voluntarily abandons the region of "free water from heaven for all" for that in which irrigation water must be secured and paid for currently as an inexorable condition of any crop at all, is placing himself under a heavy and unnecessary disadvantage, so long as there is plenty of land to be had cheaply in the country west of the 100th meridian.

That this view is not only unfounded in fact, but runs directly counter to the teachings of history, is not as generally understood as it should be; hence I am encouraged to present a few of the facts in point.

If we look back to the higher civilizations of antiquity, we find that they were mostly established in countries that without irrigation were simply deserts, or at most pasture lands, in which a small roving population might find scanty sustenance. Asia Minor, Syria, Egypt, Mesopotamia, Persia, India, are prominent examples in the Old world; in the New, the civilization of the Aztecs and Incas were not developed in the forests of the Amazon or the tierra caliente of Mexico, but on the arid plateaus and slopes of the Andes. The forests of Central Europe and Britain were, in time, far behind the development that took place on the arid shores of the Mediterranean and on the margin of the deserts of Africa.

Irrigation and the early development of civilization have, then, gone together, neglecting, for a time, both the northern forests and the luxuriant humid portions of the tropics. Evidently the establishment of irrigation ditches was deemed by these nations preferable to the clearing of the forests, for one thing. As a matter of fact we find that the average first cost of the clearing of forest lands on the Pacific slope makes the land cost almost exactly the same as an equal area of irrigated land just reclaimed.

But here the equality ceases at once, for in irrigated land the farmer is assured of annual crops without fail, giving him the advantage of a definite forecast of expenditure and income, as in other industrial pursuits. In the meantime the denizen of the cleared forest is kept trembling between hope and fear while looking for the rains which but too often do not come, and thus render useless all his best efforts and labor. The inhabitants of the semi-arid region between the Mississippi and the Rockies have costly experiences of this kind every few years; but they are not rare east of the great river nor in continental Europe.

One consequence of this state of things is that the Eastern farmer wants "plenty of land," so as to make sure of having enough to live on even if the crops are short. One hundred and sixty acres is his unit for a farm, and he cultivates the big place as well as his limited means will permit. In the irrigated lands, on the contrary, 20 to 30 acres is a good-sized farm, and "ten acres enough" is frequently exemplified in practice there. Intense cultivation, instead of surface scratching of an area exceeding the reasonable powers of the farmer to cultivate well, is the rule. Here we have another reason why the ancient civilizations preferred irrigation countries; they are capable of sustaining a larger population, because of the regularity of production and intense culture. That population, moreover, instead of being so thinly scattered as to render social life and collective action for improvements difficult, will be sufficiently close together for co-operative action in all that pertains to the better enjoyment and greater comfort of life.

These are facts and factors easily understood by any

student of history and economic science. But there are others which only a close comparative study of the climate and soil conditions of the arid and humid regions has brought to light.

The writer has set these forth in "A Report on the Relations of Soil to Climate," published by the meteorological bureau at Washington. A brief summary of the points only can be given within the limits of this paper.

An abundant rainfall, and, above all, summer rains, tend to leach out of the soils of humid regions the mineral plant food of the soil as fast as it becomes available by weathering (fallow), unless immediately absorbed by plants. In the arid regions this leaching out does not take place at all, or only to a limited extent, because of the deficient rainfall; hence all the plant food that is currently carried into the sea by the rivers of the region of summer rains, remains permanently in the soils of the arid regions. Sometimes this occurs to such an extent that the soil is surcharged with salts ("alkali soils"); but these salts always contain an abundance of mineral plant food, and when the noxious surplus of salts is made innocuous, such soils become in the highest degree productive.

Actual comparison by means of hundreds of analyses has shown, *e. g.*, that on the great averages the soils of the arid region of the United States contain three times as much potash and 12 to 14 times more lime, in easily available forms, than do the soils of the States east of the Mississippi.

We thus score another point in favor of the arid region: The soils are richer in plant food and therefore more profusely and permanently productive when irrigated than those of the region of summer rains. Still another reason why the ancient civilizations have flourished there: Arid Egypt and India to this day have, in some regions, never yet received fertilization, and yet produce as abundantly as ever.

But there is still another point which interests directly the humid region also: Unlike rain water, irrigation water supplies to vegetation a large amount of plant food which otherwise would run uselessly to the sea. It fertilizes the land not only by affording a regular and easily regulated supply of the right degree of moisture to all plants, but it also adds to the land, directly, a not inconsiderable amount of plant food which would otherwise have to be purchased.

As an example in point, it may be mentioned that the irrigation water of the well-known Riverside colony of California supplies, at the rate at which it is usually used, within a few pounds of the total amount of potash that is withdrawn by a crop of oranges. The growers of this fruit are thus dispensed, for a long time to come, from the need of purchasing potash as a fertilizing agent.

There can be no doubt that when the available waters of the humid region are examined in regard to the supplies of plant food they are capable of giving to lands irrigated with them, they will be found to be nearly, if not quite, as valuable in this respect as those of the arid region.

When to this is added the additional security to crops afforded by the command of irrigation water, the question whether a very large portion of the humid portion of the United States should not provide themselves with this invaluable aid to regular and profitable production becomes a very pregnant one. As a matter of fact the intrinsic advantages of irrigation concern and are within the reach of the farmer of the humid region quite as much as his fellow in the arid climates; and in many, if not in most, cases his water supply will cost him less. The quick succession of crops which irrigation permits, by bringing about the most favorable conditions for plant development, is certainly not less interesting to countries of short growing seasons than to those where crops can be pitched successively during ten months of each year. The practice of the market gardeners illustrates this point in all climates; and if grain growing is made possible in Montana at the elevation of nearly 5000 feet, because of the quick development made possible by irrigation, it is difficult to see why the same means would not be at least important to the farmers of the Mississippi valley, whose more advantageous climatic situation enables them to double the growing season as compared with the upper Gallatin.

The remarkable results of the system of underground water reservoirs suggested some time ago by A. N. Cole—he of the "New Agriculture"—were after all nothing more than what is the rule in irrigation countries, with a more regular and controllable water supply during the growing season.

It can hardly be doubtful that in time the lessons conveyed by history, as well as by the daily practice and results of irrigation in the arid region, will induce the dwellers in the regions of summer rains to procure for themselves at least a part of the advantages which are equally within their reach, putting an end to the dreadful seasons when "the skies are as brass and the earth as a stone," and the labors of the husbandman are in vain.

Sub-Irrigation for Hillside Gardens.

Mr. C. C. Hutchinson, who has been a resident of California for several years and interested in the development of Lassen county lands by irrigation, writes for the *Irrigation Age* of a plan of irrigating slope gardens by seepage from permanent ditches which may be suggestive to some of our readers. The plan is somewhat similar in principle to the A. N. Cole system of closed trenches filled with stone, but it is cheaper and more available. Of course the success of the system and the economy of water supply depends upon the character of the soil as to rate of percolation or seepage. We quote as follows:

The pretty village of Susanville, California, lies on the eastern slope of the Sierra Nevada mountains, at the foot of a noble wood-crowned cliff which overlooks Honey Lake valley stretching forty or fifty miles eastward.

At the head of Main street are two residence lots, which

illustrate the power of a little water when properly applied to good soil. In one lot a rich blue grass lawn occupies the space in front and on two sides of the dwelling, only broken by the walks and a few flowers and flowering shrubs, while a small garden extends from the rear of the house to the overhanging cliffs.

At the base of the cliffs throughout the town, and at many similar positions and altitudes throughout the valley—4200 feet above the ocean—are noble sprawling oaks, while 100 feet higher begin the interminable pine forests. The town is abundantly supplied with water from a distant spring, and gardens throughout the place are usually irrigated by water flowing in open ditches. But the above-named grass plat and garden is watered by spraying. Upon the lawn this works well, but upon the sloping face of these gardens the water sometimes gathers in rills, which form disagreeable little gullies.

The adjoining grounds, of which I would particularly write, also have too great a slope for spraying, and instead of supplying ditches through which water flows, the owner constructed permanent trenches, which have no outlet except by seepage. These trenches extend 100 feet in length along the face of the slope, each being 18 inches deep and 30 inches wide. The earth was scattered on the upper side of each cut, and by a little care in plowing the garden was terraced into slopes of less grade, each 100 feet long and 28 feet wide. As a driveway passes along each end of the terraces, nearly all the cultivation is done by a horse, turning on the driveways.

The trenches are designed as miniature reservoirs, and are kept nearly full, when irrigation is required, by a small stream flowing from one-half inch stand pipes at one end of each trench. The ground is free from stone and was originally covered with sage brush, which sufficiently describes the land to those who are familiar with the fertile, friable, easily irrigated soils indicated by such natural growth. These trenches prove quite sufficient to irrigate the garden in the long, dry summers of this region, and ground which would not mature white beans, rye or buckwheat produces heavy crops of sweet corn, tomatoes, peas, strawberries and all small fruits—asparagus, celery, potatoes, onions, melons, and, in short, the usual variety of first-class gardens. In the middle of the lower terraces, and occasionally about the grounds, are planted a few family fruit trees: apple—for which this valley is famous—pear, cherry, plum, peach, prune and apricot.

The size of the stream filling each trench is incredibly small. By my actual measurement, with a gallon measure, each trench is supplied by the flow of three quarts per minute; each one of these streams thus irrigating a strip of land 28 feet wide and 100 feet long. Where water is taken from a stream or open ditch it is certain to carry more or less sediment or vegetable matter, although it may look clear. Unfortunately, this is the case with our water works, as the spring water flows through an open ditch a considerable distance before it is piped over town.

In this instance, as in all similar cases, allowance must be made for the effect of such sediment in puddling the bottom and sides of the trench. At first this would be hardly appreciable, but the water continually standing would, in time, materially retard the seepage. This, however, is not objectionable. The trenches above described were kept full about one-half the growing season, but if the seepage was so retarded that they must be kept full all the time, no harm would result.

The system requires some extra labor, but it is all expended at the beginning when you lay out your garden. No matter what you do in handling water, it *pays* to do it well by permanent works at the start. I cannot imagine any more thorough and economical system of garden irrigation than is herein described. If adopted in a region where occasional summer showers occur, movable wooden troughs might be provided for carrying the overflow from one trench to another, to be placed in partially prepared cuts across the middle of each plat or terrace.

Among the advantages of the above system are:

- 1st. In the long run, or say even for three years, it is the cheapest system on heavy grades.
- 2d. It is the most thorough application of water.
- 3d. The water is warmed by the sun before it is applied to the ground—a very important matter.
- 4th. It irrigates the lower as well as the upper part of the soil.
- 5th. It runs day and night without trouble.
- 6th. You have no mud in the garden, no washing away of soil or plants, and you can work the ground any time.
- 7th. Each trench acts as a drain for the ground above it, whenever you stop the flow of water from the pipes.
- 8th. By what other system can so small a flow of water be made practically available for irrigation?

In any soil through which water will percolate this plan is worthy of a trial where the ground has a slope appreciable to the eye.

Instead of iron pipes the trenches may be filled from a ditch by the use of small wooded troughs, preferably buried for convenience in cultivation.

IT IS TELEGRAPHED from Washington that Senator Carey is encouraged over the prospects of the passage of the bill for the cession of 1,000,000 acres to each arid land State and Territory, to be improved by irrigation. The general expression of opinion by members is in favor of the bill, and there is little doubt it will be favorably reported soon by the Committee on Public Lands. Mr. Carey believes the bill will receive the unanimous endorsement of the committee. Senators Dolph and Vilas favor the bill, and say it provides for an experiment in the right direction and may lead to the solution of the question, "What shall be done to reclaim the arid lands?" The far Eastern people probably will favor the idea, as they seem to be possessed of a constant fear that Uncle Sam will spend something himself in improving these lands. Rather than do this, they prefer that he should give them away. But it is quite a question whether the sons of these Eastern men, when they desire farms in the West in

the next century, will think their ancestors were so wise to let all these lands go to private ownership to which they must pay rewards for holding. The Eastern person does not understand the West, nor does he seem to be making any progress in that direction.

TRACK AND HARM.

The Saddle Horse.

Mr. John Duncan, well known for his articles on the trotting horse, contributes the following to the *Louisville Post* on the most beautiful of all horses, the Kentucky saddler:

The horse came into use first as a riding and not a driving animal, and first bare-back and afterward saddle fashion; and thus he was a factor in the arts of war long before he lent himself to the uses of peace and civilization. The horse's enslavement or subjugation and improvement came with the invention and application to him of harness; and even after this was reached his chief employment was still for quite a time in connection with hostile and destructive forces. So that in the histories of the really great nations of antiquity horses and chariots are about as often as otherwise named together, and, indeed, the presence of anything on the order of a vehicle for use and association with the horse may be taken as a sign of more or less progress, the like being to man in his very rudest state practically outside of the subject.

Thus we see how this noblest of all the orders of creation below man himself lends itself to and to no small extent tells the story of human condition. When Cæsar first found and conquered Albion, or the island of Great Britain, then a country of Celts altogether, he was surprised at the horsemanship of the natives, and from the fact that they had progressed to the chariot stage—a fact of which he himself advises us—it is evident that whatever may have been the status of those people in many respects they were certainly above the condition of mere rude savages. It seems clear that wherever and whenever man has, from the very earliest ages, found the horse, there man has made the horse his very own; and every now and then the two come into history together in a surprising manner, and to an utter change in what previously seemed the necessary drift of events. To the nation of Arabs the horse has been far more than a mere object of pleasure and beauty, which is all in that association he is mostly considered. The horse—the riding horse—has been largely instrumental in causing the Arabian people to be regarded, as they are, as a warlike and conquering people; and when the great Roman Empire began to totter preparatory to its final fall, a prime factor in the decline was a race of riders—a race of hardy horsemen known as Huns, who originated in a country north of the great Chinese wall. Gibbon, referring to them as they appeared in the early centuries of this era, says their cavalry "frequently consisted of two or three hundred thousand men, formidable by the matchless dexterity with which they managed their bows and their horses." The place of the saddle or riding horse in ancient and, indeed, in all war history is thus suggested; and in this way the fate of even England, determining in no small degree her destiny and present position in the world, turned on the Norman chargers that figured on the memorable field of Hastings.

The Saxon rode the seas; the Celt of Britain, at the very outset of his appearance in authentic history, is seen in conspicuous association with the horse; and the Norman has notable relation to both sea and horse. It is thus plain why the ruling blood in this country, in the United States, should course toward horsemanship; but it is not anything like so much on the surface why the native Indian should be the really great horseman and rider that he is. The Indians were here long before there was a horse, according to the present understanding of the term, on this entire continent. Horses did not here appear until the sixteenth century, when the Spaniards brought them along and began their war of extermination against the unoffending natives, the conquerors employing their horses as a power to terrify and subdue. The splendid horsemanship of our North American Indians, asserting itself thus as has been done within a period of not exceeding 300 years, may prove to be an illustration of a species of atavism—may illustrate the power of a faculty or function, of something that was great and prominent in the ancestry, to resume the full way after a long period of dormancy.

When the pioneer people of our race came into Kentucky there was nothing left for them to do but to ride. It was either on horseback or on foot; and the former was always selected except when the presence of necessity forbade. Thus everybody who was anybody rode; and thus Kentucky has a recent memory and record of an abundance of good riders on every hand, including riders young and riders old as well as riders of both sexes.

It will enable us to understand how, in connection with the horse, one good thing leads to another, if we remember that Kentucky's first love and real pride in the horse line, as touching pure breeds, was the beautiful thoroughbred. This in turn led to the trotter; for certainly, without the former, the latter, as we at present have it, could not be. And it is odd and true that the riding horse, the first on the spot in Kentucky, is the last to be made here, or for that matter anywhere, into a distinct breed. Thus one pure, good breed of horses has suggested and led up to the making of another and of others; and so we have the principles of evolution and the laws of the survival of the fittest or most desired at work to-day right under our very eyes.

The more famous of the early riding horses of Kentucky came as chance shots, so to say. They were not as now in any sense the products of definite breeding with a view to such result; and so, while it was always recognized that in their best form they could not be found wholly apart from running blood, they were sought for and made from the most diverse material within that very wide range. It

was long ago established that runners bred to be runners were every way better and more reliable in their special line of service than such as were not so bred, these latter requiring, in order to their being held in available form, watchful training daily over and over again—strikingly marking the difference between an animal taking to a task naturally and one held to it by use only. In due course the experience in trotting was found to accord perfectly with that long previously reached among the runners or thoroughbreds; and now at last and in like manner this—the doctrine that to get an animal to be relied on for a given use it must be bred to that use—has been made the cardinal doctrine for saddle or riding horses also. Without the operation of this doctrine or law such a thing as a breed of saddle horses is impossible; and it will be found with this breed, as it has been in the history of other breeds referred to, that what opposition exists or arises on the way to the general acceptance of the facts as here presented will in due course cease. It is not meant by this that in the case of the standard-bred saddle horse matters have progressed so far that all the good is within and none without the prescribed limits; but it is meant that more and more this will be the actual state of affairs, and that more and more the place of safety will be within and not without the lines.

It will be inferred from what is here stated that the saddle-horse interest is in the midst of a time of transition, and so it really is; and being already great and still a growing interest it is inconceivable that a serious step forward resulting in many changes as to values and otherwise is to be effected without some warm discussion, and perhaps disaffection also. Indeed, something on this order is now what is going on, but it will not be seriously in the way of those who propose and expect to make the standard-bred saddle horse as much above the itinerant stage of the breed as a runner like Lexington is above a nondescript quarter horse, or Nancy Hanks is superior to the pedigreeless aspirants to trotting honors in the days when a mile in 2:30 was rarely thought of and scarcely hoped for.

Of course the good work thus commenced is to go on, the superstructure rising in attractive form on the substantial foundation that, not a minute too soon, has been laid. The saddle-horse men now have a standard and a register; and they are regularly organized, with Gen. J. B. Castleman as president, Col. I. B. Nall as secretary, and Mr. E. T. Halsey as treasurer, all of these gentlemen residents in Louisville. Thus the situation is in every way clearly defined. No one need buy a true-bred saddle horse unless he wishes to do so, but if that is what he seeks he ought to have it and no mistake, and with protection against error and wrong.

And thus we have progressed away, very far away, from the horse as a mere instrument of war, and still hold him in saddle service, and with prospects for him in this service greater than ever before. It looks as if the time might not be very far off when, in the application of electricity, the horse as an instrument of mere power would not count for much; while on the other hand it is evident that as the world prospers and progresses the pleasure-giving, mind-resting horse, in all his forms, will be more and more in demand, and among such forms a chief place will always be held for the true-bred saddler.

SHEEP AND WOOL.

Grading and Cross Breeding Sheep.

I believe that grading, by which we mean in the first place the crossing of one breed of sheep with another and then following up by breeding to sires of the same breed until we have half bloods, three-quarters and seven-eighths and so on to higher grades, is the most practical and profitable way for farmers in general. This involves the use of a prepotent sire for each successive cross. It means not only what is commonly called a full-blood sheep, a full-blood male or a full-blood sire, but it means the use of one that is true to the type of the breed to which you would make the change and one that is prepotent. In crossing the common or Merino sheep upon the sheep of English mutton breeds, I would emphasize the importance of using a strongly prepotent ram. For generation after generation, for hundreds of years, the Merino sheep have been bred much after the same type as those of the present time and thus it is necessary that a strongly prepotent ram be used to overcome the tendency to continue the characteristics of the dam. My experience in cross-breeding among sheep has been confined entirely to Shropshires, and I have found that a half-blood Shropshire is a better sheep than a Merino grade, both as to quality of wool and equal quantity and a better carcass, and that the higher the grade of Shropshire the better the sheep under the present changed conditions of the sheep business. Grade Shropshire wool sells for from 4 to 7 cents more per pound than Merino wool, whether washed or unwashed, provided both are taken in the same condition. It increases the annual lamb crop from 25 to 50 per cent, and the lambs will sell for the shambles at more per pound. In southern Michigan, where thousands of sheep are annually fed upon corn purchased in Chicago, where most of the sheep are subsequently marketed, our feeders have found that it is only at an absolute loss that they can feed Merino grades, which up to within a few years have been the common sheep of the country, and this class of sheep could have been purchased last fall at from \$1 to \$1.50 per head, and were almost entirely unsalable, while Shropshire, Oxford, Hampshire and Lincoln half-blood lambs sold from \$2.50 to \$4 per head. At the present time, April 4th, several carloads of January and February, '94, lambs have been shipped that realized from \$3 to \$4 per head and turned a good profit for feed and care, and the breeders will increase their business largely in the future. This could not possibly be done except the lambs were backed by blood of some of the best English mutton sheep. One-year-old sheep are now being sold that

are weighing from 100 to 120 pounds per head, or an average of 110 pounds, and are realizing from \$4.75 to \$5 per per cwt. in the market.

After making careful estimates as to the cost of these sheep, including the corn which they had in the lamb crop while following the ewes, the pasture in the summer and fall and the cost of fattening, shipping and selling, and the total cost of these sheep up to the present time does not constitute \$2.25 per head, which leaves a profit of from \$2.50 to \$3 per head; and this I submit makes the sheep the most profitable farm animal of to-day. For this foundation flock of ewes for cross breeding, I would get the best type of mutton ewes that I could find with good fleeces rather than pay \$1 per head for grade Merino ewes weighing from 75 to 90 pounds each, with heavy oily fleeces, and I would pay from \$3 to \$4 per head for good grade ewes carrying the blood of the mutton sheep. The latter ewes should weigh from 100 to 125 pounds each and shear from 6 to 8 pounds per head, and show in their general form and markings some of the characteristics of the mutton type. Of course, I would select them short in the leg, with good quarters, straight backs, full through the heart, with good strong bone. Such sheep will breed well and feed well whatever the breed, and with such a foundation you have a shorter cut, saving one or two generations of cross breeding, the loss of valuable time and expense. I believe it cheaper to buy up than to breed up under the present conditions and ruling prices, under which he who fails to secure for himself a good foundation flock of ewes for breeding mutton sheep in the future will be sure to regret it within the next three years. The farmer who is keeping a flock for general utility (I do not refer to those who have stud flocks and a trade for breeding sheep and who should continue their business) will, therefore, in the long run be selling off his small Merino ewes at the best prices he can get and purchasing a foundation flock of ewes of the type described above at the prices at which they can be bought at present, and this is just what some of our most successful farmers are doing in this vicinity. Whether or not this applies to the ranch and those regions where food is sparse, we do not discuss in this article. I am sure of one thing, however, that the highest type of mutton sheep will never be produced under sheep-ranch conditions. They require better food and better care than can possibly be given them in large flocks, but this still leaves the ranchmen a splendid opportunity to largely increase the value of the carcass without any loss in the value of his annual wool clip.—Geo. E. Breck in Farmers' Review.

General News Notes.

SMALLPOX is epidemic in Chicago, and there are many daily deaths.

THE failure of Mark Twain as a New York book-publisher is announced.

MORELL, Chris Evans' assistant, has been sent to the Folsom State prison for life.

A \$300,000 FIRE totally destroyed the Sacramento electric power plant last Wednesday.

ALL the coal miners in the country are reported to be getting ready for a strike to begin to-day.

It is now expected that in the Senate deliberations on the tariff bill the duty on lead will be increased.

"THE Great American Pie Company of Chicago" is about to be placed in the hands of a receiver. There need be little difficulty in finding a receiver for pie.

THE down stage between Angels and Milton was held up in the regular orthodox fashion last Monday. Between \$1800 and \$2000 was got out of the treasure-box.

THE North American Navigation Company has ceased operations and will no longer vex the Pacific Mail Steamship Company. There is money enough on hand to pay all claims.

MRS. PULLMAN of Fort Scott, Kansas, the only city woman treasurer in the country, is "short" \$1500 in her accounts. She is honest, but claims that her books have become "confused."

THE strike on the Great Northern Railroad, which is a fight between two rival labor organizations, is still on, and the miners along the line of the road are being discharged by hundreds because of inability of the mining companies to secure ore transportation.

AFTER a thorough investigation the Secret Service pronounces as "absurd" the recent widely reported statement that counterfeiters had coined 500,000 real silver dollars at Omaha, which the authorities could not tell from the genuine output of the United States Mints.

THE registration bureau of the internal revenue department has already issued 38,000 Chinese resident certificates, with several thousand yet to apply. As the census shows but 35,000 Chinese in this district, it is evident that many thousand Celestials have been smuggled in.

A NEW SEIGNIORAGE BILL has been introduced in the House, providing for the coining of the seigniorage and so amending the Resumption Act that three per cent bonds would in future be issued in lieu of four and one-half and five per cent. It is said to meet with Secretary Carlisle's approval.

THE frauds at the Carnegie Works, wherein defective armor plates for the government cruisers were foisted upon the national officials, are to receive strict investigation. It was supposed the matter had been condoned by the payment by Carnegie & Co. of \$140,000, but a rigid investigation has been ordered by Secretary of the Navy Herbert.

THE United States Corporation Bureau, of Chicago, makes the following exhibit of new corporations incorporated in the United States during the month of March, 1894:

Total corporations, 1180.	
Total capitalization, \$182,130,360, distributed as follows:	
Mercantile and Manufacturing Companies, 668.....	\$62,779,525
Banks and Investment Companies, 16.....	707,000
Gold, Silver and other Mining and Smelting Companies, 92.....	63,581,000
Coal and Iron Companies, 17.....	3,015,000
Light, Heat, Power and Transportation Companies, 57.....	19,305,000
Building and Loan Associations, 81.....	19,173,000
Irrigation Companies, 12.....	428,500
Miscellaneous, 287.....	23,141,335

SUMMER CROPS.

Sorghum Crops for Moist Land in a Dry Year.

Many of our readers who are thinking of crops for moist land will be interested to know of the results of a recent experiment at the State University at Berkeley to determine how much green and dry fodder could be had per acre from different cuttings during the summer and fall. Berkeley is too cool in summer for the heaviest yields of these growths. If the soil is moist enough, in the hotter parts of the State, heavier cuts could be had, but the figures will be a fair average of weights and conditions.

The piece of ground selected at Berkeley had been used for cereals for a number of years. It is rather deficient in drainage, and could not be worked until quite late in the season, and even then was not brought into very good tilth. The seed was sown in drills three feet apart, on May 5th. A good stand was obtained, but the plants grew rather slowly at first. As the weather became warmer the growth was accelerated, and the collection made a very good showing. No irrigation was given. Portions of each plant were cut at different stages of growth, and the results of the weighings are given in the following table:

VARIETY.	WEIGHTS OF SORGHUM—VARIETIES CUT AT DIFFERENT STAGES OF GROWTH.						Average Height of Plant at Maturity.
	First Cutting, Before heading out, August 10.	Second Cutting, "In the Milk," Sept. 10.	Third Cutting, "In the Dough," Sept. 29.	Green.	Dried.	Green.	
Honduras.....	27,985	8,700	41,470	17,690	43,790	17,090	7½ ft.
Stewart's hybrid.....	31,320	11,600	44,950	21,750	43,500	21,750	8 ft.
Rural branching.....	13,050	4,541	23,490	9,280	24,650	9,280	5 ft.
Chinese Imphee.....	31,080	10,150	37,700	15,950	45,590	28,780	8½ ft.
Early orange.....	22,330	10,440	38,670	15,080	49,010	20,010	8 ft.
Early amber.....	25,520	7,830	49,590	17,400	60,320	23,200	8½ ft.
Kafir corn.....	15,370	4,980	18,860	7,850	17,400	5,740	4½ ft.

Second growths started quickly after each of the cuttings noted above, and a very fine growth was made without application of water. In some cases the second growths headed out, but the proportion of leaf to stem was much greater than in the first growth. The following weighings were made of second crops:

VARIETY.	YIELDS PER ACRE OF SECOND GROWTHS OF SORGHUM.			
	Second Cutting, Nov. 22, of Plot Cut Aug. 10.	Second Cutting, Dec. 10, of Plot cut Sept. 10.	Pounds per acre for two cuttings.	Aug. and Nov. Dec.
Honduras.....	17,800	3,204	46,785	44,674
Stewart's hybrid.....	15,664	5,340	46,984	50,290
Rural branching.....	9,612	1,424	22,602	24,914
Chinese Imphee.....	22,072	4,623	53,102	42,328
Early orange.....	14,952	1,958	37,286	40,628
Early amber.....	14,240	2,848	39,760	52,438
Kafir corn.....	12,104	3,204	27,474	22,164

The above are all weights of green fodder, immediately after cutting. The columns which combine the two cuttings from the same plants, at different dates, contain interesting data and indicate that one must study the growth of the varieties carefully to secure two cuttings of maximum amount, and that the ratio between the cuttings at fixed dates is not constant. For example, the highest result with Chinese Imphee was gained by cutting in August and November, while with the Early Amber there was more weight secured by cutting in September and December. The full significance of the results noted in the last two columns of the last table can only be understood by gaining more light from future experiments.

Feeding experiments carried on to test the preference of cows for either of the varieties named above showed that the Chinese Imphee was eaten fully, while of all the other varieties there were butts of the cane left, from a foot to 18 inches in length.

Another plant, grown in the same plot, but not weighed because of its slower growth, was the Pearl millet (*Pennisetum glaberrimum*). It made a very good growth of blade and stem and a large crop of heads. The cattle were very fond of it, and ate it up clean, the green seed heads as well as the leaves and stems.

The plant named Kafir corn is a member of the sorghum family, bearing a seed resembling the white dhoura, or Egyptian corn. The plant is, however, of different habit, bearing its seed stem erect, and being generally of a more stocky growth. It proved of slower development than the other sorghums mentioned in the table above, but its growth late in the season, as shown by the table of second cuttings, was very creditable, surpassing in this respect the "Rural Branching Sorghum" or "Millo maize," as it is generally called at the South. A superiority which is claimed for the Kafir corn at the South is that it sends but one stem from the ground (thus leaving a stubble, which is easily handled), and branches freely at the top.

In the experiments at Berkeley it stood out somewhat and showed a disposition to branch at the top. The growth, after cutting, was very good. The table above shows its second growth heavier than some of the tall sorghums. The grain is very large and fine, and was borne in larger amount than is usual for the sorghum family in this location. The variety certainly seems worthy of trial beside the common Egyptian corn in those parts of the State where the latter yields well, and is becoming popular as a grain and forage plant. We receive many notes of the successful substitution of Egyptian corn as a substitute for barley for horses, and wheat for chicken feed.

CORRESPONDENCE.

The Spy System Against Hydraulic Mining.

TO THE EDITOR:—There is scarcely possible a hope for the restoration of amicable relations between the farmers of the Sacramento valley and hydraulic miners so long as the position of the former is assailed and misrepresented. So exacting and unrelenting is the unhorsed giant that he goes down into depths of billingsgate to find terms to apply to his recent successful antagonist. It makes no difference though the object of his hatred is clothed in the garb of law—moves within the lines of decrees and is a close observer of the modes of civilization; and last, but by no means least, the sum and substance of his offending is that he fought for his home, and does yet—the noblest occupation that men ever engaged in. One of the most discouraging features of this controversy is the subserviency of certain of the public press to the demands of the monitor. This is often not because they know or care anything of the issues involved, but seem willing to heap opprobrium on the innocent merely for amusement. In such journals attempts at enlightenment are wasted, and this is not written with such a view, but if we may reach the same audience the evil effect may be neutralized, to say the least.

Thus, in the *Mining and Scientific Press* of April 7th we find a short editorial under the text of "The Spy System," in which the Anti-Debris Association is unjustly aspersed. The duty of the U. S. Debris Commission under the Caminetti Act is quoted and outlined, and excuses are offered more or less plausible why the Commission cannot enforce the penal provisions of the law; then the *Press* proceeds to say: "There are doubtless other reasons why the Commission is reluctant to undertake the punishment of male-

factors. For years the Anti-Debris Association has maintained a system of espionage over hydraulic mining that has brought discredit upon them."

Not a word is said concerning the cause that made the "spy system" a necessity, without which laws and decrees were a screaming farce. Of course the system "brought discredit upon them" on the part of the outlawed monitor. Had it been otherwise, the system must have become inoperative.

Again, says the *Press*: "They hired spies and informers, who, for hope of reward, patrolled the mining regions and endeavored to 'catch in the act' any who were engaged in illegal mining. It is a singular fact that, despite the elaborate detective system of anti-debris advocates, the total number of arrests during a long series of years did not reach fifteen; but it was kept up all the same at large expense."

It must be admitted that the system was expensive, but it was largely increased by the guard and telephone system brought into requisition to avoid detection, and yet sufficient were caught to replenish county funds more than \$15,000 in fines imposed for illicit work. And instead of less than 15 arrests having been effected 21 were made at one gathering and placed in jail until their fines were adjusted. Add these to the 15 and we have 36 who defied the courts of the land, to say nothing of the scores who were deterred thereby from evil doing. Who will say the system was not necessary and not a success?

Let it be understood, however, that the object of the valley defenders, whether individually or collectively as an association, was not to impose fines, not to fill jails, not to glut court calendars, not to strike a fallen foe, not to keep alive the unpleasant agitation, but solely and alone to seek immunity from further ruin, as granted by State and Federal courts. What else could be done and secure our

rights and the respect of the world has not appeared. This may be sufficient reply to the following: "The Anti-Debris Association has by no means considered that it was pursuing its aims by the most laudable and desirable methods."

Then again: "The spy system has been the direct source of very much of the hostile feeling that long existed between the farmers and miners. No wonder the Debris Commission is loath to engage in a work inaugurated and maintained under such auspices, and which is certain to engender more trouble in future if not dropped."

Possibly the Commission is, or will be, clothed with greater deterring power than were the injured farmers, but from the appearance of the mining rivers the influence is not apparent, and the fact that several resident agents have been placed in the field by these Government officers is evidence that the hated system is not to be "dropped." They, however, will take notice that, according to the writer who is quoted above, and who evidently speaks by the card, there is certain to be more trouble in future if the system "is not dropped."

In connection with the above, it is in order to state the illicit monitor is responsible for the spy system. It has the power, given it by the United States Circuit Court more than ten years ago, to abolish the system at any hour and any time. It has persistently declined to do so and is still defiant.

If, as is often hinted, it purchased immunity, it stands doubly convicted of crime, of which the latter is the blackest. Beings in the form of men hold up stages and trains for pelf, why not monitors? It would seem to have been much easier and safer and might have been engineered by interested parties for effect. Who knows?

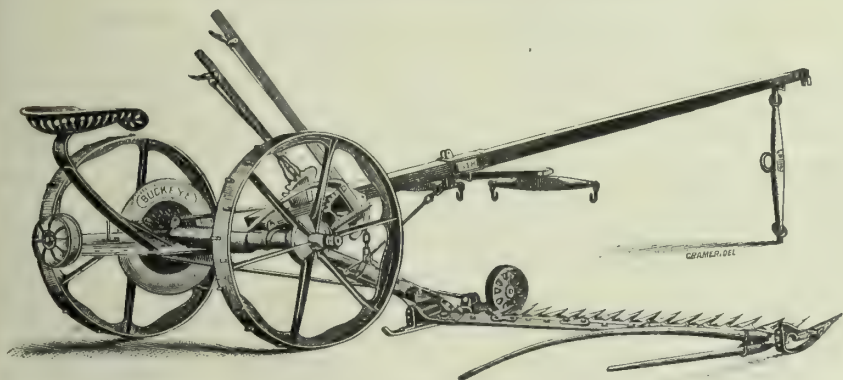
GEORGE OHLEYER.

Yuba City, April 20, 1894.

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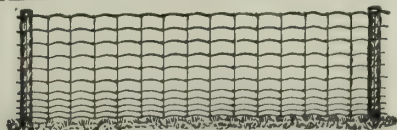
Principal Place of Business, San Francisco, Cal.

NOTICE is hereby given that at a meeting of the Directors of the Grangers' Business Association, held on the 11th day of April, 1894, an assessment of three dollars and seventy-five cents (\$3.75) per share was levied upon the capital stock of the Corporation, payable immediately to Charles Wood, the Secretary, at his office at 108 Davis street, San Francisco, California.

Any stock upon which this assessment shall remain unpaid on TUESDAY, the 15th day of May, 1894, will be delinquent and advertised for sale at public auction, and, unless payment is made before, will be sold on FRIDAY, June 15th, 1894, at two o'clock P. M. of said day, to pay the delinquent assessment, together with costs of advertising and expenses of sale.

CHARLES WOOD,

Secretary of Grangers' Business Association.
Office, 108 Davis street, San Francisco, Cal.



Governor Hoffman's Experience.

JEFFERSON, WIS., March 28, 1894.

The Page Woven Wire Fence Co., Adrian, Mich.: GENTLEMEN:—About a year ago I procured from you a roll of your woven wire fence, with the intention of probing its merits. The fence was used for the enclosing of a yard containing a considerable number of cattle. It was thus put to a severe test. It gives me great pleasure to inform you that the fence gave the greatest possible satisfaction. I concluded that no other fence should ever be erected on Riverside Farm while I had the control of it. Intending to repair an old barbed wire fence in a manner to give complete protection against the intrusion of hogs, I beg to inclose my order for several rolls of the fence woven for that special purpose.

I remain, gentlemen, with high regards, yours truly,
FRANCIS A. HOFFMAN,
Agricultural Editor Germania, etc.

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Of all the strawberries raised on the Pacific coast there is none more prolific, larger or better flavoured and sweeter than the Arizona Everbearing, and it colors up fine, is a good shipper and the plants are very thrifty. The writer got 1000 plants from Arizona a year ago, from which he has now over 200,000. Send for some and try them. Price \$1 per 100 or \$5 per 1000 plants, delivered at express office or freight depot in Pasadena. Also Orange and Lemon Trees, one or two-year buds on four-year roots. Fine trees at \$15 and \$20 per hundred, or 25 cts. each in lots of 10 or less than 100. Address C. B. HEWITT, Pasadena, Cal.

WOVEN WIRE FENCE

2 No. 9 and 11 No. 14 wires
60 in. high. Make it your-
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Home high, built strong,
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In one of the best EARLY Fruit Sections of the State, together with a nursery of Orange, Lemon and Deciduous Trees, for sale at less than its real value.

Particulars of the estate by addressing
H. F. DEXTER, Care "Pacific Rural Press."

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\$11,000—HALF INTEREST IN 2080 ACRES FOR Stock and Fruit Ranch, with full management. Title perfect.
Address P. O. Box 21, Haywards, Cal.

THE HOME CIRCLE.

Agony.

The music ceased, the curtain rose,
I did not heed the play,
But gazed upon her lovely face;
She sat two seats away.
Her cheeks like tinted apple bloom,
Her teeth like gleaming pearls,
Her eyes as blue as summer skies,
A wealth of golden curls.

And as I gazed upon her face
There came a look of pain;
Like cloudy shadow o'er the land,
It passed, then came again,
I saw the teardrops in her eyes,
The rose tint fade away,
And that fair cheek grew deathly pale
In speechless agony.

She turned and touched her escort's arm,
They slowly went away;
My heart beat fast with sympathy,
I did not heed the play.
He soon returned and took his seat,
I gazed in great surprise;
He read the question I would ask
Flash from my eager eyes.

And as the music died away,
His lips this answer bore:
"My sister's feet are number five,
Her shoes are number four."

—H. W. Stocker in Boston Globe.

A Little Old Curl.

It fell from the folds of a letter
That came in a Maytime glow
From one—I shall never forget her—
A curl with a glamor of gold,
And I thought of the bright brow that wore it—
It was only the brow of a girl;
But how gracefully once it fell o'er it,
This witching and wonderful curl!

Her eyes, like the heavens above her,
Beamed bright as an April and blue;
All the winds of the May seemed to love her,
And tousled her curls as they blew;
And once, when, with tenderest caresses,
They kissed the bright wonders apart,
And made a sweet song of her tresses,
They tossed this wild curl to my heart!

And now, after years that have perished,
It shines through the mist and the gloom,
Neglected and lonely, yet cherished,
It smiles like a lily in bloom!
And, though the dear forehead that wore it
Lies low 'neath the maples that moan,
Still, still in the dark I adore it
And kiss it, and love it alone!

—F. L. Stanton.

The Donation Party at Hustler's Camp.



HE camp was somewhat exercised over the newcomer, who, in truth, did not look as if he belonged there. A number of men paused in their work and gazed after the figure in rusty black as it ascended the rugged path on the hillside—a figure slender and slightly stooped, with gray showing plainly in the fringe of hair beneath the well-worn hat.

"He said he was a colored porter, but he was a lyn," observed Dirk Collins, judiciously. "He ain't no more of a nigger 'n I am."

"Which ain't sayin' no great for the difference," interposed a companion, with a glance at the naturally dark face now long unshaven and browned and roughened by years of exposure.

Dirk waited until the laugh at his expense had subsided, and then calmly proceeded—

"An' he ain't no porter, neither, never was; anybody can see that by lookin' at him. Nigh as I can make out he's some kind of a book peddler."

"One o' them track slingers, likely; an' he's come to a poor market," said a brawny fellow named Sam.

Little Jim leaned on his pick and looked wistfully after the retreating form. Jim was only a boy who had drifted into the camp, nobody quite knew how or from where, and they had all fallen into the way of calling him "Little Jim," though he undertook a man's work with a courage and determination which showed that he intended to ask no favor. "The pluck of the young beggar," as Sam phrased it, had won for him what no amount of asking could have won, and he was allowed to stay. It was not the proper place for such a boy, one would have said, but there was no proper place on earth for Jim, so far as his few years had enabled him to discover; and this one, rough as it might be, was not the worst he had known. If, occasionally, ill-luck or much drink rendered some one tyrannical and abusive, there was usually somebody else sufficiently generous or sufficiently quarrelsome to interfere in the boy's behalf.

"An' they're a good deal like this yere mine—mighty rough and unpromising on

top, but with good, rich streaks, if ye can once git down to 'em," said Jim. "I wish that book man could do it."

It did not seem a probable consummation. The colporteur was gentle, patient, but persistent, and very much in earnest. If his attempts to enter into conversation were rudely repulsed one day, his tone the next day had lost nothing of its kindness. If his invitation to a meeting was refused with curse or sneer, it did not prevent the proffer of a leaflet. Those little white leaflets! It seemed as if he scattered them everywhere.

"Ye can track that feller all over the diggin's by 'em," grumbled Dirk, holding up one. "It's all the job I want to scratch along in this world, an' I haint no time to 'tend to no other. It's gettin' monotonous, an' I wish he'd git out o' this."

"He won't till he's starved out; but that ought to be 'fore long," declared Sam. "He's gettin' thinner 'n' more bent over an' bleached lookin', an' his old black coat shinier every day. If he haint sense enough to know when he's struck a place that won't pay, 'twould be a mercy to give him a hint."

"A good h'latin', one what would skip him out lively," interposed another voice.

The irritable wish and rough jest were bandied about, until they gradually changed to a purpose—a plan born of the moment's caprice; the irresponsible mood of a crowd.

"The next time we git sight of him anywhere we'll lay down the law, an' give him twelve hours to skip out o' this."

Little Jim listened uneasily.

"You don't have to wait to git sight of him; I can tell you where to find him," he said, with sudden resolution. "He lives in that little old cabin up round the turn, 'cross the gully."

"Ho! come to stay, has he, an' got his nest all fixed? It's likely he'll change his mind. We'll go up there to-night."

Home missionary dwellings are not usually sumptuous in their furnishings, and the little cabin on the hillside had no soft hangings to shut out the gathering darkness. When the night fell, and the self-appointed committee of five drew near, the light from the small window shone out bravely, and the interior was clearly revealed. Such a picture as that was! No lone man bending over tracts or Bible, but a neat room, plain almost to bareness, indeed, but wondrously bright and homelike to those eyes which had seen nothing like a home for so long. There was a strip of rag carpet on the freshly scrubbed floor, a print framed in twisted branches on the wall; a home-made lounge, with a pale-faced woman reclining upon it; while a little girl, with grave, housewifely air, was brushing up the hearth.

Involuntarily the men drew nearer to the window and gazed. Their next movement might have been a silent retreat, but the little girl, turning, caught sight of some one, and eagerly threw open the door.

"Papa, is it you?"

"Sissy, is your pa in?" asked Dirk, lamely enough, as they found themselves discovered.

"Not yet, but we're looking for him. Won't you come in?" answered the small hostess, a trifle dismayed, but bravely rallying her hospitality.

The five filed solemnly into the cabin. There was a limited supply of chairs, but with a rude bench and a little crowding they were all seated. The invalid on the lounge attempted to speak to them, but the weak voice failed to make itself understood by any one but the watchful young nurse.

"Yes, mamma. She wants to tell you," turning to the visitors, "that papa'll be home soon; but she can't talk much yet, 'cause she's been so sick. I guess it was the way the roof leaked made her take cold; but papa patched it, and I'm keeping house now so she'll get restful and strong. I can do it pretty well."

"Course, sissy; you do it first-rate," declared Sam, as emphatically as if he had made a study of housekeeping.

She was only a plain, brown-faced little maiden, enveloped in a coarse check apron, but she and her surroundings seemed to have a wonderful fascination for these strange guests. When she attempted to replenish the fire, Dirk proffered his assistance.

"My hands is bigger'n yours, sissy; see how much bigger!" and he gazed at the small fingers as if a child's hand were a marvel.

When for a few minutes she was silent, one of the men nudged Sam and asked in a whisper if he couldn't "set her agoin' ag'in."

It was easy enough. She was a sociable little body, and the few awkward questions drew ready replies—an artless story which unconsciously gave glimpses of many a hardship and privation. The pale-faced mother only listened and smiled.

But presently the child broke off a sen-

tence abruptly, and turned toward the door. "There's papa!"

That the master of the house was surprised when he beheld his callers cannot be doubted. His face betrayed it, though he greeted them pleasantly. As for the guests thus suddenly recalled to a remembrance of their errand, they glanced furtively at each other, and were silent for a moment.

"Parson," burst forth Dirk, desperately, "we've come—we've come to—that is to say, if you'll 'pint a preachin' down to the Camp we'll all be there, an' a lot more o' the fellers." He concluded with a savage glance at his companions, which challenged them to dispute him at their peril; but no one offered the slightest opposition. They drew a long breath of relief, indeed, as the astonished preacher made his appointment, and then they quickly took their departure. Half way down the winding path a figure dodging behind the trees was anxiously watching their approach. Sam espied and pounced upon it, dragging little Jim out into the moonlight.

"You young rascal! did you know there was a woman—a sick woman an' a little gal up there?"

Jim, under the shaking, chattered something that might have been an affirmative.

"Then why didn't ye say so?"

"'Cause I wanted ye to go an' see," ventured Jim, feeling that the hand on his collar was, after all, not a very angry one.

There was an unusually quiet session around the campfire that evening, and the pipes were smoked meditatively.

"When I was a youngster, 'way back East, they uster have donation parties, or somethin', for the parson—carried him slathers of things."

"That's the talk!" said Dirk, with a sudden lightning of his dark face. "Go up to Hard Licks to-morrow, eh, an' scoop the store?"

The proposition was carried by acclamation. Hard Licks was not a large town, but it had a high opinion of its own importance, and its shop windows were gorgeous. These latter furnished the chief suggestions concerning what would be useful to the poor missionary's family, and the buyers were lavish, so that it is safe to say that such a donation party was never seen before. More critical people might have objected that a crimson silk dressing-gown for the invalid and gay sashes for the sober little maiden did not harmonize with their surroundings; but the committee from Hustler's Camp was not critical, and indulged its eye for color regardless of expense. Useful articles by the quantity went with the finery, however, and the little cabin on the hillside was fairly inundated with comforts and luxuries.

"Blest if our parson shan't live like other folks' parsons!" said Sam, voicing the sentiment of the camp.

And the patient, persevering missionary? He looked up with eyes grown dim, and whispered to one beyond the clouds:

"Dear Lord, I want to win these souls for Thee, and thou hast opened wide the door!"

—Kate W. Hamilton in the Independent.

How They Began.

Senator Farwell began life as a surveyor. Cornelius Vanderbilt began life as a farmer.

Wanamaker's first salary was \$1.25 a week.

A. T. Stewart made his start as a school teacher.

Jim Keene drove a milk wagon in a California town.

Cyrus Field began life as a clerk in a New England store.

Pulitzer once acted as stoker on a Mississippi steamboat.

"Lucky" Baldwin worked on his father's farm in Indiana.

Dave Sinton sold sugar over an Ohio counter for \$1 a week.

Moses Taylor clerked in Water street, New York, at \$2 a week.

George W. Childs was an errand boy for a bookseller at \$4 a month.

J. C. Flood, the California millionaire, kept a saloon in San Francisco.

P. T. Barnum earned a salary as bartender in Niblo's theater, New York.

Jay Gould canvassed Delaware county, New York, selling maps at \$1.50 apiece.

C. P. Huntington sold butter and eggs for what he could get a pound and dozen.

Andrew Carnegie did his first work in a Pittsburg telegraph office at \$3 a week.

Whitelaw Reid did work as a correspondent of a Cincinnati newspaper for \$5 a week.

It has been shrewdly said that when men abuse us we should suspect ourselves, and when they praise us, them. It is a rare instance of virtue to despise censure which we do not deserve, and still more rare to despise praise which we do.—Colton.

A Wonderful Army.

As an example of what can be accomplished by zeal when applied to an object calculated to win the devotion of religious zealots, the growth of the Salvation Army is remarkable. Other religious sects, for this army of slum-workers must be considered as distinct a religious sect as the Presbyterians, though not bound by an inflexible and ancient creed, have also been founded in obscurity, struggled under the burden of ridicule, opprobrium and persecution, and yet grown to good proportions. Persecution has never yet stamped out a religion. The true religion cannot thus be put down, and to the zealot of any creed or any race, the religion espoused by him is the only true one. Religion thrives upon persecution. Examples of steadfastness in the faith, of heroic martyrdom, of resolute self-sacrifice, appeal strongly to man's emotional nature, and the very means taken to subdue became the vehicles of proselytism. To the jeers of the mob, the interference by the police with street parades, the sticks and stones, the broken heads and bloody noses, the jibes of the public press, the scornful criticism of the orthodox churches, the social ostracism of Christians engaged in this work by their brethren of the more refined and select churches, amounting in some instances to the disowning of their children by pious but bigoted parents, more than to the zeal and wise direction of its organization and work by its founders, does the Salvation Army owe its wonderful growth and the potent enthusiasm of its members.

It is but twenty-eight years since one man began this work among the outcasts of society, and preached and labored among the miserable thousands beyond the pale of the churches and practically outside the field of their endeavor. In an old dance-hall in Mile End, London, this slum work was commenced, and in but little more than a quarter of a century has been evolved a strong, zealous, energetic and successful organization, reaching to the farthest corners of the earth, having branches in thirty-eight countries, with 11,000 officers, both men and women, to direct its operations, maintaining 5600 mission stations and printing 55,000,000 copies of a paper to advance its ends. It has 95 training schools, 55 slum posts, 55 stations for erring women and 555 regular posts in the United States. Last year 13,199,188 people attended the meetings, nearly all of them being persons beyond the influence, and, it might almost be said, beyond the thoughts of the regular churches. By the very magnitude of its accomplishments, the Salvation Army has compelled tolerance and is rapidly compelling respect. Thinking, earnest men in the pulpit, from the very beginning, struggled against the almost unanimous sentiment of hostility to this noisy band of slum-workers that pervaded the churches, and sought to lead their congregation into some effort to reach the classes of people to whom the Salvationists devote themselves. They went slumming, and related as a horrible revelation to their congregations the sin, misery, want and neglect they found in the tenement districts. They pointed out to their hearers how impossible it was to get these neglected and degraded masses to attend the softly-cushioned churches, where they knew they were not wanted. Here and there a little extra zeal in mission work was the result, but the accomplishment was practically nothing. The utter divorce between the orthodox churches and the degraded inhabitants of the slums was only the more emphasized. Increased toleration and respect for the Salvation Army and its work is about all that has been accomplished in the churches by the efforts of earnest pulpites to extend the field of church labor to the slums.

Why the churches fail and the Salvationists succeed in their slum work is very apparent to the student of human nature. The former work from above and outside, while the latter get upon the same level and work from the inside. The church mission stands in the slums like a foreign substance in the human body. It cannot be harmonized and absorbed, and may create irritation. It comes at intervals as an outside influence, while the Salvationist worker lives with the object of his quest and becomes identified with him. One of the strongest causes for the successful work of this organization is the fact that the majority of its workers have come from the slums themselves. They know slum life in all its phases and know how to reach the sensibilities of their old companions. They stand on the same intellectual and social level with those among whom they work, and do not repel them by unconscious assertion of superiority. This distinction between the church mission and the Salvation Army post is founded

upon unchangeable human nature, and cannot be effaced. The former has the only means by which practical work may be done among that class of people. This does not mean the drums and mockery of military show, though that plays no inconsiderable part, but refers to the spirit, zeal and individual methods of the army and its personal identification with the very life of the section in which it labors. The church cannot adopt Salvation Army methods, for the limitations of human methods forbid. All it can do is to recognize the work of that organization, as it is learning to do, remove the proscription of its members, and give them encouragement and assistance instead of the cold shoulder. In other words it should recognize its own failure to reach the degraded masses, accept its position as an organization for the spiritual consolation and regeneration of those who can afford to pay for being consoled or regenerated, and turn over the work of consoling and regenerating those who must literally obtain their salvation "without money and without price" to the organization prepared to bestow it on those terms.

Hints to Housekeepers.

Use old matting under carpets.
Begin your morning meal with fruit.
Don't go to work immediately after eating.
Rise in the morning soon after you are awake.
Be moderate in the use of liquids at all seasons.
For grease spots equal parts of ether and chloroform.
If possible, go to bed at the same hour every night.
Try thin slices of pork on the breast of a turkey or chicken when roasting.
To clean a sewing machine of oil and dirt, go over it with a rag wet with coal oil.
Gum arabic and gum tragacanth in equal parts, dissolved in hot water, make the best and most convenient mucilage to keep in the house.
When there is not time to ice a cake, remember that its appearance may be greatly improved by dredging the top with a little powdered sugar.

When lamps are not in use for a week or more, the oil should be poured out, or the stale oil will cause an unpleasant smell when next it is lighted.

For a very bad burn melt beeswax, and into this pour sweet oil until it makes a salve which can be readily spread with a soft brush. Keep every part covered with the salve.

Powdered starch will take stains out of linen if applied immediately. Tea stains may be removed from a table cloth by immersing it in a strong solution of sugar for a few minutes, and then rinsing it in soft water.

Bits of toilet soap which are very small may be utilized. Make a bag of Turkish towelling about nine inches square and put in it all the small pieces of soap. When three-quarters filled, sew up the end and use the same as if it were a cake of soap.

It has been aptly said that there is not the remotest corner of the inlet of the minute blood vessels of the human body that does not feel some wavelet from the convulsions occasioned by good, hearty laughter. The life principle of the central man is shaken to its innermost depth, sending new tides of life and strength to the surface, thus materially tending to insure good health to the persons who indulge therein.

A cheap and pretty rug is made of pieces of carpet, such as may be purchased at slight cost at almost any carpet factory. In the center of a piece of canvas one and one-half yards long and three-fourths of a yard wide place a ten-inch square of the carpet, sewing it on firmly. In the corners of the square put small half-squares, having the opposite corners match. The rest may be filled with half-squares of any desirable size. Bind the edges with olive-green braid.

There is a point of etiquette which is woefully and very often abused. That is the asking of pointed questions. No one has any right to demand information of another whose interests are not very closely intertwined with the inquisitor and connected with the inquisition. But it is a thing which many good and kindly people are most careless about, simply from want of thought far more than the apparent curiosity. A proper interest is one thing; leading questions are quite another thing.

Time is infinitely long, and each day is a vessel into which a great deal may be poured, if we actually fill it up.—Goethe.

Aids to Longevity.

The philosopher may balance the advantages and disadvantages of long life, and may decide in favor of a short time of human existence. But it is clearly a prime part of the business of the physician to make life as long as possible, and as comfortable. There are two sorts of pressure which tend to shorten life—blood pressure within and atmospheric pressure without. This latter is a specially important factor in a humid climate like our own. In advancing age the circulation of the blood and lymph tends to become slow, and the enfeebled heart finds its embarrassments increased by this condition. Especially do the more vascular organs, such as the lungs, the liver and the kidneys, put skids on the wheels of the blood circulation. Plainly, then, an important condition of cardiac easement, and therefore of life prolongation, is the maintenance of an uncongested state of lung, liver and kidney. Thus are internal pressures relieved, and thus is cardiac energy conserved. Of almost equal importance, at any rate in Great Britain, is the question of atmospheric pressure and moisture to aged persons. Situations which are at once low-lying and damp give, of course, a maximum of atmospheric pressure. Such pressure weighs down at a single stroke body, mind and life. The difference to aged persons between living at the sea level and living 500 feet above it, between living in a moist atmosphere and living in a dry one, is sometimes quite incalculable. Not seldom life may be lengthened by five or even ten years by living in an atmosphere which is both light and dry. These physiological considerations are commended to the aged and to the physician of the aged. While physiological explorers are busy in the laboratory, clinicians must not imagine that new discoveries can be applied in practice without constant and intelligent effort on their part. Knowledge, like freedom, "filters slowly down," but there is no objection to a little artificial acceleration of the pace.—Hospital.

How Old Is the Human Race?

The fullest answer that science can yet give to the three most interesting questions, perhaps, ever asked in the world is explained in an interesting article in the December *Forum*, by Daniel G. Brinton, the ethnologist. These questions are: "When did the first man appear?" "By what process did he appear?" and "Where did he appear?" Summing up all that geologists and anthropologists know, he appeared certainly 50,000 years ago, and it may be as many as 200,000 years ago. The evidences of his existence which date back 50,000 years are unmistakable. By what process he came into being, science has no definite answer. If it refuse to accept the doctrine of specific creation, it must refuse also, for lack of complete evidence, to accept the doctrine of gradual evolution—the old Darwinian doctrine. Dr. Brinton thinks the theory of "evolution by a leap" is as good as any other theory. According to this, man sprung from some high order of mammal, the great tree-ape, perhaps, by a freak, just as men of genius are freaks, and as all the vegetable and animal kingdom show freaks. As to where man first appeared, it is beyond doubt that his earliest home was in Southern Europe, or Asia, or North Africa. No earlier traces of him have been found than those found in the area that is now England, France and Spain.

Boiling Water Not Always Hot.

"Cold boiling water, indeed! Boiling water is the hottest kind of thing. Don't I know? Haven't I scalded my fingers more than once with water from the teakettle?" James is right, and yet he is wrong, remarks the *New Orleans Times-Democrat*. Boiling water is not always very hot water, in spite of his painful experience. This is the way it happens:

When the water boils, ordinarily it is because great heat has separated the tiny particles of the water, forcing upward and outward in lively bubbles the air which is contained in them. This is done in spite of the downward pressure of the atmosphere. After the water has become hot enough to boil, it can get no hotter, because the air escapes as fast as it is sufficiently heated to do so.

There are places on the earth where the pressure of the atmosphere upon the water is so slight that it requires but little heat to push apart the particles and set free the air bubbles which are confined in the water, so it begins to boil before it becomes very hot. It ought hardly to be called cold water, perhaps, but it is certainly far from being as

hot as ordinary boiling water. This state of things is found on all high mountain tops, as the atmosphere grows weaker and its pressure less as one ascends.

A gentleman traveling at a great elevation in the Andes mountains put some potatoes in a pot of water over a hot fire. The water began to boil almost immediately, but the potatoes did not cook. All the afternoon and all night the water bubbled and boiled, but still the potatoes were not cooked. The boiling water was not hot enough.

Fashion Notes.

Coarse, pliable straws are a special feature of millinery.

A new idea for the coming summer is to have skirts and sunshades to match.

Crepon appears in a new guise, which resembles the rugged stem of old tree bark.

The use of French cashmere is revived again. It drapes beautifully, and combines prettily with changeable taffeta silks.

Plaids are coming in again. Fine little checks, with green, yellow and black combined, are the favorite mixture in taffeta silk.

Skirts are slightly stiffened in the neck by an interlining of stiff muslin or grass cloth which comes for this purpose. It is more pliable than hair cloth and not so heavy.

A pretty idea for skirt trimming is black and white ribbon sewed together, gathered on one edge like a ruffle and finished at each side of the front breadth with a rosette.

A new material called "bure" is being used in Paris. It is closely woven, like canvas or nun's veiling, with heavy threads, and has a fancy surface which gives it the appearance of being heavy.

The rage for chiffon must be at its height, for it can hardly be employed in more ways than at the present time. It trims wool and silk dresses alike, frilled on in narrow ruffles to take the place of lace, and entire dresses are made of this gauzy stuff.

A pretty evening waist to be worn with a black satin or moire skirt can be made of black gauze jetted in rays, and under this is creamy white gauze which escapes from it to form a finish at the neck, and to make full sleeves which are spangled with gold. Around the waist is a twist of deep rose-colored velvet.

The short blouse which used to disappear under the skirt at the belt has had its day, and all the new ones have a slightly full basque below the waist. A pretty black dotted nainsook blouse has a gathered yoke, barred across with narrow black insertion, a moire ribbon belt with an antique silver buckle and a black moire bow at the neck with frilled lace ends. Norfolk plaited blouses are also worn, and if made of a color they have black surah cuffs and necktie.

Already the ginghams with chine stripes and most wonderful coloring, as soft and exquisite as silken fabrics may show, the chilies with their pretty flowerets in Dresden colors and with silk bars and stripes, the dainty corded dimities, the pretty China silks with odd, old-fashioned patterns, the sprigged lawns and fine muslins are on the counters of the shops, and with them all sorts of beautiful silks and wools in short lengths at reduced prices appear in a very embarrassment of riches, and at prices so low it seems downright extravagance not to buy them.

Origin of the Dollar Mark—Five Theories.

Below I give five theories of the origin of the dollar mark (\$), they being selected from about twenty seemingly plausible solutions:

1. That it is a combination of "U. S.," the initials of the United States.
2. That it is a modification of the figure 8, the dollar being formerly called a "piece of eight."
3. That it is derived from a representation of the pillars of Hercules, consisting of

two needle-like towers or pillars connected with a scroll. The old Spanish coins marked with the pillar device were frequently referred to as "pillar dollars."

4. That it is a combination of "H. S.," the ancient Roman mark of unit money.

5. That it is a combination of P and S, from peso duro, signifying "hard dollar." In Spanish accounts peso is constructed by writing the S over the P, and placing it after the sum.

According to one writer the symbol of the dollar is a monogram of the letters "V," "S" and "J," the dollar being originally a "thaler," coined in the valley of Sankt Joachim, Bohemia, and known as a "Joachims thaler," and the monogram the initials of the words, "Valley Sankt Joachim." A writer in giving his opinion of "Reason No. 3," as given above, says:

"The American symbol for dollar is taken from the Spanish dollar, and the origin of the sign, of course, must be looked for in associations of Spanish coins. On the reverse of the Spanish dollar is a representation of the pillars of Hercules, and around each pillar is a scroll with the inscription 'plus ultra.' This device in course of time has degenerated into the sign which at present stands for American as well as Spanish dollars, '\$.' The scroll around the pillars represents the two serpents sent by Juno to destroy Hercules in his cradle in mythologic lore."—St. Louis Republic.

Where Did the Tails Go?

The apostles of evolution have never satisfactorily accounted for the disappearance of tails among mankind. It is interesting, therefore, to read that Prof. Drummond thinks the end of the vertebral column, consisting of three, four and occasionally five vertebrae, called the coccyx, forms the real rudimentary tail. In the adult this is always concealed beneath the skin, but in the embryo, both in man and apes, in an early stage it is much longer than the limbs. What seems decisive as to its true nature, however, is that even in the embryo of man the muscles for wagging the tail still exist. In the grown up human being those muscles are represented by bands of fibrous tissue, but cases are known where the actual muscles persist through life. That a distinct external tail should not be still found in man may seem to refute the arguments of the evolutionists, but it would have been contrary to the theory of descent had he possessed a longer tail, for all the anthropoids most allied to man have long since parted with theirs, so the absence of tails is more favorable to the idea of evolution than their presence would have been.

Winding and Setting Tower Clocks

The winding and setting of a good-sized tower clock of the time-honored pattern is by no means a small job, inasmuch as the raising of a ton or so of dead weight to the top of a high tower once a week is necessarily a work of time as well as labor. All this drudgery, it appears, is henceforth to be performed by the ubiquitous electric motor. A new clock recently placed in a building of the Waterbury Clock Co., Waterbury, Conn., is not more than one-fourth the weight of a tower clock of the ordinary type, having dials of equal diameter, and the whole machinery is operated by electric motors supplied with current from a sal-ammoniac battery of ten cells, which will run for a year or two without renewal. The great saving in actual power required to propel the clock largely results from the fact that the electric force is applied directly to the point where needed, without the intervention of the complex mechanism essential in weight clocks of the ordinary type.

Learning hath gained most by those books by which the printers have lost.—Thomas Fuller.

Pin thy faith to no man's sleeve; hast thou not two eyes of thy own.—Carlyle.

Highest of all in Leavening Power.—Latest U. S. Gov't Report.

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Random Thoughts.

By A. P. ROACHE, W. M. S. G. of California.

With loving hearts and willing hands,
We are cheered while journeying through the lands.

Haywards, Pescadero, Watsonville and
San Jose this week! Success, good meet-
ings and fraternity and mutual benefit to
all!

With beauty smiling all around,
The farmer works his famished ground,
And skyward casts his anxious eye
In hope the aqueous clouds to spy.

The meeting at Haywards was another of those pleasing features of grange work which confer such lasting benefits. Bro. and Sister Hollister are a host in the cause, while the worthy master, Sister Dennis, and others added a strong force to their well-drilled grange army. A late good-night gave us only time to catch our train for the next appointment, which we reached in due time by rail and stage, and found ourselves in the hands of the generous and thoughtful Pescadero patrons, with whom we enjoyed a pleasant morning session and an open meeting in their cozy church, which was filled by an appreciative audience. This has been one of our best meetings. Bro. Steele sent us on our way rejoicing toward Santa Cruz; and, after a short rest and a tempting lunch at the Steele mansion, we were fairly on our 40-mile drive to make train connection for Watsonville. Here we were met by the wide-awake master, who, with a swift pair of trotters, showed the visitors the sugar factory and farms. Next day found us in custody of Bro. Jones and the master of San Jose Grange and its worthy member. After much sight-seeing, we were officially introduced by Master McGlinchey to his splendid grange and were given the satisfaction of distressing them until nearly night. We were then forgiven and cared for as only patrons can do it. It is needless to add that in all these meetings there have been closed meetings followed by regular flush times, harvest feasts with programmes and open meetings. And in all these friendly talks and public addresses, the Worthy National Lecturer has struck hard and telling blows for the cause which he so faithfully and ably represents. We have been cheered along the way by the presence of Bro. Logan, Bro. Ostrom, Bro. Walton, Bro. and Sister Dewey and Sister Roache. More anon, as flying trains and close engagements and constant questions and answers seriously interfere with RURAL notes.

The Secretary's Column.

Owing to a rush of office duties since the Grange Congress the Secretary's Column was unavoidably omitted in last week's issue. I hope, however, to furnish news from time to time as may be gleaned through this office.

The programme for the congress as formulated by the executive committee was carried out with but one or two exceptions. All those present voted the congress a grand congress.

Much credit is due Bro. E. Greer, superintendent of the Northern and Central California Building, for his kind attention in entertaining the members of the order, and for kindly donating his office for the headquarters of the State Grange and visiting Patrons while in attendance at the congress; also Prof. Emory E. Smith, of the Horticultural Building, for courtesies extended, and for supplying the headquarters with stationery for the use of Patrons while visiting Sunset City.

Everyone at the congress seemed to enjoy themselves, and no doubt the two days spent in viewing the sights and scenes will be long remembered by those present.

At the regular meeting of the executive committee, held April 3, 1894, the following preamble and resolutions were unanimously adopted:

WHEREAS, It is reported that the Secretary of Agriculture omitted to recommend an appropriation for the continuance of the Agricultural Experiment Stations in California, and,

Whereas, If the annual and necessary appropriations are withheld, an incalculable amount of injury would be done, not only in the loss of property at the several stations in the State, but in stopping experiments now in progress which are and have been of great benefit to all branches of agricultural industry in California; therefore be it

Resolved, That our members in Congress be, and they are, hereby, respectfully requested to use all honorable means to have the usual appropriations by Congress continued.

Resolved, That the executive committee of the

State Grange of California direct the secretary thereof to forward a copy of these resolutions to our members in Congress.

And in compliance with the above instructions each member in Congress has been duly supplied with a copy, under seal.

Bro. Messer entertained the Grange Congress on three different occasions, speaking from twenty-five minutes to one hour. His remarks were well timed, explaining what the grange had done and what it is now doing in the United States, and especially what it is accomplishing in the New England States. His remarks were well received and greatly appreciated by all. Bro. Messer will remain in the State until the 7th of May, and it is to be hoped that every member of the order will not miss the opportunity to hear him.

Sonoma County Pomona Grange met in regular session Wednesday, April 18, 1894. All the granges in the county were represented. A harvest feast was prepared by the sisters and greatly enjoyed by all. Much business was transacted. Several important resolutions were presented. Next meeting, third Wednesday in July.

A request for blanks, instructions, etc., for organizing a grange, has been received, and the same have been forwarded from this office, and I expect to report a new grange before many weeks. Who will be the first to organize a new grange in '94? Blank applications and instructions how to organize and reorganize a grange, aims and objects, declaration of purposes, etc., will be furnished free from this office on application.

At a special meeting of the executive committee, held April 12, 1894, the special committee appointed at the last session of California State Grange to consider Mr. D. Lubin's "Novel Plan on Transportation" submitted the following report:

SAN FRANCISCO, April 12, 1894.

To the Executive Committee of California State Grange:

GENTLEMEN:—Your committee, appointed at the last session of the State Grange at Petaluma to consider and report on the accompanying plan of protection to staple agricultural products as advocated by Mr. D. Lubin, hereby begs leave to report as follows:

1st. We believe that the adoption of the plan would, in our judgment, be beneficial, not alone to the great agricultural interests of our country, but would prove of equal advantage to labor and commerce.

2d. We heartily endorse the proposition, and recommend its adoption and earnest advocacy by the State Grange of California, or by the executive committee of the State Grange.

Signed, this 12th day of April, 1894, at California Building, Midwinter Fair.

E. GREER, Chairman.
M. T. NOYES,
D. A. OSTROM,
S. T. COULTER,
GEORGE OHLEVER, SR.

On motion, the report of the committee was adopted and committee discharged, and the whole matter placed before the subordinate granges for consideration, and approval or rejection, at or before the next meeting of California State Grange.

A circular letter will be immediately sent to the secretary of each subordinate grange, under seal, accompanied by the plan (Classification 3 of a Novel Proposition, etc.), for the approval or rejection as the case may be.

In a recent letter from Mr. Lubin he states that he is willing to reply to any and all objections to the full capacity of his ability; and he respectfully requests as a matter of justice, before any adverse conclusions are determined on by anyone, that he be given an opportunity to debate the matter by mail or in person. Invitations to appear in person should be sent a sufficient time ahead to enable him to arrange his affairs for acceptance. He accepts no expenses whatever, and requests that none be incurred for hall rent or notices; and for this proposition open meetings are generally best.

On invitation of the master of Merced Grange, Mr. Lubin will address an open meeting at Merced on May 5th.

This office acknowledges receipt of annual proceedings of Vermont, Colorado and New York State Granges; also the official directory of Vermont State Grange, giving a complete list of the officers of State Grange, Pomona and subordinate granges, and State and county deputies—a neat and valuable pamphlet for reference, showing where the permanent officers of the grange may be found in the Green Mountain State.

The directory of the subordinate granges in this State will soon be published and forwarded to each subordinate grange therein.

Address all communications for California State Grange to Don Mills, Santa Rosa, Cal.

Programme for the Campaign of 1894.

The following programme has been arranged by the Executive Committee of the California State Grange. Bro. Messer, Worthy Lecturer of the National Grange, and Bro. Roache, Worthy Master of the California State Grange, will address the members of the order and citizens at the places herein named:

Petaluma and Two Rock—Sonoma Co. (Address at Petaluma).....	Friday,	April 27
Sacramento, American River and Enterprise—Sacramento Co. (Address at Sacramento).....	Saturday,	" 28
Elk Grove and Florin—Sacramento Co. (Address at Florin).....	Monday,	" 30
Lodi, Woodbridge, New Hope and Lockeford—Address at Lodi.....	Tuesday,	May 1
Roseville—Placer Co.....	Wednesday,	" 2
Wheatland—Yuba Co.....	Thursday,	" 3
Grimes and Antelope—Address at Grimes.....	Friday,	" 4
North Butte, March, South Sutter and Yuba City—Address at Yuba City.....	Saturday,	" 5

By order of the Executive Committee.
DON MILLS, Secretary.

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San Francisco, Cal.



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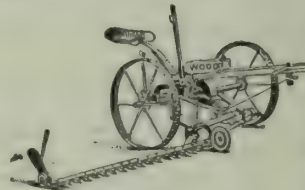
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A. BUSCHK, Tracy, Cal., Breeder of S. C. White Leghorns and B. P. Rocks. Eggs \$1, \$1.50 per setting.

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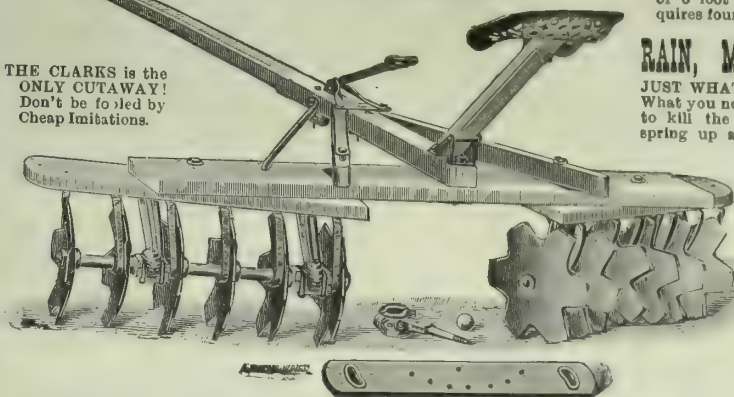
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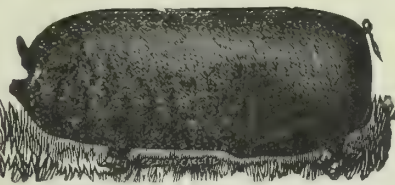
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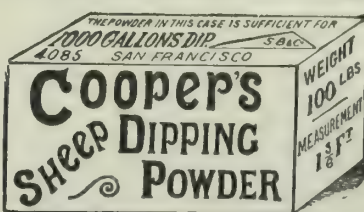
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AGRICULTURAL NOTES.

CALIFORNIA.

Alameda.

Haywards Journal: The fruit-growers got a share of the prevailing bad luck by the appearance of a heavy white frost Monday and Tuesday mornings of last week. In interviews with several orchardists we find that the Royal Anne crop has been badly nipped. A person could easily notice the frost on the cherry trees a couple of days later. They have the appearance of being scorched. There is no doubt but that the Royal Anne crop has been badly damaged in this valley. So far as apricots are concerned, we have not heard of any serious damage being done. The injury to vegetables was quite extensive, particularly to potatoes, and nearly every one we have met who has planted potatoes, complains of nearly a two-thirds loss, while down in the valley toward San Lorenzo we hear that the loss is even greater. Green peas did not sustain any loss whatever. John Penke of Mt. Eden was in town Wednesday, and he reports the crops around the hamlet as looking extremely well and not suffering for rain.

Livermore Herald: We have talked with farmers from different parts of the valley during the past week and while none of them have reported the grain as generally suffering as yet, many were apprehensive of the future. Generally speaking, the summer fallow and early-sown grain are growing nicely. The winds have caused a crust to form on the surface and if we had just enough rain to loosen it up the grain would make a sudden spurt and soon be beyond the point of danger. The dry spell is also interfering with the cultivation of the vineyards and work in that line is backward in several localities. There was a light frost Sunday and Monday nights that nipped the early vines in several localities.

Butte.

Gridley Herald: The low price of wheat has caused the producers to turn their attention to diversified productions, and incubators and beehives are in demand. An adobe farmer has over 1200 spring chickens, and more coming.

Key & Harrison of San Francisco have gone into the poultry business here, says the *Oroville Register*, upon an extensive scale. They have three incubators now completed and will build seven more. The three now ready have been filled with eggs, and the manager of the place, Mr. Goodwin, expects to hatch out from 2500 to 3000 chicks per month. They are building a number of hen houses, and these are so constructed that they can be moved from place to place upon the land.

Colusa.

Marysville Appeal: John Vaughn, who returned from a trip to Colusa county on Monday, reports the grain crop in Reclamation district No. 108, on the Sacramento river, to be looking unusually fine. Thousands of acres of wheat all the way from Howell's Point to Grime's Landing stands up as high as a wagon-wheel and is all headed out. Barley, corn and other products are also promising large yields.

Humboldt.

Eureka Standard: There is no use attempting to disguise the fact that many of the large range-owners in this county are sorely pressed to meet their financial obligations at the present time, and the number includes some of our best and most upright and public-spirited citizens. It is only the truth to say that during a succession of shearing seasons they have been fighting against fate, hoping for a change for the better, which has not come. So far as we have been able to learn, creditors of financially distressed range-owners have been lenient and sympathetic, and in no single instance has a resort to forced measures been adopted.

Kern.

Gazette: While the complaint of the drouth comes from other quarters, the Kern valley farmer rests secure in the knowledge that he is safe. He must of necessity gain by reason of the losses of others. His products will not dry up. He can turn the water on whenever he desires, and a bountiful harvest is assured. He has a demand for all the pasturage that he has, and he will secure good prices for all his products. We believe that the effects of the present season will result in extensive irrigation schemes throughout the State, for the people must protect themselves against a recurrence of their present troubles.

Kings.

Hanford Sentinel: A little black bug is boring out the buds of many trees recently planted and some of them have injured the older trees. The remedy: Take a piece of paper six inches square, cut a slit to the center, put it around the body of the tree at the ground, put a clod on it to hold it there; drop a little mixture of Paris green and syrup upon the paper and await developments. In the morning you will find the bugs dead or stupid on and under the paper. There is also a cutworm eating the foliage of peaches, prunes, etc. Remedy: Take a half bushel of wheat bran, one-half pound of Paris green, sprinkle the bran with a little sweetened water until it becomes damp, then sprinkle the Paris green upon it, stir well, put two or three table-spoonfuls of the mixture at the roots of the tree, or you may spray the foliage with Paris green mixed in the proportion of one pound to 180 gallons of water. Either remedy will do the work. Wherever insects are troubling trees, irrigate well. These are Commissioner Motheral's remedies and should be applied to all trees that are troubled by the pests.

Lake.

Hops in Lake county are more forward than last year, and the prospects are flattering. More than an average crop is expected. The acreage has been somewhat increased. About 130 acres will be in bearing this year, which will yield an average of 1600 pounds to the acre.

Los Angeles.

Pasadena Crown Vista: Lack of rain is causing considerable uneasiness among those who have grain in. It is evident that unless we have rain soon some loss will accrue to those depending entirely upon the grain crop, and having no means for

irrigation. Prices on grain and hay have materially advanced within the past few weeks, but crop prospects are scarcely responsible for ruling rates.

San Miguel Reporter: An Abyssinian banana tree has been added to the collection of tropical plants and fruits displayed by Los Angeles county in the Southern California building at the Mid-winter Fair. The tree has been planted in front of the building and attracts much attention. It is of a totally different appearance from the ordinary banana tree—much shorter. The trunk is very thick at the base, and the fruit, instead of hanging at the end of a long stem, forms on the main stock, which bends over as the bunch grows. The tree bears heavily, but the fruit is very much smaller than that of the ordinary banana. Another peculiarity is that this variety contains seeds. The exhibitor is Jacob Miller, who grew the plant at Cahuenga, six miles from the city of Los Angeles.

Marin.

San Rafael Tocsin: Except in a few spots, rain will do the grass no good now, and in most localities it would be positively harmful to it. Barley is gone beyond redemption, but there is still a chance for the wheat and oat hay crop, if rain comes within the next few days. What is to become of the live stock in this county during the next eight or nine months is a problem to which the owners of it should address themselves without delay.

Monterey.

Neal Layman will irrigate 400 acres of grain near San Antonio by pumping water from the river.

Salinas Index: S. M. Shearer, the grain-buyer, took a trip of observation through the Blanco district yesterday. He says that in most places thereabouts there will be a fair crop of wheat and barley without any more rain, but that with some showers this month and next the yield would be immense. Beets and potatoes are looking well and promise a good yield, although the latter were somewhat nipped by Tuesday night's frost.

Orange.

According to the report of a member of the Industrial Committee of the State Board of Trade, Orange county has the following acreage in fruit trees of various kinds: English walnuts, 2592; oranges, 5412; prunes, 1788; peaches, 1203; pears, 803; apricots, 1462; raisins, 422; lemons, 481; olives, 70; table grapes, 130; figs, 82; apples, 128; nectarines, 30; plums, 5; almonds, 2. This report was submitted to the State Committee a year or more ago, since which time the acreage in almost all lines of fruit has been largely increased.

San Diego.

San Jacinto Register: From present indications, the deciduous fruit crop of this section will be the largest ever known. Peaches, pears, apples, prunes and late apricot buds hang on the trees as thick as it is possible for them to hang. There will be but a very limited amount of the early variety of apricots, as the frost of a month ago killed nearly all the buds that were out.

San Luis Obispo.

Oak Park letter in San Luis Obispo Tribune: The farmers throughout this section have given up all hopes of more rain and during the past week a good part of the seeding has been done, several having entirely finished. The fruit trees are in a great mass of bloom. The apricots and peaches have set well, and from present appearances they promise large yields.

San Joaquin.

Lodi Sentinel: The cypress trees in the northern part of San Joaquin county have been affected with a most peculiar pest or insect. It is a small black bug about an eighth of an inch long and nearly as wide. It is of the beetle class, having a hard case-like shell over its body. It attacks the limbs at a point from three to eight inches from the end. The body of the limb at the point of attack is generally but little larger than the bug and it burrows itself into the limb and starts down the center of it toward the trunk of the tree; then the first puff of wind that comes along either breaks the twig off at the point of entrance or laps it over so that it hangs by nothing but the bark, and it then dies. Hundreds of these dead twigs may be seen hanging on any of the large cypress trees, or on the ground beneath the trees, around Lodi. Here is an opportunity for scientists, as no one seems to know where this bug came from or where he is going.

Stockton Mail: The island farmers, or at least those whose land escaped inundation last winter, are fortunate this season. Their crops will, it is said, mature without any further rain, and to complete their good luck their is now no danger of a high June freshet. Mr. Remington, tender at the San Joaquin bridge, who was in town lately, says that the snow in the mountains has been melting gradually for the last month and that now most of it has disappeared. This, he said, will prevent the high water that usually comes against the island levees in June. The cold north winds that have been blowing have done considerable damage to the upland crops in this county, but the grain is still in tolerably fair condition. Warm weather would be better than cold, for the night dews prevalent at this season of the year during such weather would assist in softening the crust that has formed around the grain stalks.

Santa Barbara.

Carpinteria letter: Beans and corn are now being planted, as chances for rain in any quantity sufficient to thoroughly wet the ground have generally been given up. Some land has quite a good amount of moisture and may produce a fair crop with no more rain, if we have good seasonable fogs. Alfalfa hay is being cut and is proving a veritable bonanza to those farmers fortunate enough to have a patch of it. Barley hay is heading out and some fields will probably pay for cutting. Flax is not promising any profit whatever, still a rain would bring out some fields. E. E. Raser, who has a contract to raise improved lima beans at six cents per pound, is having some extensive irrigation done on his place, near Carpinteria creek. The water is being raised from the creek by a large engine, which pumps up 300 gallons a minute. Fruit is settling well and has not come out so uniformly and budded so well for years.

Santa Maria Times: If reports are true the Lompoc rain-maker is no slouch. He charged those good people \$65 for chemicals so that, rain or shine, he is probably clearing good wages for the time

spent boiling his caldron; and had the dry west wind turned into rain within the allotted ten days the Lompoc would have paid for betting against the weather. Dry and late as it is, it is not really safe now to bet that it will not rain within ten days.

Santa Maria Times: It may seem strange, if not cruel, to Eastern people to hear of our dairymen killing cows to feed to hogs, but when they learn that the slaughtered cows are pioneers and have long since seen their best days, and that they are as cheap hog feed as can be obtained, they will begin to realize that this is but one way of doing the same thing that all dairymen must do—dispose of the culls to the best advantage. Ordinarily, feed is so cheap here that no attention is given to this branch of the industry, but in years of short feed they make up for lost time.

Santa Clara.

Gilroy Advocate: The orchards south of Gilroy on the moist lands between town and the Carnadero have splendid crop prospects, and no additional rainfall is needed to insure a heavy yield from the thousands of thrifty-looking trees. The newly planted trees will have to be watered, and the bucket and hose will be brought into use in the absence of rain.

Santa Cruz.

Pajaronian, April 21: The beet-planting season is almost over. The continued dry weather has cut the contracted acreage considerably, but it is estimated that not less than 9000 acres will be seeded, and on nearly the entire acreage a first-class stand is expected. This section has had 20 inches of rain during the season, the ground below the crust is full of moisture, and wherever the beets are up they are in most flourishing condition. The reports of the coming beet crop have never been more satisfactory. If rains do not come, there will be less foul growth to fight. Occasional fogs like that on Saturday morning will boom the beet crop.

Pajaro valley will have quite an acreage in beans this year. Crop experts claim that this is a bean year. The crop is bound to be short in the southern counties and prices are moving upward.

Solano.

Solano Republican: From careful inquiring among the fruit men, we learn that the crop of pears, plums, peaches, prunes, apricots and cherries will be exceptionally good this season, the crop of apricots being unusually large. Almonds will not yield more than a quarter of a crop, the severe frost that prevailed early in March having had a very disastrous effect on them. Summer-fallow wheat is just beginning to show slight effects of the continuous dry weather of the past two months; but, with an occasional shower, there will be a good crop. Winter-sown grain is suffering from want of rain, and will not yield much. Hay will also be scarce this year.

Vacaville Reporter: The California Fruit Association is going to build a warehouse for the purpose of storing dried fruit. It will be 50 feet wide by 120 feet long.

Sonoma.

Santa Rosa Democrat: Although rain is needed, we hear good reports from both the grain and fruit crop in this valley. Fruit has set heavily and will require thinning for the best results. The early-sown grain is looking well. The underground supply of moisture is abundant, and it has begun to draw upward on cultivated lands, and the appearance of the vegetation is better than it was a week or ten days ago. We have no doubt about a further fall of rain; but if it should not come as soon as expected, Sonoma county will maintain its reputation for the best crops in the State in seasons of drouth. For the hay crop a good rainfall is needed and upland pastures also need it, but the valley lands are looking splendidly—better than ordinary—where the ground was well prepared for the crop.

Index-Tribune: The hay and grain crop of Sonoma valley will turn out better than was anticipated two or three weeks ago; and generally speaking, both will be fair even though not another drop of rain falls this season. Barley on the Senator Jones ranch, of which there is several thousand acres, has already commenced to head out. The hay fields in the vicinity of El Verano will turn out a fine yield. Hay and grain will command high figures this year; and as the fruit crop never looked more promising, the Sonoma valley farmer has bright prospects before him in the way of good crops and fair prices.

Many sheep men in the vicinity of Healdsburg are doing their shearing, and wool is beginning to come into market.

Tulare.

Tulare Times: Our farmers and ditch-owners will do well to bear in mind that a scarcity of water for summer use is threatened. Many have been building their hopes on an unlimited supply of snow in the mountains. We are reliably informed that such is not the case. I. D. Mullenix, of Three Rivers, and James McFadzean, of Exeter, one week ago made their way to Mineral King. They were the first persons to penetrate the mountains so far up this year. Their report is discouraging. Mr. Mullenix declares that there is at present no more snow at Mineral King than there was the middle of June last year. He doesn't think the Kaweah river will be any higher than it has been. This looks very much like a scarcity of water through the summer.

Register: Mr. A. Fay tells us that, six years ago, he had as much of his wheat cut for hay as it was thought would make hay, letting the rest go. Afterward, in May, a rain came, and the wheat which before was so nearly worthless as not to make hay, came on and turned out 140 sacks of good wheat.

Ventura.

Ventura letter: A number of orchardists here have begun irrigating their fruit trees. Many affect

to believe that there will be large crops of fruit, even though this is neglected. It is, however, the part of wisdom to supply the lack of natural rainfall where practicable. In that case, it is probable fruit buds for next year's crop will be perfected, which otherwise might not be.

Hueneme Herald: The outlook for a corn crop is equally discouraging, as there is, of course, too little moisture in the ground to bring on a crop. As to beans, many of our farmers think that with cool, foggy weather at the right time white beans may scratch through, but of limas few will mature.

A writer in the *Hueneme Herald* asks: Cannot beans be watered by hand? At first thought the idea does not seem feasible, but we have figured on the question a little and believe it can be done to advantage. There has been so very little rain this season that, as matters stand, the outlook for any sort of a bean crop is entirely discouraging. A farmer could exercise his ingenuity in getting up a suitable water cart, and could, we believe, cover a good deal of ground in a day. It may not work, but is worth a trial. By making a test, for say half a day, a farmer could soon determine what could be accomplished in this way. Work in other directions promises to be slack, and rather than see a bean field dry out entirely we should be tempted greatly to make the experiment.

Yolo.

A Winters correspondent figures it out that there are 3750 acres of bearing orchard in the vicinity of Winters. The same authority gives 3000 acres as the number of non-bearing trees.

Woodland Mail: Barley in the vicinity of Hungry Hollow is all headed out, and a continuation of dry weather will bring on haying in a few days. Farmers from that locality report late-sown grain as showing plainly the effects of the drouth. Barley is heading out not higher than six inches from the ground and the small crop will be difficult to save in harvesting. Early-sown grain and summer-fallow fields are looking well.

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CUTS AND WOUNDS.

—Recent commercial statistics of California, condensed, show that the mines yielded \$20,000,000 in 1893, of which \$13,000,000 was gold. The wheat crop was 36,158,000 bushels; grape brandy, 2,080,000 gallons; canned fruit, 1,124,300 cases; barley, 14,500,000 bushels; beans, 79,247,000 pounds; raisins, 63,490,000 pounds; dried fruits, 154,000,000 pounds; prunes, 46,725,000 pounds; wool, 30,600,000 pounds; hops, 48,000 bales; orange crop, season 1893-94, 9,000 carloads. Leading exports of California, estimated in pounds: Beans, 50,000,000; vegetables, 110,000,000; dried fruits, 92,000,000; value of wheat exported, \$13,037,421; flour, \$3,307,028; exports of wine, 11,252,253 gallons. Assessed valuation of California property, \$1,217,000,000; total county indebtedness, \$6,000,000; value of real estate, \$758,000,000; total deposits in savings banks, \$138,000,000. The assessed value of property in California has doubled since 1880. The population is 1,500,000. California is the second largest State in the Union, ranks first in gold product, honey, wine, raisins, oranges, almonds, walnuts; has the largest per capita wealth of any State in the Union. San Francisco is the third commercial city in the United States, and the leading whaling port of the world. The value of San Francisco manufactures is \$86,500,000. The total gold produced by California since 1849 is \$1,246,404,000.

RUDY'S PILE SUPPOSITORY is guaranteed to cure Piles and Constipation, or money refunded. 60 cents per box. Send stamp for circular and Free Sample to MARTIN RUDY, Lancaster, Pa. For sale by all first-class druggists.

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MONTEREY CYPRESS FOR SALE.

Everything for the Garden.
Catalogue Free.

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LEMON TREES FOR SALE.

I have some 15,000 Liebon and Eureka Lemon trees, budded from my own bearing orchard, for sale cheap.
NATHAN W. BLANCHARD, Santa Paula, Cal.

PLANTS Strawberry, Blackberry, Currant, Gooseberry, Asparagus, Grapes.
TREES Pear, Apple, Peach, Chestnut, Walnut.
Send for Catalogue.
J. S. COLLINS' SON, Moorestown, N. J.

WE SEND FREE, BY MAIL, AFTER RECEIPT OF ONE DOLLAR, ONE OF THE FOLLOWING COLLECTIONS OF PLANTS:

- 12 Roses,
- 15 Carnations,
- 15 Chrysanthemums,
- 15 Fuchsias,
- 15 Geraniums,
- 15 Heliotropes,



- 20 Assorted Summer Flowering Plants,
- 12 Dahlias,
- 12 Coleus,
- 12 Climbing Plants,
- 10 Oleanders,
- 24 Pansies,

DISTINCT VARIETIES. ALL PLANTS LABELED. TRUE TO NAME.

Grallert & Co., Florists, COLMA, San Mateo Co., Cal.

Send for full list of collections.

Be Sure and Give Us a Trial.

We Grow Only the Best Varieties.

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FLOWER and FOLIAGE PLANTS IN GREAT VARIETY.

Ferns, Cypress, Palms, Geraniums, Fuchsias, Carnations, Etc., Etc.

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A magnificent stock of Fruit Trees being grown for next season.

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Residence: Sausal Fruit Farm.

FOR THE SEASON OF 1893-94.

BUDDED ORANGE TREES, of leading varieties, one and two-year buds, also a small lot of choice budded and seedling LEMON TREES. Sweet Seedling Oranges, 1 to 4 years old. Shade and Ornamental Plants. Prices to suit the times.

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Seeds, Plants, Etc.

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ALL KINDS OF

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BLACKBERRY—Crandall's Early and Lawton, \$5 per 1000.

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CAULIFLOWER SEED, of large kind called the PISA; originally from Italy. Some raised by an Italian in Los Angeles county. Samples for trial furnished free. Apply to S. W. LEVY & CO., 218 & 220 Washington St., San Francisco.

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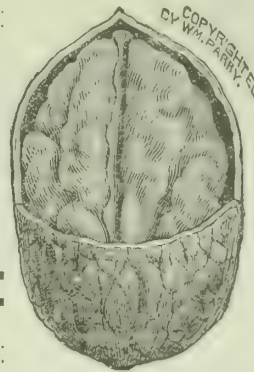
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Rio Bonito Nurseries, Biggs, Butte Co., Cal.

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:- SOFT SHELL :-



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:- WALNUT! :-

Our Stock of TREES and VINES is Most Complete in EVERY CLASS of Fruits.

A LARGE STOCK OF THOMPSON'S SEEDLESS GRAPES.

SHIPPING, CANNING and DRYING Fruits of all kinds.

Best Assortment of RAISIN and TABLE GRAPES in California.

Early Shipping Plums a Specialty.

SPECIAL PRICES FOR TREES IN LARGE QUANTITIES.

DURING the last three years, trees grown on the FEATHER RIVER BOTTOM LANDS, at RIO BONITO, BUTTE COUNTY, have been much sought after, and the demand for them is increasing all over the State where they have been planted. Owing to the peculiar adaptability of the soil and climate of this section for growing nursery stock, the trees making a very large and well-furnished system of root growth, and maintaining a correspondingly strong and vigorous top, maturing the wood thoroughly, we are enabled to supply our patrons with the best of trees, healthy in every respect, entirely free from insect pests, and in perfect condition for transplanting.

If You Are Going To Plant Trees, It Will Pay You To Correspond With Us Before Purchasing.

ALEXANDER & HAMMON,

BIGGS, BUTTE COUNTY, CALIFORNIA.

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Collection of SWEET PEAS

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JAPAN PLUM TREES.

Apple, Almond, Apricot, Cherry, Prune, Peach, Fig, Olive, Orange and Lemon

TREES.

Small Fruits, Grape Vines, Roses, Etc.

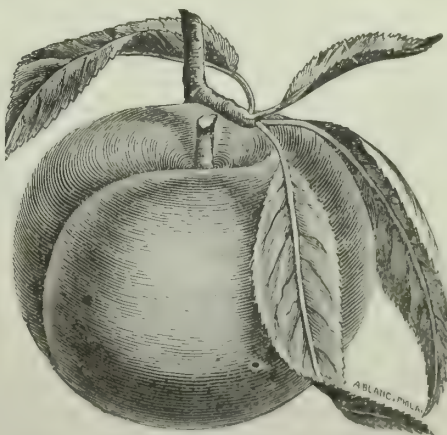
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VEGETABLE, FLOWER and TREE SEEDS. SEEDS.

Catalogue on Application.

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THOMAS MEHERIN,

AGENT FOR CALIFORNIA NURSERY CO.,

LARGE STOCK OF

FRUIT & ORNAMENTAL TREES

AT REDUCED RATES.

SEEDS.—Kentucky Blue Grass, Clover, Vegetable, Flower and Tree Seeds.—SEEDS.
PRICE CATALOGUE MAILED ON APPLICATION.

THOMAS MEHERIN, - - - 516 Battery Street, San Francisco.
P. O. Box 2059.

Origin of the Locomotive Whistle.

When locomotives were first built, and began to trundle their small loads up and down the newly and rudely constructed railways of England, the country roads were, for the most part, crossed at grade, and the engine driver had no way of giving warning of his approach except by blowing a tin horn. This horn, as may be imagined, was far from being a sufficient warning. One day, in the year 1833, a farmer of Thornton was crossing the railway track on one of the country roads with a great load of eggs and butter. Just as he came out upon the track a train approached. The engine man blew his tin horn lustily, but the farmer did not hear it. Eighty dozens of eggs and fifty pounds of butter were smashed into an indistinguishable, unpleasant mass, and mingled with the kindling wood to which the wagon was reduced. The railway company had to pay the farmer the value of his fifty pounds of butter, his 960 eggs, his horse and his wagon. It was regarded as a very serious matter, and straightway a director of the company, Ashlen Bagster by name, went to Atton Grange, where George Stephenson lived, to see if he could not invent something that would give a warning more likely to be heard. Stephenson went to work, and the next day had a contrivance which, when attached to the engine boiler, and the steam turned on, gave out a shrill, discordant sound. The railway directors, greatly delighted, ordered similar contrivances to be attached to all the locomotives, and from that day to this the voice of the locomotive whistle has never been silent. —Birmingham Daily Post.

Mercurial Soap for Cholera.

According to the *American Architect*, two chemists of Hamburg, MM. Forster and Nijland, have published some studies on the cholera infection, from which it appears that soap is one of the best known sterilizers of water suspected of infection. For a long time after the cholera epidemic of last summer, the people of Hamburg were afraid even to bathe themselves with Elbe water, but MM. Forster and Nijland show that ordinary toilet soap, added at the rate of an ounce to about twelve quarts of water, will kill the cholera bacilli in ten minutes. This would be a large proportion of soap to use in a bath, but as most people, instead of dissolving soap in the bath water, apply it to the skin with a sponge, it is probable that the water actually brought in contact with the skin is generally soapy enough to be harmless. If, however, it is desired to obtain greater security, a soap containing a small quantity of corrosive sublimate may be used. Many "complexion washes" contain this drug, which is said to have a beneficial effect on the skin, however dangerous it may be internally, so that no hesitation need be felt in employing soaps medicated with it, and a very small quantity is sufficient. With a soap containing one per cent of corrosive sublimate, added at the rate of a quarter of an ounce of soap to sixty quarts of water, all the cholera bacilli will be killed in one minute, and half the dose will kill them all in ten minutes; while the sublimate alone is still more active, an ounce being sufficient to destroy, in five minutes, all the cholera microbes in about a million quarts of water.

—The ice industry is one of the most important of Truckee's resources. This year's crop is not less than 125,000 tons. The Truckee river produces the natural ice of the Pacific coast. Employment is given during the winter months to hundreds of men, and to a large number throughout the year.

A company is organized at Oceanside to catch, can and preserve fish. Some of the finest fishing grounds on the Pacific coast lie off the coast between Oceanside and Santa Catalina and San Clemente islands. The sardine is equal to the French when packed in pure California olive oil.

—The Stockton Harvester Works has started up again with a small force.

How's This!

We offer One Hundred Dollars Reward for any case of Catarrh that cannot be cured by Hall's Catarrh Cure.

F. J. CHENEY & CO., Props., Toledo, O. We the undersigned have known F. J. Cheney for the last 15 years, and believe him perfectly honorable in all business transactions and financially able to carry out any obligation made by their firm. WEST & TRUAX, Wholesale Druggists, Toledo, O. WALKING, KINNAN & MARVIN, Wholesale Druggists, Toledo, O.

Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Price, 75c, per bottle. Sold by all Druggists. Testimonials free.

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Those of our readers who improved the opportunity of attending the

will always remember it as one of the grandest privileges of their lives.

The Peristyle.

The Court of Honor.

The Golden Statue of the Republic.

Administration's Beauteous Temple.

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Transportation's Golden Doorway.

"Midway's" Wealth of Orientalism.

WHO CAN EVER FORGET THEM?

Or who can ever forget the proud distinction achieved by McCormick Binders and Mowers? Who can ever forget that the McCormick received the highest awards given for any make of Binders and Mowers, and that in the regular field trials they earned the only honorable mention for grain and grass cutting machinery?

Write to the

MCCORMICK HARVESTING MACHINE CO., CHICAGO; or, better yet, call on your nearest McCormick Agent.

SAVE THIS COUPON.

It contains some things you ought to know. You ought to know that the World's Fair Management asked all manufacturers of Binders and Mowers to take their machines into the grain and grass fields, and by their work prove their claims. You ought to know that the manufacturers of McCormick Binders and Mowers promptly notified the World's Fair Committee that they would comply with this reasonable request. You ought to know that various other manufacturers of Binders and Mowers sent representatives to examine the grain and grass fields specified, and that these representatives reported to their respective companies that the condition of the crops to be cut was such that ordinary machines could not handle them. You ought to know that none of those manufacturers allowed their machines to go into these tests where they knew the McCormick Binders and Mowers would be at work. You ought to know that the World's Fair Judges said of McCormick Binders and Mowers that they were simple and easily operated, and that their performance was in all respects thoroughly satisfactory. You ought to know that they said of McCormick Mowers that their draft is at least 20 lbs. lighter than the draft of ordinary mowers. You ought to know these things because you don't want to make a mistake when it comes to buying so important a farm implement as a Binder or a Mower. You want the best.

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Scientific Press



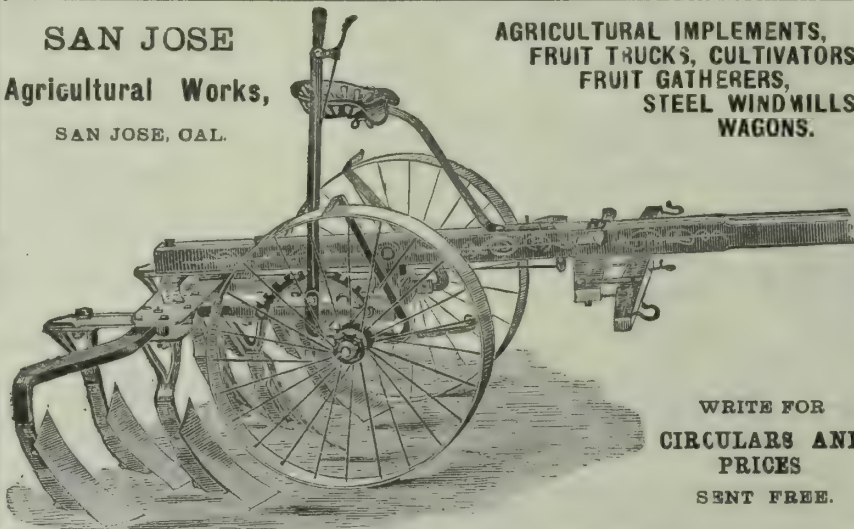
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Inventors on the Pacific Coast will find it greatly to their advantage to consult this old experienced, first-class Agency. We have able and trustworthy Associates and Agents in Washington and the capital cities of the principal nations of the world. In connection with our editorial, scientific and Patent Law Library, and record of original cases in our office, we have other advantages far beyond those which can be offered home inventors by other agencies. The information accumulated through long and careful practice before the Office, and the frequent examination of Patents already granted, for the purpose of determining the patentability of inventions brought before us, enables us often to give advice which will save inventors the expense of applying for Patents upon inventions which are not new. Circulars of advice sent free on receipt of postage. Address DEWEY & CO., Patent Agents, 220 Market St. S. F.

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FRUIT TRUCKS, CULTIVATORS,
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TREE WASH.
OLIVE DIP.

"Greenbank" Powdered Caustic
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Assaying of Ores, \$25; Bullion and Chlorination Assay,
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OF CALIFORNIA.

SAN FRANCISCO, CAL.

INCORPORATED.....APRIL, 1871



Capital paid up.....\$1,000,000
Reserve Fund and Undivided Profits, 130,000
Dividends paid to Stockholders.... 833,000
OFFICERS.

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General Banking. Deposits received, Gold and Silver.
Bills of Exchange bought and sold.
Loans on wheat and country produce a specialty.
January 1, 1894. A. MONTPELLIER, Manager.

Deep Well Pumps.



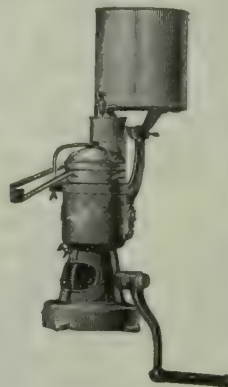
The valves and working parts of the Fulton Pump can be removed, repaired and replaced without taking the pump out of the well.

Pumps fitted up for all depths of wells, ready to put in.

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Manufacturer of Pumps and Windmills.



Davis International Hand Cream Separator, 250 lbs. capacity. Every Separator guaranteed first class, send for circular. Agents wanted. Address, Davis & Rankin Bldg. & Mfg. Co., Chicago, Illinois.



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WITH STANLEY'S
Corrugated Steel Hinges.
They are Stronger, Handsomer and cost no more than the old style. For sale by Hardware Dealers generally, but if not in your vicinity write the Manufacturers. Send for "Biography of a Yankee Hinge," mailed free.



THE STANLEY WORKS, New Britain, Ct.

J.I.C. DRIVING STILL LEADS THEM ALL.
IT WILL CONTROL THE MOST VIOLENT HORSE.

75,000 sold in 1891.
100,000 sold in 1892.

THEY ARE KING.

Sample mailed N.C. for \$1.00

Nickel, \$1.50.

Stallion Bits 50 cts. extra.

RACINE MALLEABLE IRON CO. J. P. Davis, Mgr.

S. H. MARKET REPORT

Market Review.

SAN FRANCISCO, April 25, 1894.
Wheat.

The local wheat market remains precisely as reported last week. Shipping business at a standstill, but there is more or less trading for Call Board purposes on a basis of \$1.05@1.07 1/2 per cwt. The rain to-day had depressing influence on the speculative market, causing a drop in December option of about 2c per cwt. Sales of spot wheat were made in the Call Board this morning at \$1.12 per cwt.

Barley.

The sample market was 50c per ton lower to-day, on account of rain. In the speculative market the decline was greater, as shown by the Call Board sales. Quotable at \$1.07 1/2@1.10 per cwt for feed, and \$1.12 1/2@1.17 1/2 for brewing.

Dried Fruits.

Recent advances have been fully maintained and prices are quite firm. As to prices, we cannot do better than quote from Bulletin No. 1 of the State Fruit Exchange, dated Wednesday of this week, as follows:

Dried peaches and apricots are universally reported as being practically cleaned up from growers' hands all through the State. Prunes are rapidly taking the same course, and prices are now stiff at 5 1/2 cents for the four sizes, or for ungraded averaging 80 to the pound. A few lots unsold are held at 6 cents, but we have heard of no sales at that price except for larger sizes; but on April 19th, prunes were selling in Chicago at 6 cents f. o. b. coast, presumably subject to 5% commission. In raisins there are distinct signs of a movement of the same kind, as to which we are not so well informed. About Woodland remaining stocks are rapidly being taken up by local buyers at 2 1/2 cents for Muscats in sacks, and 2 cents for seedless. These are net cash prices to growers. April 19th two-crown sold at Chicago for 2 1/2 and three-crown 2 1/2 in sacks f. o. b. Coast. These prices, low as they are, are a distinct advance on net returns previously had from commission sales, and being paid by local buyers shows confidence in the market on their part.

General Produce Market.

OATS—Business is not of particularly large volume, but prices show good strength. The firm feeling prevailing in other feed products largely tends to sustain Oat quotations. Stocks are fairly well concentrated and matters generally incline favorably for the selling interest. We quote as follows: Milling, \$1.25@1.35; Surprise, \$1.40@1.45; fancy feed, \$1.30@1.35; good to choice, \$1.20@1.27 1/2; poor to fair, \$1.10@1.20; Black, \$1.12 1/2@1.25; Red, nominal; Gray, \$1.15@1.25 per cwt.

CORN—More liberal offerings have caused a somewhat easier tone in the market. Quotable at \$1.22 1/2@1.25 per cwt for Large Yellow, \$1.30@1.35 for Small Yellow and \$1.27 1/2@1.35 for White.

CRACKED CORN—Quotable at \$28.00@29.00 per ton.

CORNMEAL—Millers quote feed at \$27.50@28.50 per ton; fine kinds for the table, in large and small packages, 2 1/2@3 1/2c per pound.

OILCAKE MEAL—Quotable at \$37.50 per ton from the mill.

COTTONSEED OILCAKE—Quotable at \$32.50 per ton.

SEEDS—We quote: Mustard, brown, \$2.25@2.50; Yellow, \$3@3.50; Triese, \$2.50@2.75; Canary, 3@4c; Hemp, 3 1/2@4 1/2c per lb; Rape, 2@2 1/2c; Timothy, 6 1/2c per lb; Alfalfa, 13@13 1/2c; Flax, 33@35 per cwt.

MIDDLINGS—Quotable at \$19@21 per ton.

MILLSTUFFS—We quote: Rye Flour, 3 1/2c; Rye Meal, 3c; Graham Flour, 3c; Oatmeal, 4 1/2c; Oat Groats, 5c; Cracked Wheat, 3 1/2c; Buckwheat Flour, 5 1/2@5 3/4c; Pearl Barley, 4 1/2@4 3/4c per lb; Normal Nutrient, \$3 per case of 1 dozen cans; Breakfast Delight, \$3.25 per case of 2 dozen packages.

BRAN—Quotable at \$18@19 per ton.

HAY—Scott & McCord yesterday received the first carload of new Hay this season, coming from the ranch of Thomas Prader of Cornwall, Contra Costa county. It was choice Wild Oat and brought \$14.50 per ton. Wire-bound Hay sells at \$1 per ton less than rope-bound hay. Following are wholesale city prices for rope-bound hay: Wheat, \$13.00@18.00; Wheat and Oat, \$13@16.00; Wild Oat, \$14@16.50; Alfalfa, \$11@13; Barley, \$11@14; Clover, \$11.00@13; Compressed, \$13@16; Stock, \$11@12 per ton.

STRAW—Quotable at 75@85c per bale.

HOPS—Business remains very quiet. Quotable at 14@16c per lb.

RYE—Quotable at \$1.17 1/2@1.20 per cwt.

BUCKWHEAT—Quotable at \$1@1.15 per cwt.

GROUND BARLEY—Quotable at \$24.50@25 per ton.

POTATOES—Both old and new are easy in price. We quote: New Potatoes, 1/4@1 1/4c per lb; Sweet, 75c@1.25 per cwt; Early Rose, 30@35c; River Burbanks, 25@40c; River Red, 20@25c; Oregon Burbanks, 60@90c.

ONIONS—Firm at \$2@3 per cwt.

DRIED PEAS—We quote: Green, \$1.25; Blackeye, \$1.60@1.65; Niles, \$1.50@1.75 per cwt.

BEANS—There is fair inquiry, but trade is small and slow, as holding prices are in many cases above the views of speculative buyers. Many parties decline to sell at quoted prices, expecting the market to advance sooner or later. Whether results will show such opinion to be correct or not, time alone can tell. We quote as follows: Bayos, \$2.50@2.65; Butter, \$1.75@1.85 for small and \$2@2.25 for large; Pink, \$1.90@2.05; Red, \$2@2.35; Lima, \$3@3.40; Pea, \$2.50@2.60; Small White, \$2.50@2.65; Large White, \$2.40@2.55 per cwt.

VEGETABLES—There is no improvement in prices. Supplies of leading descriptions continue large, and the market generally shapes in favor of consumers. Arrivals yesterday included 1731 bxs. Asparagus, 536 bxs. Rhubarb and 750 sks. Peas. Most of the String Beans offering are poor. Choice Tomatoes will bring full figures, but such stock is in slim receipt. We quote as follows:

Cucumbers, 40@50c per dozen for common and 75c@1.25 for good to choice; Asparagus, 35@65c per box for the ordinary run and 75c@1.10 per box for choicer quality; Rhubarb, 25@75c per box; Green Peas, common, 50@65c per sk; Sweet do, 75c@1.10; String Beans, 9@10 per lb; Marrowfat Squash, 1 per ton; Hubbard Squash, 1 per ton; Green Peppers, 1 per cwt; Tomatoes, 1 per cwt; Turnips, 75c per cwt; Beets, 75c per sack; Parsnips, \$1.25 per cwt; Carrots, 35@40c; Cabbage, 35@40c; Garlic, 1@2 1/2c per lb; Cauliflower, 60@70c per dozen; Dry Peppers, 15c per lb; Dry Okra, 1 per lb.

FRESH FRUIT—The first cherries of the season arrived yesterday from Vacaville. One box sold at 45c per lb, but the remaining box was on hand at a late hour. Four boxes of Green Almonds were also received, coming from Winters, being the initial shipment this season. Only one box found sale at 10c per lb. We quote: Apples, 50@75c per box for common, 85c@1.25 for fair to good, and \$1.50@2 for choice.

BERRIES—The first Raspberries of the season arrived yesterday from San Leandro, selling at \$1 per pound. Receipts of Strawberries are on the increase, the consignments yesterday being 128 chests, quotable at 35@60c per drawer.

CITRUS FRUIT—There is a quick demand for Oranges that are first-class. All other stock is largely neglected. We quote: Fair to choice Navel Oranges, \$1.50@3.50 per box; Seedlings, \$1@2; Mexican Limes, \$4@5 per box; Lemons, Sicily, \$4@5; California Lemons, 75c@1 for common and \$1.25@2 for good to choice; Bananas, \$1.50@2.50 per bunch; Hawaiian Pineapples, \$2.50@3; Mexican Pineapples, \$3@3.50 per dozen.

NUTS—Quiet trade at unchanged rates. We quote as follows: Chestnuts, 6@8c per lb; Walnuts, 6@7 1/2c for hard shell, 8@9c for soft shell and 8@9c for paper shell; California Almonds, 10@11c for soft shell, 6@7c for hard shell and 11 1/2@12 1/2c for paper shell; Peanuts, 3@4c; Hickory Nuts, 5@6c; Filberts, 10@10 1/2c; Pecans, 5@8c for rough and 8@10c for polished; Brazil Nuts, 8@9c; Coconuts, \$5@5.50 per 100.

HONEY—The poor prospect for the coming crop has at last imparted strong tone to the market, causing an advance in prices. We quote as follows: Comb, 11@12c per lb for bright and 9@10c for dark to light amber; water white extracted, 6@7c; amber extracted, 5 1/2@6c; dark, 4 1/2@5c per lb.

BEESWAX—Quotable at 24@25c per lb.

BUTTER—Prices have taken another jump upward, the demand being good while shipments show some little decrease. The loss of the steamer Los Angeles has had some influence in strengthening the market, as the vessel had considerable butter on board for this port. We quote: Fancy Creamery, 21@22c; fancy dairy, 18 1/2@20c; good to choice, 17@18c; common grades, 15@16c; store lots, 12 1/2@14c; pickled roll, 17@18c per lb.

CHEESE—There is easy tone to the situation. Supplies are good while the demand is not brisk. We quote as follows: Choice to fancy, 8 1/2@9 1/2c; fair to good, 7 1/2@8c; Eastern, ordinary to fine, 13@14 1/2c per lb.

EGGS—Offerings of store lots are in excess of the demand and buyers have matters much their own way as regards prices. Ranch parcels are in fair receipt, finding custom at steady prices. We quote: California ranch, 13@15c; store lots, 10@12c per dozen.

POULTRY—The market is weighted down with offerings. A considerable portion of a carload of Eastern stock that arrived last Friday is yet unsold, while another car is at hand to-day. Local consignments are also fairly liberal. We quote as follows: Live Turkeys—Gobblers, 8@10c; Hens, 10@12c; dressed Turkeys, 7@11c per lb for Gobblers and 7@11c for Hens; Roosters, \$3.50@4 for old and \$6.50@7.50 for young; Broilers, \$2.50@4.50; Hens, \$4@5; Ducks, \$3.50@4.50; Geese, \$1.50@2 per pair; Pigeons, \$2@2.50 per dozen.

GAME—Nominal.

PROVISIONS—We quote as follows: Eastern Sugar-cured Hams, 12 1/2@13c; California Hams, 11@12c; Bacon, Eastern, extra light, 12c; medium, 9 1/2c; do, light, 10c; do, light, boneless, 11 1/2c; light, medium, boneless, 10 1/2c; extra light, sugar-cured, 13 1/2c; Pork, prime mess, \$14@15; do, mess, \$17@18; do, clear, \$19.50; do, family, \$22 per bbl; Pigs' Feet, \$11.50 per bbl; Beef, mess, bbls, \$7.50@8; do extra mess, bbls, \$8.50@9; do, family, \$9.50@10; extra do, \$11@11.50 per bbl; do, smoked, 10c; Eastern lard, tierces, 7 1/2@7 3/4c; do prime steam, 9 1/2c; Eastern pure, 10-lb pails, 10c; 5-lb pails, 10 1/2c; 3-lb pails, 10 1/2c; California, 10-lb tins, 8 1/2c; do, 5-lb, 9c; do, kegs, 10c; do, 20-lb buckets, 9 1/2c; compound, 7c for tierces.

WOOL—Business is picking up a little, one prominent firm reporting sales for the week of over 200,000 lbs. Receipts are coming to hand quite freely, and buyers now have ample stocks from which to make selections. The weekly report of Thos. Denigan, Son & Co. says: "The week's trade has been fairly good. Scouring is now in full blast, and we believe that all scouring establishments are at full time work. Shippers are scarce and make no showing compared to scourers. Eastern business reported quiet with prospects fair for improved condition in Wool traffic." We quote spring: Year's fleece, 1/4 lb, 6@7c; Six to eight months, San Joaquin, poor, 5@6c; do fair, 7@9; Oregon and Washington: Heavy and dirty, 6@7c; good to choice, 8@10c; valley, 10@13. We quote fall: Northern defective, 5@6c; Southern and San Joaquin, 3@4c.

HIDES AND SKINS—Quotable as follows:

	Sound.	Culls.
Heavy Steers, 54 lbs up, 1/4 lb.	4 1/2@5c	3 1/2@4c
Medium Steers, 48 to 56 lbs.	4@5c	3@4c
Light, 42 to 47 lbs.	3 1/2@3 3/4c	2 1/2@2 3/4c
Cows, over 50 lbs.	3 1/2@3 3/4c	3@4c
Light Cows, 30 to 50 lbs.	3 1/2@3 3/4c	2 1/2@3c
Stags.	3@4c	2@3c
Kips, 17 to 30 lbs.	4@5c	3@4c
Veal Skins, 10 to 17 lbs.	5@6c	4@5c
Calf Skins, 5 to 10 lbs.	7@8c	6@7c
Dry Hides, usual selection, 7c.		
Dry Kips, 7c.		
Calf Skins, do, 7c.		
Cull Hides, Kip and Calf, 4c.		
Pelts, Shearling, 10@20c each.		
do, short, 25@35c each.		
do, medium, 40@50c each.		
do, long wool, 50@75c each.		
Deer Skins, summer, 25c.		
do, good medium, 15@20c.		
do, winter, 5c per lb.		
Goat		

Skins, 25@40c apiece for prime to perfect, 10@20c for damaged, and 5@10c each for Kids.

TALLOW—We quote: Refined, 5 1/2@5 3/4c; rendered, 4 1/2@4 3/4c; country Tallow, 4@4 1/2c; Grease, 3@3 1/2c per lb.

San Francisco Meat Market.

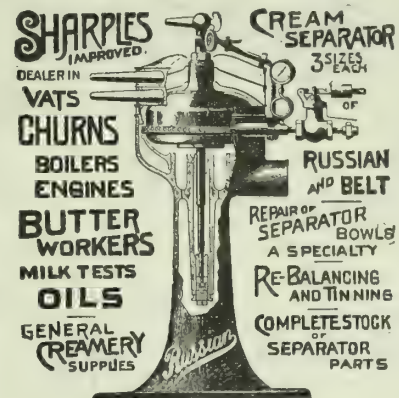
The market continues to be well furnished with all descriptions. Following are the rates for whole carcasses from slaughterers to dealers:

BEEF—First quality, 5 1/2@6c; second quality, 4 1/2@5c; third quality, 3 1/2@4 1/2c per lb.
CALVES—Quotable at 4@5c for large, and 5@7c per lb for small.
MUTTON—Quotable at 5 1/2@6 1/2c per lb.
LAMB—Spring, 8@10c per lb.
PORK—Live Hogs, on foot, grain fed, heavy and medium, 4 1/2c; small Hogs, 4 1/2c; stock Hogs, 3 1/2@4c; dressed Hogs, 6@7c per lb.

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Pay Attention.

Whatever you are about, pay attention to it. Keep your mind on what you are at. Think of what you are doing. Close attention is very much a matter of habit; and it is a habit which should be diligently cultivated.

Take, for instance, the habit of mind in reading. One law student has a general idea that he has seen a case reported somewhere, in which he rather believes a certain point arose—he is not quite sure of that—which was decided one way or the other, he don't remember which! Another student, who had the same book in his hand the same length of time, remembers what reports it was in, the number of the volume, the name of the case, the names of the counsel, the points that came up, the views of the different judges, if there was a conflict of opinion upon them, and precisely what the decision was. He even remembers the part of the book, the very number of the page where it is to be found. In his mind's eye he can see the lines, the words, the letters. He has the habit of fixed attention, which all students should strive to acquire.

The opposite extreme of loose reading and listening is illustrated by some amusing anecdotes. One is of a man who said he had recently read in some paper, he couldn't remember where it was, of a man named Johnson—who had raised a thousand barrels of potatoes to the acre—he believed it was barrels, it might possibly have been bushels; he was quite sure it was potatoes, thought possibly it might have been apples; it seemed a good deal for an acre, he might be mistaken about that—really it was impossible, it must have been more than an acre!

Another is of an old woman who said she had learned a sure way to tell whether an egg was good or not; she had heard of a great many before, but this was certain, and it was so simple, too; it was to just drop the egg into a pail of water, and if it was good it would—either sink or swim, she really had forgotten which.

It is a very good practice after laying a book down to take up a pen and see how much you can write of what you have read. After trying it regularly for a week you will be pleased to find how much more you can remember than you could at first, so rapidly does the habit of concentrating one's thoughts grow with cultivation.

Think of what you are doing and you will remember what you have done. Cultivate the habit of keeping wide awake and of fixing your attention closely.

The Original Americans.

It is possible, according to recent scientific researches, that the people from whom, in the opinion of some investigators, the name of America was derived were originally inhabitants of the Polynesian Islands. Ages ago, it is believed, a nearly complete land connection existed between those islands and Central America, the Pacific ocean being at that time almost bridged with a chain of islands.

The tribe of Indians afterward known as the Ameriques are supposed, from certain remains, to have first taken possession of an island, Momotombo, near the western edge of Nicaragua, where they left some very interesting carvings and other tokens of their skill.

Afterward, according to the theory, a subsidence of the land occurred which drove them eastward until they came to the fertile slopes of the American mountains, where their descendants are still to be found. It has been suggested that Vesputius got his pseudonym of "Amerigo" from the name of this tribe of Indians.

If all these things are true, it might be pointed out that even geological convulsions have played a part in the long series of events leading up, as if in obedience to a decree of Providence, to the naming of the new world, not Columbia, but America.

—The original 1858 cable weighed 93 pounds per mile, and had a conductor of seven copper wires of 22½ gauge. Price of deep sea wire per mile, \$200; price of spun yarn and iron wire per mile, \$265; cost of outside coating of tar and gutta percha, \$25 per mile; total cost per mile, \$485. At \$485 per mile, the total cost of the 2500 miles of deep sea wire was \$1,212,500. To this add 25 miles of "shore-end" wire, costing \$1450 per mile, and we find that the first ocean cable, exclusive of instruments, cost \$1,250,000.

To manage men one ought to have a sharp mind in a velvet sheath.—G. Eliot.

Electric Light as a Disinfectant.

Professor H. M. Ward's researches on the influence of light on bacteria have brought out some remarkable facts. Prof. Ward demonstrates conclusively that the naked arc light may be used in hospitals or railway cars most effectively as a disinfectant, by reason of the effect of its rays upon bacteria. He has allowed the various rays of the spectrum to fall on films of gelatine or agar containing spores of bacteria, and finds that whether the spectrum is got from sunlight or electric light, there is no perceptible action on the spores of bacteria by the infra-red, red, orange or yellow rays, while all the spores are injured by the rays of the blue and violet region. Broadly speaking, the injurious action begins at the blue end of the green, attains a maximum in the blue, and diminishes toward the ultra violet. With the electric light, quartz lenses and prisms had to be used in forming the spectrum, as the results with glass were feeble. The injurious influence of the blue rays extended far into the ultra violet. The intervention of a thin piece of glass resulted in cutting off a large proportion of effective rays.

A Substitute for Linseed Oil.

The London *Engineer* gives the following patented method for preparing a composition oil, possessing the qualities of linseed oil, as a vehicle for paint. The composition consists of crude petroleum, 1 gallon; yellow beeswax, ¼ lb. to ½ lb.; powdered resin, ½ lb.; zinc sulphate, ½ lb. to ¾ lb.; lead acetate, ½ lb. to ¾ lb.; rubber, ½ oz. to 1 oz.; linseed oil, ½ pint to 1 pint. A still, similar to a large steam boiler, with a dome and manhole, is employed. This still is provided with two sets of coiled tubing inside, one set being perforated for admission of steam. The crude petroleum is first placed in the still, and blown by direct steam for six or eight hours, till the lighter impurities have passed out to a suitable condenser. The lead acetate and zinc sulphate are then added to the petroleum. The contents of the still are heated by sending steam through the coil of closed tubing, till the solution has boiled for an hour. The beeswax, resin and rubber are then added, and the ingredients boiled together for about seven hours. The mixture is then allowed to cool, and the linseed oil added.

A Fortune in a Tin Roof.

Three thousand dollars for an old tin roof would be a pretty steep price, but the man who gets the battered roof from the old Tabernacle church, Broad street and South Penn square, Philadelphia, which is now being torn away, for that sum will be in great luck. Some years ago the paint was scraped off the old roof and yielded \$5000 in fine gold. It is almost as certain to yield as much this time. The gold comes from the United States Mint chimney, which is near by.

When gold is being coined, a considerable quantity of it volatilizes with the smoke through the chimney, and as soon as it strikes the air it falls. Much of it strikes the roof of the Mint—so much that the officials save even the water that falls upon it during a shower. All the drains from the roof are connected with large vats in the cellar of the Mint. Before the water finally gets to the sewer it is strained through many blankets and sieves, which retain the gold.

—The Humboldt *Times* says the lumber exports from that place have suddenly become very lively, owing to the fact that the manufacturers are desirous of stocking their outside yards before the requirements of the recent combination of the redwood mills go into operation. There are now twelve vessels of the lumber fleet in port, which will immediately commence loading for San Francisco and coast ports. Besides these, there are five vessels on the way from San Francisco, three loading there for this port, four on the way from San Pedro, one from Ventura and one from Redondo, making fourteen vessels more.

—The exportation of breadstuffs from the Pacific coast for the month of March was \$1,596,330, which is over 25 per cent less than the figures for the same month last year. Exports from San Francisco of provisions, cattle and hogs amounted to \$65,500, as against \$51,975 for March, 1893.

—The general depression in the lumber business is aptly shown by the remark of a Tacoma lumber manufacturer as reported in the *West Coast Lumberman*: "The world is finished and only needs a little lumber and shingles to keep it in repair."

Mining an Underground Forest.

The working of a mine the product of which is timber is an operation not to be seen every day, but a noteworthy mine of this sort is to be seen in Tongking, where in a formation of sand, at a depth of from 14 to 20 feet, a deposit, tolerably thick, of the stems of trees, which, thousands of years ago, must have existed as an extensive forest, but eventually became buried by an earthquake or other similar phenomenon, and has been opened and is now being mined through gangways.

The timber in no way forms any kind of coal, but is in good condition, a fact to be attributed to the large proportion of resin which it contains, and the sandy nature of the ground in which it lies. The Chinese work the mine methodically, and use the timber chiefly for sculptural purposes, coffins, troughs, etc.

The stems have a diameter of a yard, are 45 feet long and appear to be a kind of fir very similar to pitch pine.

Patents Issued to Pacific Coast Inventors.

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FOR WEEK ENDING APRIL 10, 1894.

518,091.—SAFETY GAS COCK—Cini & Malwald, S. F.
518,095.—LUBRICATOR—J. Q. Finch, S. F.
518,140.—CAR COUPLING—S. J. Ford, Placerville, Cal.
518,061.—SPARK REGULATOR—H. B. Gale, S. F.
517,950.—CAR COUPLING—C. W. Hinton, Los Angeles, Cal.
518,103.—MEASURING INSTRUMENT—L. M. Hodge, San Jose, Cal.
518,105.—CAN HEADER—M. Jensen, Astoria, Or.
517,868.—GOVERNOR—N. S. Keith, S. F.
517,951.—PIANO ACTION—F. W. Krieger, Los Angeles, Cal.
517,930.—BALING PRESS—Murphy & Richardson, Mountain View, Cal.
518,045.—ILLUMINATING FLOOR—E. L. Ransome, Oakland, Cal.
518,077.—DOOR BELL—J. R. Sauter, S. F.
517,900.—WOODEN PIPE—E. T. Wheeler, Los Angeles, Cal.
517,943.—TIME INDICATOR—C. Worth, Los Angeles, Cal.

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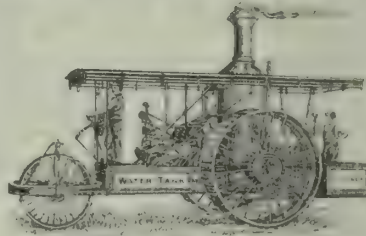
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"Orange Culture in California" was written by Thos. A. Garey of Los Angeles, after many years of practical experience and observation in the growth of the fruit. It is a well-printed hand-book of 227 pages, and treats of nursery practice, planting of orange orchards, cultivation and irrigation, pruning, estimates of cost of plantations, best varieties, etc.

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A Precaution Against Consumption.

It is now pretty well established that tuberculosis is an infective disease, and if this is true, it is largely preventable. We believe that in this country especially there is not sufficient stress laid upon the communicability of consumption; the people are too apt to regard our climate (southern California) as Nature's panacea. Phthisical patients fairly swarm upon us every winter, poisoning our hotels, our streets and our dwellings. The inspissated sputum retains, according to Sawisky, its virulency two and a half months. Here, since the advent of the one-lunged Yankee, children die of meningitis and youth of consumption. This we are told by some to regard as the unfathomable dispensation of a wise Providence, when it rather should be charged to the criminal negligence of an easy-going public.

Persistent and systematic precautions ought to be taken by both public officials and the people in general to stop this scourge. The health department should issue stringent orders, classifying this disease among those usually placarded.

The room occupied by a consumptive should receive as thorough a disinfection as the one used by a diphtheritic patient. If the phthisical patient died within a week or two, the quarantine should be demanded and carried out. If the public really thought consumption "catching," they would regard it just as natural to take precautions against its spread as it is to stamp out leprosy. In point of fact, there is no comparison between the contagiousness of these diseases—tuberculosis being much more communicable. A campaign of education is needed.

All tuberculosis patients should be compelled for the public good to use spit cups. Public spittoons filled with sawdust or other matter easily combustible should be placed at convenient intervals. The American has been described as a spitting animal, but he must be trained to spit by law only in specially prepared receptacles. The old college saying, "Those who expectorate on the floor cannot expect to rate as gentlemen," should be impressed upon all.

Then, again, the dust of the streets ought to be removed frequently, but only after a thorough sprinkling. Public hospitals for the tuberculosis poor ought to be established. In the present state of affairs only a very few of the worst cases are treated—while thousands wander about the city polluting the very air with the germs of the greatest scourge that has ever afflicted mankind.

Hygienic treatment should be advised in all cases. Preventive medicine is no longer the medicine of the future, but the medicine of to-day. Let us follow the example of Michigan, and officially declare consumption a contagious disease. Another point of great importance is the denying to consumptives the privilege of engaging in occupations whereby they may endanger the life or health of others.

The sanitary inspection of cattle and condemnation of tuberculosis cows should be rigidly enforced. Indeed, did our government take half the interest in preventing disease among human beings that it does in looking after the health of hogs and cattle, there would be thousands of lives saved annually.—Southern California Practitioner.

Smoke Prevention.

Probably people will keep on making a smoke until such time as it is made pecuniarily a loss to them by means of penalties; but until then the majority of users of solid fuel will be loth to move in the matter. So long as the fuel bill is kept within a certain limit, people don't care; they argue that they are doing as well as their grandfathers did, and why should they want to make alterations, says Walter J. May.

At one large works in England, the whole of the smoke from a battery of boilers is washed and the ammonia, etc., taken out, the products obtained assisting in paying for the cost of the coal used, besides the working expenses, but the process is not largely adopted because our predecessors did not use it.

By putting on two regular stokers on a battery of boilers the writer effected a net saving of £3 per fortnight over and above their wages on coal alone, or at the rate of £78 per annum; but because it did not matter about "a little smoke," the management would not continue the arrangement as it was "not the custom to employ firemen," and they still continue to put coal in the furnaces and to send it out of the top of the chimney unburnt. Clever, is it not?

In London the bakers are fined heavily

for black smoke, and they do not have any, as a rule; but they find that while such smoke cannot be avoided where there is no penalty, where "40s. and costs" inflicted a few times more than covers the cost of a proper furnace. In some places the Town's Police Act is enforced, and if a chimney catches fire, the occupier of the house is fined. In such places, chimneys rarely catch fire; they are kept swept. But where the act is not enforced, at least 25 per cent of the chimneys in the district get burnt out. Why? Because there is no penalty.

It is no use whatever to advocate smoke abatement in any country until sharp penalties are imposed by an act of the Government and stringently enforced; and when this is done, people will at once arrange their furnaces and other fuel-consuming apparatus so that the fuel will be consumed, but not before.

Perpetual Lightning.

The phenomenon known as lightning, followed by a rolling, reverberating report, recognized as thunder, is common to a wide zone of the earth, but it is not generally known that there are localities where the vivid flashes and the deafening peals are incessant, says a technical exchange. The most notable of these continuous lightning districts is on the eastern coast of the island of San Domingo, a leading member of the group of the West Indies. It is not meant that the lightning is here continuous the year round, but that, with the commencement of the rainy season, comes the zig-zag feature of the electric illumination, which is then continuous day and night for weeks. The storm center is not continuously local, but shifts over a considerable area, and, as thunder is seldom heard over a greater distance than eight miles, and the lightning in the night will illuminate so as to be seen 30 miles, there may be days in some localities where the twinkle on the sky is in a continuous succession while the rolling reports are absent. Then again come days and nights when the electric artillery is piercing in its detonations, and especially is this the case when two separate local cloud centers join, as it were, in an electric duel, and, as sometimes occurs, a third participant appears to add to the elemental warfare. Then there is a blazing sky with blinding vividness and stunning peals that seem to pin the listener to the earth. Long before the echoes can die away come others, until the auricular mechanism seems hammered into chaos.

Just how and why it is that there is here generated so immense an amount of electricity as to keep up such an incessant ignition is one of those problems that can only be solved when sufficient data are at hand to work upon. It is probable that, with the commencement of the rainy season, this region is the border of opposing air and ocean currents whose friction has something to do in the case. This would tend to bring into contact opposing clouds variously charged, and as lightning is the passing of electricity from one cloud to another, seeking equilibrium, or the passing of the fluid from a cloud to the earth, it is probable that, in this continued friction of currents, may be found a starting point to unravel the mystery. It is in swirling and opposing cloud strata, especially where these get into gyratory motion, that electrical phenomena are most abundant, just as, in an even, uniform flow of clouds, such disturbance is rarer and often entirely absent.

—Electricity will eventually provide the poor man's light, Mr. Peerce is reported to have said, and we think it a reasonable prophecy, says *Invention*. The management and control of the electric motor is simple; its service is in direct and immediate command; it requires no fuel; in economy of space occupied it has no competitor, and, in some cases, where needed for intermittent use, power can be furnished at one-tenth to one-fifth the cost of steam. An American contemporary points out that the electric motor has found its way into plumbing, metal spinning and machine shops in New York, and considers that there can be no grave doubt as to its more general adoption.

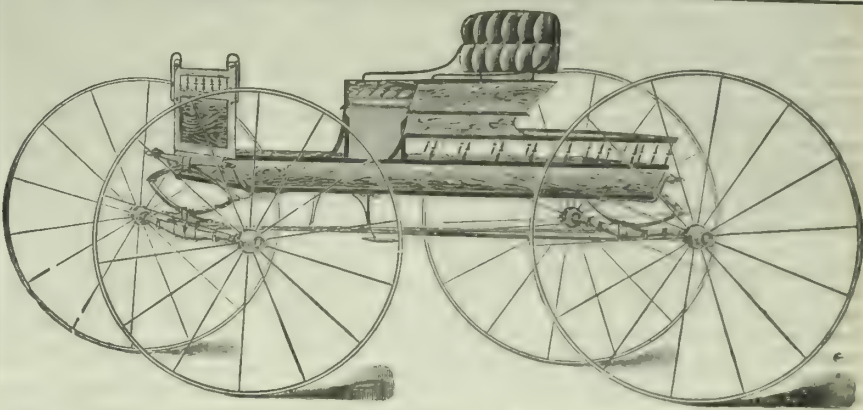
Deafness Cannot Be Cured

by local applications, as they cannot reach the diseased portion of the ear. There is only one way to cure Deafness, and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the Eustachian Tube. When this tube gets inflamed you have a rumbling sound or imperfect hearing, and when it is entirely closed deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever; nine cases out of ten are caused by catarrh, which is nothing but an inflamed condition of the mucous surfaces.

We will give One Hundred Dollars for any case of Deafness (caused by catarrh) that cannot be cured by Hall's Catarrh Cure. Send for circulars, free. F. J. CHENEY & CO., Toledo, O.

Sold by Druggists, 75c.

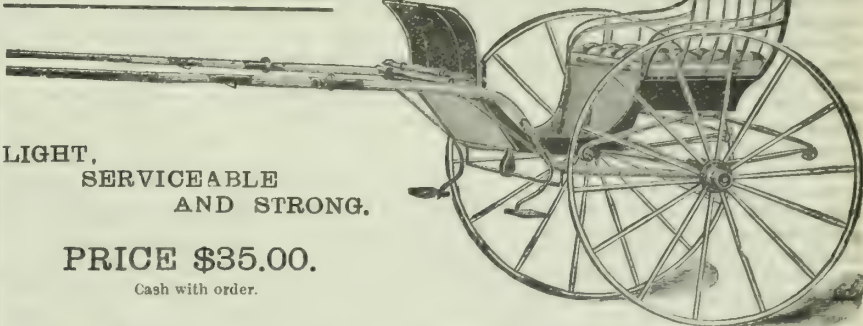
HOOKER & CO., 16 and 18 DRUMM ST., SAN FRANCISCO.



No. 36 - GEM WAGON. Shafts, 1-in. Axle.

A solid oak body with grained gear. Seven wheels, rail on dash. Light, strong, serviceable and natty. Trimmed in best Evans leather.

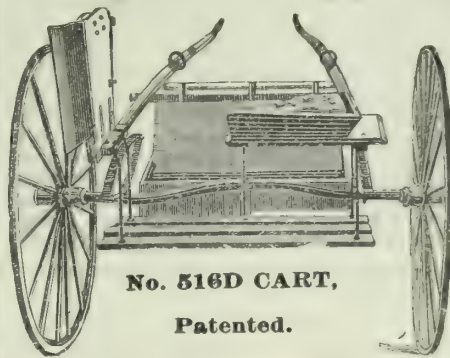
Del Monte Phaeton Carts.



LIGHT, SERVICEABLE AND STRONG.

PRICE \$35.00.

Cash with order.



No. 516D CART.

Patented.

The "Putnam" Petaluma Cart.

Just the thing for the farmer to go to town in, as it is much lighter than a buggy, only one-third as expensive and costs but a quarter as much for repairs. Nothing but first-class material used in the construction of these carts.

They have 1 1/2-inch double collar and coach axles, and steel tires, white wood bodies; genuine Sarven patent wheels, nicely painted and neatly striped.

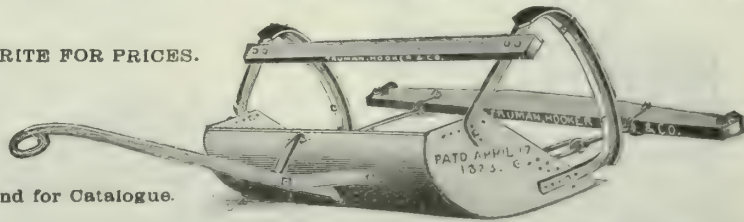
These carts are built here and are not Eastern made goods.

WEIGHT ABOUT 240 POUNDS.

THE FRESNO IMPROVED Leveling and Railroad Scraper.

WE DON'T DEPEND ON THE CROSSBAR FOR DUMPING.

WRITE FOR PRICES.



Send for Catalogue.

Hooker & Co.'s Platform Scale.



No. 74..... 600 lbs.
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NO BETTER SCALE MANUFACTURED.

ACCURACY, DURABILITY AND CHEAPNESS

Make these the best Scales in the market.

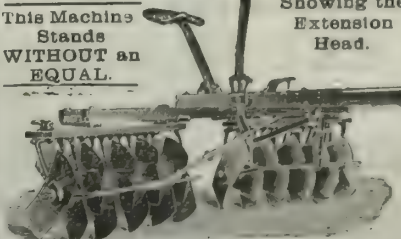
WE PAY THE FREIGHT.



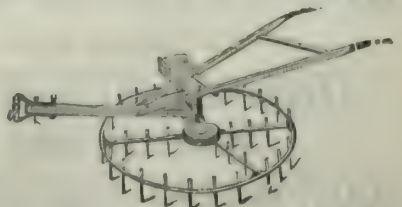
5-TON WAGON SCALE, \$66.00.

BEARINGS OF HARDENED ENGLISH TOOL STEEL.

PACIFIC SPADER. REVERSIBLE, Showing the Extension Head.



This Machine Stands WITHOUT an EQUAL.



CALIFORNIA CIRCULAR ORCHARD OR VINEYARD HARROW. NO FARMER SHOULD BE WITHOUT ONE.

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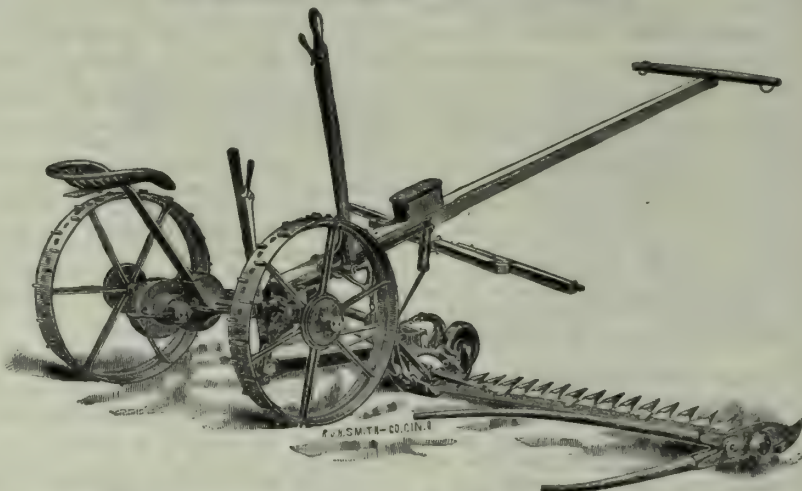
The Situation as to Horse-Breeding.

Before giving up the breeding of horses and declaring the business dead, will it not be well to take a candid practical view of the case, and before throwing away an advantage already gained, consider well what has brought on present conditions, whether the causes are likely to continue indefinitely, and if not, how best to take advantage of the change when it comes. Nearly every kind of business has had its boom and reaction during the last twenty years, and the horse business has been one of them. Its effects have been and are felt over a wider extent of country than almost any other business, because it is so intimately connected with every other. Many breeders attribute the present condition of the horse market to over-production, and the introduction of electricity. The over-production has been entirely of the cheaper grades, and this class is what is being displaced by electricity. Electricity can never take the place of the heavy draft or fine coach horse. General business depression has had more to do with the fall in the horse market than anything else. Nearly every one is economizing and doing without or making the best of what they have. That this condition will last long no one believes. A renewed demand is among the certainties of the future. When this fresh demand comes there will be a short supply to meet it, because of the falling off in breeding for the past three years and the probable continuance of it for a year or two to come. Horses, as a rule, are short-lived animals. The visible supply is being used up at a very rapid rate, and the fact that it takes five years to produce a horse ready for market is lost sight of by the croakers who are now and have been for three years crying the horse business down. Another fact is that the best time to engage in the production of any staple commodity is when it is down and not when it is booming. So many farmers have learned by sad experience that they cannot produce salable horses from ordinary stallions and have given up the attempt, that the chance for those who can and do raise first-class horses in the future will be greatly improved. Taking past experience and a candid view of the future of this country, it would seem that now is the right time for those farmers who are favorably situated to take hold of high-class horse breeding in earnest. They can now secure a choice selection of mares at moderate cost and buy first-class stallions at "rock-bottom" prices. The latter can now be bought cheaper than they are likely to be again for years, for the reason that this year will about use up the stock of imported stallions on hand and good ones cannot be imported to sell at prevailing prices. Think on these things. Should not, under the circumstances, the owners of mares be more particular than ever in their choice of stallions and breed more judiciously than ever for the inevitable future market? The present conditions are simply the result of bursting boom bubbles. This country is not going to destruction; business is settling down to a sound basis, and a healthy reaction is sure to follow. A revival in general business will bring a quick and strong demand for horses, and the man who then has good ones can name his own price for them. The main point in breeding is the choice of a stallion, and care should be taken to buy only the best and from a reputable importer.

There has been lately landed in San Francisco the finest lot of imported Percheron and French Coach stallions ever brought to the Pacific Coast. This stock ranges in age from two to six years, and was selected in France by the veteran importer, Leonard Johnson, who for many years was foreign buyer for M. W. Dunham, of Wayne, Ill. Mr. Johnson has personally selected and brought to this country over Two Thousand Horses, and is universally acknowledged to be the best judge of Draft Horses in America. Each animal in this lot is a good one, not only individually, but of the best possible breeding, as is attested by the certificates of registry in both the Percheron stud-books of France and America. A satisfactory guarantee given that each stallion will get sixty per cent of colts. This is a rare chance to get a first-class stallion, as no such stock as this has ever been offered for sale here at as low figures as this will be sold for. Time given on approved paper. STABLES—Close to Midwinter Fair, on Fifth avenue, opposite Race Track, next door to Scott & McCord's Feed Store, San Francisco, Cal. Take Geary street car. For further information and catalogues, address the Secretary of the American Percheron Horse Breeders' Association, **S. D. THOMPSON**, OCCIDENTAL HOTEL, SAN FRANCISCO.

OSBORNE MOWERS

LEAD THE WORLD!



OSBORNE NO. 4. — 4, 5 AND 6-FT. CUT.

THEY ARE BUILT OF THE BEST MATERIAL—Malleable cast, wrought iron and steel.
THEY ARE LIGHT OF DRAFT, have no weight on horses' necks, are simple and durable.
THE MAIN FRAME IS IN ONE PIECE, easily adjusting itself in line with crank head and pitman.
THE WHEELS ARE HIGH, wide apart, giving great power, are INTERCHANGEABLE, working on either side.
THE WHEELS HAVE FOUR PAWLS EACH, giving a high motion, and preventing lost motion in turning.
THE CUTTER BAR IS FLEXIBLE, adapting itself to any uneven formation of the ground, and easily tilted either way—up or down.
THE DRAFT ROD IS ATTACHED UNDER POLE, equalizing the pull from frame and pole, and has a heavy coil-raising spring attached.
THE PITMAN HAS A BALL AND SOCKET CONNECTION (the best ever made), a straight drive, and any lost motion can be instantly taken up.
THE OSBORNE NO. 4 MOWER COMBINES EVERY MECHANICAL AND SCIENTIFIC PRINCIPLE, rendering it the best and most serviceable machine ever put upon the market for horse or man.
100,000 OSBORNE MACHINES WERE BUILT AND SOLD IN 1893, showing the intelligent farmers of the world appreciate and reward merit wherever found.
We manufacture and carry in stock the best line of STEEL HAY RAKES, SELF BINDERS, REAPERS, LEVER SPRING AND STRAIGHT TOOTH AND DISK HARROWS.
We manufacture and carry in stock pure Manila BINDING TWINE, 650 feet to the pound.
WE CARRY A FULL STOCK OF EXTRAS for all our machines at San Francisco and Los Angeles.
EVERYTHING WE MAKE IS WARRANTED AS REPRESENTED and fully guaranteed.
CORRESPONDENCE SOLICITED from dealers and farmers throughout the Pacific Coast.
SEND FOR ILLUSTRATED CATALOGUE.

Address H. O. HAINES, 339 North Los Angeles St., Los Angeles, Cal.

Or **D. M. OSBORNE & CO.**, 27 Main St., San Francisco.

Factories, Auburn, N. Y.



JACKSON'S IMPROVED "ECLIPSE" STACKER AND LOADER.

PRICE \$125.

PRICE OF STACKER AND TWO RAKES, \$245.

THESE PRICES ARE NET CASH.

MCCORMICK MOWERS and REAPERS.

HODGES' HEADERS.

DEERE SULKY HAY RAKES.

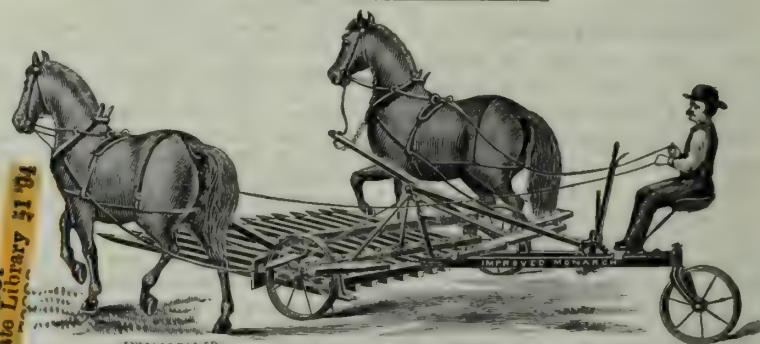
SCHUTTLE FARM AND HEADER WAGONS.

HARVESTING MACHINERY OF ALL KINDS.



JACKSON'S IMPROVED "ACME" RAKE and BUCK COMBINED.

PRICE \$60, NET CASH.



THE "MONARCH" SWEEP RAKE.

Manufactured by ACME HARVESTER CO., Peoria, Ill.

PRICE \$60, NET CASH.

THE ONLY SWEEP RAKE made that can be transported from farm to farm or one meadow to another, through gates anywhere a farm wagon can go. Write for catalogue, giving prices and full information.

FOR FURTHER INFORMATION ADDRESS

DEERE IMPLEMENT CO., 305 and 307 Market St., San Francisco.



Vol. XLVII. No. 18.

SAN FRANCISCO, SATURDAY, MAY 5, 1894.

TWENTY-FOURTH YEAR.
Office, 220 Market Street.

Representative Viticultural Establishments.

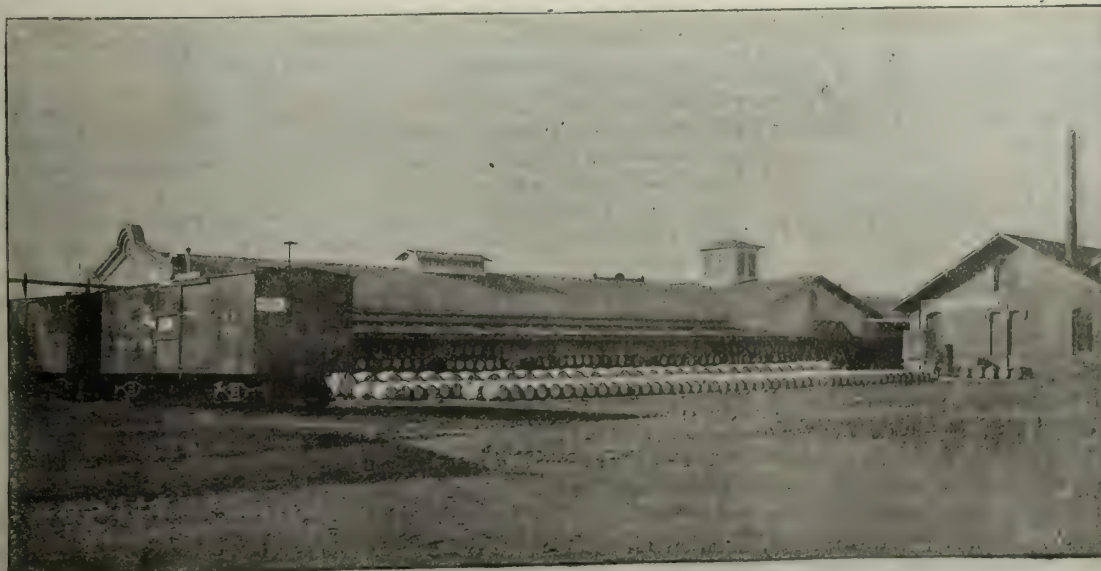
When the casual reader sees accounts of depression in the viticultural interest and of the struggle which the producer has to hold his own, in the face of foreign wines and bogus wines and other evils of the market, and has also to carry his crop through the gauntlet of drouth, frost, phylloxera and bad fermentations, he does not often stop to think how grievous these troubles are in view of the amount of capital and enterprise which have been vested in viticultural undertakings in this State. About five years ago it was estimated that not less than \$65,000,000 of value was included in our vineyard area and the establishments for producing and maintaining grape products. It is considerably less to-day, for there has been a great shrinkage in the value of vineyard acreage and a great shrinkage in acreage also, because disease and pest and neglect, as well as the plow, have brought much of the land to other crops. Still, there are many fine manufacturing outfits and tens of thousands of acres of thrifty vines with which their owners are maintaining the conflict with discouragement in the hope of the turn in the tide. There are also other concerns which, by virtue of better business management perhaps, or through other ad-



MONT ROUGE VINEYARD, LIVERMORE VALLEY.



VINEYARD AND WINERY OF GEORGE WEST & SON, STOCKTON.



THE WEST ESTABLISHMENT, SHOWING TRANSPORTATION FACILITIES.

vantage, have succeeded in spite of the general depression of the business.

The engravings on this page are representative of successful California viticultural outfits and enterprises. The smaller picture represents a portion of the Mont Rouge vineyard property of Chauche & Bon. This vineyard was set out by the late A. G. Chauche about ten years ago, and consists of about seventy acres, conveniently situated to the railroad running through the Livermore valley. The vineyard is noted for its superb wines of the claret and Sauterne types, particularly of the latter. Mr. Chauche devoted the last ten years of his life to the development of such wines to the highest possible perfection, bringing to the study his life-long experience as a producer abroad and importer here. The establishment is representative of high-class production on a moderate scale, which is usually the best in results, both to the owner and to the State.

The central engraving shows the great establishment of George West & Son as viewed from the vineyard. The location is two miles northeast of Stockton, and the vineyard is 170 acres area. The winery uses, however, grapes from other vineyards, from other valley points, from the foothills of the Sierra Nevada on the east to the foothills of the Coast Range on the west. There were 5600 tons of grapes crushed last year, and at Minturn, Fresno county, where the firm is interested in another large winery, they crushed 4500 tons. The lower engraving shows the railway side of the Stockton winery and gives an idea of its important transportation business.

George West is one of the West Brothers who brought intelligent horticulture to Stockton early in the '50's, as described in an interesting historical paper which W. B. West recently prepared for our columns. He now has his son associated with him, and is thus enabled, in spite of his own ill health, to carry forward the enterprise which has secured so valuable a reputation in the market.

The establishments which we illustrate are among the very best of their class. There are larger ones under corporate ownership, but probably none better or more successful in product and market.

THIRTY THOUSAND SHEEP have been driven into San Bernardino county en route to Inyo. The license collector has commenced suit to collect the county tax, which amounts to \$3000. Thirty sheep men have been arrested. Indeed, the troubles of the wandering flock-owner are many.

PACIFIC RURAL PRESS.

Office, 220 Market St.; Elevator, 12 Front St., San Francisco, Cal.

All subscribers paying \$3 in advance will receive 15 months' (one year and 13 weeks) credit. For \$2 in advance, 10 months. For \$1 in advance, five months.

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	1 Week.	1 Month.	3 Months.	1 Year.
Per Line (agate)	\$.25	\$.60	\$ 1.20	\$ 4.00
Half inch (1 square)	1.00	2.50	6.50	23.00
One inch	1.50	5.00	13.00	42.00

Large advertisements at favorable rates. Special or reading notices, legal advertisements, notices appearing in extraordinary type, or in particular parts of the paper, at special rates. Four insertions are rated in a month.

Registered at S. F. Post Office as second-class mail matter.

Our latest forms go to press Wednesday evening.

ANY subscriber sending an inquiry on any subject to the RURAL PRESS, with a postage stamp, will receive a reply, either through the columns of the paper or by personal letter. The answer will be given as promptly as practicable.

ALFRED HOLMAN.....Editor
E. J. WICKSON.....Special Contributor

San Francisco, May 5, 1894.

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The Week.

The full weather and crop report upon another page shows that the showers of last week yielded too little water to brighten the outlook except in northerly and coast situations. Where rain was most needed there was little more than a trace given. Things are settling down to a dry-year basis; but, fortunately, as we have previously remarked, a dry year now is not so depressing as formerly, and even those who will suffer most seem to possess their souls with fortitude.

And now frost is playing around the horizon. It seems to have done some injury to fruit in some of the small valleys in southern California, and elsewhere in the State as well. It is getting late, however, to expect much evil from that direction. The early cherries are coming in quite freely, and apricots have reached the Midwinter Fair. Let the frosts take notice that they are out of style.

The Midwinter Fair continues to attract the multitude. Much enterprise is shown in developing attractions, and the people seem to respond fairly well. The county displays are well kept up and floral decoration increases. Early products are promptly displayed. The number of visitors from distant parts has increased as the winter-fliers who have been at the south come this way on their return courses. All talkers comment upon the amount accomplished by the Fair in making California and California products better known. There seems, indeed, quite an interest in California investments, especially among those who buy large and multiply as they divide. It all makes business, and is on the whole a public benefit.

A HEALDSBURG READER ASKS: "How can I irrigate alfalfa fifty feet below spring, spring running 300 gallons per day? Will a sprinkler attached to a hose be better than letting the water run on the ground?" With such a very small supply of water a hose is probably the only way to get it distributed over much ground. One fairly thirsty gopher hole would make away with the whole supply all summer. Take it down with a hose, and if there isn't head to sprinkle much let it run out of the open hose, moving the end frequently.

Good Prices for Good Fruit.

Fruit buyers are abroad in the orchard regions and they seem to be telling the same old tales about the dullness of the season, the lack of demand, the decline of canning, the unprofitability of drying, the collapse of fruit shipping, etc. If one listens long to these doleful orators, he is apt to think that the fruit business has fallen into desuetude which is far from innocuous. We take it, however, that most of our fruit men have passed beyond the stage of gullibility and conclude in their own minds that the multitude of buyers is not traveling to secure a worthless product. It seems to us that the buyers have rather more than the usual gall in spinning such yarns this year in the face of the general understanding that the outlook for good prices for fruit this year is better than it has been for a long period, and that there is prospect of great activity in all lines of fruit shipment and preservation. Possibly there are a few growers who do not join local fruit-growers' societies, and do not read journals published in the fruit interest, who really do not know the situation here and at the East. Such people are the prey of strolling buyers of the lower class who rely on sharp trades with ignorant people, and probably not even a legislative enactment would protect them.

But while there is as good an outlook for fruit prices as could be asked in these moderate times, it is still true that the grower has an important duty to perform to ensure his participation in the higher values. The short rainfall, the defective cultivation, and the fact that the trees are as a rule overloaded, will result in the harvesting of much small fruit unless the grower proceeds at once to prevent it. In no recent year has the need of thorough thinning been more imperative. It will be a year for skin and pits to the careless grower, and skin and pits have hardly more than firewood value. There will be much discrimination this year in receiving fruit, and only that which is above objection will have a clear course in the market. We do not expect flush prices nor will the buyer take any such risks as have been assumed in former years. There has been much caution instilled into the commercial mind by recent events and the present popular sentiment, but everything we can discern promises good prices to the man who can produce good fruit in a bad year.

We hope all who are in doubt about thinning will read the essay of Mr. Kells in the report of the Horticultural Society meeting on another page of this issue. Mr. Kells acknowledges that he paid dearly for his education in this line, and why should any intelligent man desire to purchase wisdom for himself at the same cost? We have reached that stage in fruit production when a beginner can enrich himself upon the experiences of such pioneer growers as Mr. Kells. And yet there are many who can only learn by hard knocks. When nature and the fruit buyers get through with such people this summer, they will wish they never had been born.

THE RURAL reflects the season this week in its accounts of floral displays which appear upon another page. It is creditable both to the Midwinter Fair and the State Floral Society that such high rank should be given to the wild-flower show as our correspondent, who is an expert in such matters, accords it. The popularity which such an exhibition secured should be an encouragement to future efforts when a kindlier season and a wider parish may yield far greater wealth of bloom. Another event in which wild flowers bore a leading part was the Santa Barbara floral festival, though there cultivated blooms also paid large tribute. The RURAL commends all such enterprises and wishes them success. Beauty study, recreation, sociability are means by which industrial lines may be softened and the burdens of labor lightened. We are not likely to have too much of such salutary diversion and entertainment.

WE understand that the Paoli Gypsum Co. of Selma, of whose enterprise an account was given by Prof. Hilgard in the RURAL PRESS in December last, have succeeded in placing most of the gypsum they have thus far mined with various parties owning alkali lands in the vicinity of Fresno, and that in this way several large-scale tests of the practical efficacy of gypsum for alkali will result. The exceedingly short rainfall and the hard times limits the interest in land improvement somewhat, but the time will come when the abundant supply of cheap gypsum in the alkali regions will be of great economic importance.

THERE is a war between the railways on wool rates from Idaho to the East. The Union Pacific has announced a rate of \$1.90 per 100 pounds on wool to Boston. This is a cut of nearly \$1. Some time ago the Southern Pacific made a rate of \$1.90 from Kelton, and the wool men in the southern portion of the State were induced to haul to that point. Now, if tariff reform had not killed the value of wool, what fun those Idaho flock-owners would have. It is the same old story—when the persimmons are ripe the farmer has no pole.

THE flourishing horticultural society at Niles, Alameda county, is apparently to develop into a fruit-drying association. A meeting was held on Tuesday evening, May 1st, at the house of Mr. James Shinn, to hear the report of a committee which had visited the Campbell Fruit Growers' Union and other societies in Santa Clara county. Judge Tilden, as chairman, made a verbal report, showing the workings and cost of these institutions. Mr. Edward F. Adams of the State Fruit Exchange was present by invitation, and he explained the connection between these associations and the State Fruit Exchange, and the parts assumed by each in the work of distribution and marketing. It was informally agreed to incorporate a drying association, if 150 acres of drying fruit could be pledged as a beginning, and as shares representing nearly 100 acres were at once promised by those present, it was resolved to hold a general public meeting at Niles on the evening of Tuesday, May 8th, to organize an association to work in connection with the State Fruit Exchange. There are many local fruit-growers' clubs which might extend their scope in a similar way.

UNCLE SAM does not propose to let a dry year interfere with protection of his mountain pastures. It is telegraphed from Washington that the General Land Office has prepared placards to be posted in the Sierra Forest reservation in California warning persons against feeding, grazing or driving any kinds of herds through this reserved domain of 4,000,000 acres. Bona fide settlers having properly entered their claims prior to the withdrawal of these lands, and actual owners of lands within the reservation, may pass to and from their claims, but will not be allowed to occupy or use lands within the reservation outside of their claims, nor to use, damage or destroy any timber or other natural products of such land. It is perhaps necessary that this should be done, and yet a bite on the mountains would perhaps be the saving of some stock which the parched valley and foothill pastures cannot carry this year. Those who contemplate drives to the mountains should notice the warning given above.

THE success of the Los Gatos Floral Society shows what every flower-loving and flower-growing community can do. Last fall they organized a floral society and this week the society is giving a rose show. The report says 6000 people were in town; the streets were decorated, a procession of decorated vehicles was held. On May Day the floral fair in the historic stone mill, built in 1852, was opened to the public at noon. The interior was lavishly decorated in redwood and pine boughs, moss, ferns of many varieties, wild clematis and other native vines, plants and shrubs. There was a fine formal flower show and an electric fountain on the same plan as that at the Midwinter Fair, but much smaller. It rose from a foundation of rocks, ferns, grasses and greenery, and was a marvel of beauty. How much better a town is after once waking up in such an enterprise. Let all sleepy towns try it and report results to the RURAL PRESS, just to surprise the public.

AMONG the prominent agriculturists from distant parts now in California to seek recuperation and to enjoy the Midwinter Fair is Prof. I. P. Roberts of Cornell University, Ithaca, N. Y. For over twenty years Prof. Roberts has been at the head of the agricultural department of Cornell University, and since its organization has been director of the Experiment Station. His manifold duties have severely taxed his strength, and he chooses to enjoy a respite from cares in California, where he has a daughter, resident of Palo Alto. Prof. Roberts will remain in California for some time and will, we hope, become widely acquainted with our agriculturists. He visited the State University on Tuesday and spent several hours in conference with Prof. Hilgard about lines of work in which both are mutually interested.

AND NOW a court decision against grain gambling comes from Tennessee. It was rendered on Monday at Memphis, and is practically to the effect that in all sales made upon margins, unless both parties actually intend to receive or deliver the amount of grain involved in the transaction, the transaction is gambling, pure and simple, and the money so lost cannot be recovered. The case was Connors Brothers vs. Black. Connors Brothers, for Black, in 1890, sold short 100,000 bushels of oats. Black margined up 5 cents on 5000 and then stopped. Connors Brothers bought in oats to protect themselves, paying 94 cents advance, losing, therefore, \$4500. For this they sued, and the result as stated above was the end of the third trial.

WE have on another page a letter on sorghum from a correspondent in the Santa Clara valley. It was written before the publication of our articles on the same subject, and it shows how widely useful sorghum has proved itself in arid climates. We would like to have the experience of other readers.

From an Independent Standpoint.

Gen. Coxey's division of the Industrial Army reached Washington on Saturday and on Tuesday marched through the streets to the Capitol, where an attempt to hold a meeting was prevented by the action of the police. There is a statute of Congress prohibiting the entrance of organized bodies and the holding of meetings within the Capitol grounds and it was under the authority of this law that the police proceeded. When the main entrance was reached the gates were found to be closed, but General Coxey and Marshal Browne went a little to one side, stepped over the curbing, found a way through the shrubbery and reached the Capitol steps, where the former took from his pocket a written address and began to read it, when he was ordered by a police officer to stop. He replied that he was an American citizen and had a constitutional right to speak; but was told that it was not lawful to do so from the steps of the Capitol. He was disposed to argue the case but was given no chance, for two policemen, taking each an arm, led him back to his carriage. Carl Browne was not so easily dealt with. He made a great outcry about his constitutional rights and was arrested for disturbing the peace; and when he showed fight was bodily carried away to jail. The crowd which, with the Army and the lookers on, numbered about ten thousand persons, was dispersed, Coxey's men going into camp within the city limits. Here, Coxey says, he proposes to remain. His repulse from the Capitol steps, he declares, will be resented by the working people of the country and within a few weeks hundreds of thousands of the unemployed will pour into the city to lend force to the "petition" which he was not allowed to present. In the meantime the Army is without food and nobody seems to know just what is to be done about it. Coxey rests secure in the reflection that they cannot be allowed to starve.

The parade through the streets of Washington was a grotesque affair, with curious points of resemblance to the Salvation Army on the one extreme and to a circus procession on the other. First came an escort of nine mounted policemen. Mrs. Anna Diggs, a Populist agitator from Kansas, followed in a barouche; then Coxey's seventeen-year-old daughter in a habit of pure white on a white charger representing the Goddess of Peace; then Marshal Carl Browne fantastically clad and mounted on a great gray stallion; then a carriage in which sat General Coxey, his pretty wife and young baby; then a woman mounted and draped in the American flag; then the "army" of five hundred battered and tattered men, each of whom carried a banner setting forth the doctrine of good roads and enmity to plutocrats.

All along the line of march there were crowds of people, but no demonstrations other than those of curiosity. The Senate was not in session, having adjourned for the day in respect to the memory of Senator Stockbridge; but the House made a pretense of business as usual, though there was scarcely a corporal's guard in attendance.

The situation of the other "armies" is practically unchanged. The railroads have refused to grant them favors in the way of transportation; and in two instances (one in Montana and the other in Oregon) where they took forcible possession of trains, they were stopped by U. S. troops, carried back to the place of starting, and their leaders put into jail. The occasion for the employment of troops was that in each case the stolen train belonged to a road operated by a receiver under the authority of a United States Court, the theft thus being a direct offense against the Government.

Throughout the Western States the people in general and the labor organizations in particular continue to show sympathy with the movement, the grand master of the Knights of Labor having gone to Des Moines to assist General Kelly in moving his army eastward. After a long and painful march Kelly and his men arrived at Des Moines nearly a week ago, and they vow that they will march no farther; that they will stay where they are until the railroad carries them. The situation is becoming serious, for the city of Des Moines does not feel equal to the support of two thousand men, and it dares not let them become hungry and desperate. The railroad companies will probably be forced to yield, since the American Railway Union—that is, the general organization of railway workmen—has taken the matter up and threatens to tie up all the roads running out of Des Moines unless the Industrials be allowed to ride free. There is no explanation of this threat save that the railroad workmen are in sympathy with the Industrial Army movement, a fact which adds another element of gravity to a situation already very serious. It really looks as if the roads would be forced to haul the several armies to Washington; and what then? Nobody pretends to answer this question; but one fact is clear,

namely, that the men cannot be allowed to starve. Congress will be compelled to make some provision for them and it will probably be in the form of work at low wages.

The "army" which left Oakland last week reached Sacramento by boat and on foot, and after uniting with the Stockton contingent is now encamped within the city limits. Its "General" is one Carpenter, alias Inman, who is well known to the police, having served four terms in the California State prisons at Folsom and San Quentin. Within twenty-four hours of his release from the first-named place he was an "officer" in the Industrial Army.

It can no longer be concealed that the Democratic members of the Senate are hopelessly divided on the Wilson tariff bill. Senators Hill and Murphy are openly against it; Senator Gorman objects to some of its features; Senator Blackburn will not vote for it unless certain changes are made; Senator Morgan doesn't like its attitude toward the iron industries; Senator White objects to the fruit schedules, and even Senator Voorhies, who is "sound" as to the general principles of free trade, is rebellious as to certain details which affect Indiana interests. The Cabinet Ministers have appealed and the President has threatened, all to no purpose; there is no assurance that a majority could be drummed up for it if it were brought to a vote to-morrow. Indeed, a proposition for immediate vote, made last week from the Republican side, was rejected through Democratic management, a circumstance which reveals the weakness of the situation.

The truth is that the Coxey movement, with other signs of social and political menace, have frightened many of the lukewarm supporters of the measure. They feel, with an instinct entirely rational, that this is no time to launch out upon a new and uncertain policy and in their hearts wish the scheme had never been thought of. When men are in this frame of mind it is hard to get them to move, hence the paralysis which seems to have seized upon the Senate.

The measure having once been modified out of all resemblance to itself, is again being considered in Democratic caucus with the hope of bringing it to a shape in which all the Democratic members will support it, or at least a number sufficient to carry it; but thus far without success. One thing is certain, namely, that before votes enough can be secured there will have to be changes so radical as to make it practically a new measure; and in this certainty there is a world of hope for those interests in California so seriously threatened by the bill when it came from the House.

The Old and New Tariffs Contrasted.

The following contrasts the Tariff and Administrative Customs Act of 1890 and the Bill of House of Representatives 4864, as reported to the Senate from the Finance Committee, March 20, 1894. The statement is prepared under the direction of the Committee on Finance, April 2, 1894. Though the items are undergoing change in secret session of the Senate committee, the following is the latest authoritative statement and comparison of the old and the proposed tariffs:

[Present law large type and numbered paragraphs romans.]
[Proposed House amendments follow in smaller type romans.]
[Senate Finance Committee amendments are indicated as follows: Additions in italics; Omissions in romans inclosed in brackets.]

AN ACT to reduce the revenue and equalize duties on imports, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That on and after the sixth day of October, eighteen hundred and ninety, unless otherwise specially provided for in this act, there shall be levied, collected, and paid upon all articles imported from foreign countries, and mentioned in the schedules herein contained, the rates of duty which are, by the schedules and paragraphs, respectively prescribed, namely:

A BILL to reduce taxation, to provide revenue for the Government, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That [on and] after the [first] thirtieth day of June, eighteen hundred and ninety-four, unless otherwise especially provided for in this act, there shall be levied, collected, and paid upon all articles imported from foreign countries, or withdrawn for consumption, and mentioned in the schedules herein contained, the rates of duty which are, by the schedules and paragraphs, respectively prescribed, namely:

Dairy Products—266. Butter, and substitutes therefor, six cents per pound.

Dairy Products—194. Butter, and substitutes therefor, [four cents per pound] twenty per centum ad valorem.

267. Cheese, six cents per pound.

195. Cheese, twenty-five per centum ad valorem.

Farm and Field Products—270. Beans, forty cents per bushel of sixty pounds.

Farm and Field Products—197. Beans, twenty per centum ad valorem.

271. Beans, peas and mushrooms, prepared or preserved, in tins, jars, bottles, or otherwise, forty per centum ad valorem.

198. Beans, peas, mushrooms and other vegetables, prepared or preserved, in tins, jars, bottles, or otherwise, and pickles and sauces of all kinds, thirty per centum ad valorem.

273. Cider, five cents per gallon.

Placed upon the free list. Par. 436.

275. Eggs, five cents per dozen.

Placed upon the free list. Par. 471.

276. Eggs, yolk of, twenty-five per centum ad valorem. Placed upon the free list. Par. 471.

278. Honey, twenty cents per gallon.

200. Honey, [ten cents per gallon] twenty per centum ad valorem.

280. Onions, forty cents per bushel.

202. Onions, [twenty cents per bushel] twenty per centum ad valorem.

281. Peas, green, in bulk or in barrel, sacks, or similar packages, forty cents per bushel of sixty pounds; peas, dried, twenty cents per bushel; split peas, fifty cents per bushel of sixty pounds; peas in cartons, papers or other small packages, one cent per pound.

203. Peas, dried, [twenty cents per bushel]; split peas, [fifty cents per bushel of sixty pounds]; and peas in cartons, papers, or other small packages, [one cent per pound] twenty per centum ad valorem.

Note.—Peas, green, in bulk or in barrel, sacks, or similar packages, free list. Par. 580.

282. Plants, trees, shrubs and vines of all kind, commonly known as nursery stock, not specially provided for in this act, twenty per centum ad valorem.

Placed upon free list. Par. 587.

283. Potatoes, twenty-five cents per bushel of sixty pounds.

204. Potatoes, [ten cents per bushel of sixty pounds] thirty per centum ad valorem.

Seeds—284. Castor beans or seeds, fifty cents per bushel of fifty pounds.

Seeds—205. Castor beans or seeds, twenty-five cents per bushel of fifty pounds.

286. Garden seeds, agricultural seeds; and other seeds, not specially provided for in this act, twenty per cent ad valorem.

Placed upon free list. Par. 611.

287. Vegetables of all kinds, prepared or preserved, including pickles, and sauces of all kinds, not specially provided for in this act, forty-five per centum ad valorem.

Note.—Consolidated with paragraph 198, proposed law.

288. Vegetables in their natural state, not specially provided for in this act, twenty-five per centum ad valorem.

207. Vegetables in their natural state, not specially provided for in this act, ten per centum ad valorem.

Fruits and Nuts—Fruits: 297. Apples, green or ripe, twenty-five cents per bushel.

[Note.—Placed upon free list by House.] Par. 378.

298. Apples, dried, desiccated, evaporated, or prepared in any manner, and not otherwise provided for in this act, two cents per pound.

[Placed upon free list by House.] Par. 379.

213. Apples, green or ripe dried, desiccated, evaporated, or prepared in any manner, twenty per centum ad valorem.

313a. Currants, [Zante or other, ten] twenty per centum ad valorem.

213b. Dates, twenty per centum ad valorem.

299. Grapes, sixty cents per barrel of three cubic feet capacity or fractional part thereof; plums and prunes, two cents per pound.

214. Grapes, [plums, and prunes,] twenty per centum ad valorem.

300. Figs two and one-half cents per pound.

215. Figs, twenty per centum ad valorem.

215½. Olives, green or prepared, twenty per centum ad valorem.

301. Oranges, lemons, and limes, in packages of capacity of one and one-fourth cubic feet or less, thirteen cents per package; in packages of capacity exceeding one and one-fourth cubic feet and not exceeding two and one-half cubic feet, twenty-five cents per package; in packages of capacity exceeding two and one-half cubic feet and not exceeding five cubic feet, fifty cents per package; in packages of capacity exceeding five cubic feet, for every additional cubic foot or fractional part thereof, ten cents; in bulk, one dollar and fifty cents per one thousand; and in addition thereto a duty of thirty per centum ad valorem upon the boxes or barrels containing such oranges, lemons, or limes.

216. Oranges, lemons, and limes, in packages, at the rate of eight cents per cubic foot of capacity; in bulk, one dollar and fifty cents per one thousand, and in addition thereto a duty of thirty per centum ad valorem upon the boxes or barrels containing such oranges, lemons, or limes.

302. Raisins, two and one-half cents per pound.

217. [Raisins] Plums, prunes, figs, raisins, and other dried grapes, including Zante currants [one and one-half cents per pound,] thirty per centum ad valorem.

303. Comfits, sweetmeats, and fruits preserved in sugar, syrup, molasses, or spirits not specially provided for in this act, and jellies of all kinds, thirty-five per centum ad valorem.

218. Comfits, sweetmeats, and fruits preserved in sugar, syrup, molasses, or spirits not specially provided for in this act, and jellies of all kinds, thirty per centum ad valorem.

304. Fruits preserved in their own juices, thirty per centum ad valorem.

219. Fruits preserved in their own juices, twenty per centum ad valorem.

305. Orange-peel and lemon-peel, preserved or candied, two cents per pound.

220. Orange-peel and lemon-peel, preserved or candied, thirty per centum ad valorem.

Nuts: 306. Almonds, not shelled, five cents per pound; clear almonds, shelled, seven and one-half cents per pound.

Nuts: 221. Almonds not shelled, three cents per pound; clear almonds, shelled, five cents per pound] or unshelled twenty five per centum ad valorem.

307. Filberts and walnuts of all kinds, not shelled, three cents per pound; shelled, six cents per pound.

222. Filberts and walnuts of all kinds, [not shelled, two cents per pound; shelled, four cents per pound] thirty-five per centum ad valorem; cream or Brazil nuts, twenty per centum ad valorem.

308. Peanuts or ground beans, unshelled, one cent per pound; shelled, one and one-half cents per pound.

223. Peanuts or ground beans, [unshelled, one cent per pound; shelled, one and one-half cents per pound] twenty per centum ad valorem.

309. Nuts of all kinds, shelled or unshelled, not specially provided for in this act, one and one-half cents per pound.

224. Nuts of all kinds, shelled or unshelled, not specially provided for in this act, [one cent per pound] twenty per centum ad valorem.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, May 2, 1894, are from official sources, and are furnished by the U. S. Weather Bureau expressly for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total rainfall for the week.	Total seasonal rainfall to date.	Total seasonal rainfall last year to same date.	Average seasonal rainfall to date.	Maximum temperature for the week.	Minimum temperature for the week.
Yuma.....	2.16	1.36	3.16	98	44	
San Diego.....	.06	4.86	9.07	9.48	70	41
Los Angeles.....	.06	6.46	26.19	17.93	78	42
Fresno.....	.08	6.26	11.10	8.58	82	38
Sacramento.....	.34	14.19	22.90	18.99	82	38
San Francisco.....	.49	16.60	21.57	23.73	70	42
Red Bluff.....	.56	19.71	31.71	22.46	80	38
Eureka.....	1.76	52.80	46.33	42.24	56	36

Crop Condition and Outlook.

Reports from Nearly All Counties.

Following is a synopsis of the crop bulletin for the past week received by Director Barwick, of the State Weather Service, from voluntary observers:

The average temperature for the week ending April 30th was, for San Francisco, 54°; Red Bluff, 50°; Sacramento, 56°; Fresno, 56°; Los Angeles, 56°; and San Diego, 56°. As compared with the normal temperature, a heat deficiency for the week existed all over the State of from 3° to 13°, San Francisco having a deficiency of 3°; Red Bluff, 13°; Sacramento, 5°; Fresno and Los Angeles, 6°, and San Diego, 4°.

The rainfall for the week was, for San Francisco, .50 of an inch; Red Bluff, .60 of an inch; Sacramento, .34 of an inch; Fresno, Los Angeles and San Diego, each .10 of an inch. The rainfall and cool weather has helped pasturage and hay generally, but a great deal of grain was so far gone that no amount of rain would have done any good, as it came too late. There was quite severe frost over the greater portion of the State which did some damage wherever it was felt, but as a general thing the damage was slight. The outlook is very much better than last week for grain, hay and pastures. Fruit holds its own, with prospects of an excellent yield of good quality. The greatest rainfall was nearly three inches in Mendocino county and the least was a sprinkle in various portions of the State. The highest and lowest temperatures were 96° near Tulare and 23° near Susanville.

SISKIYOU (Yreka).—The heavy frosts of April 26th and 27th have doubtless killed many fruit buds and damaged the trees in bloom. Highest and lowest temperatures, 72 and 31 deg., with .08 of an inch of rain. (Ager).—The feed on the range is drying up, although on the higher hills and mountains it is quite plentiful; leaving spring-sown grain out, the farmers of this section have as yet nothing to complain about. Highest and lowest temperatures, 78 and 32 deg., with an inch of rain.

LASSEN (Susanville).—A snowfall of seven inches fell on April 26th. The damage to fruit cannot be ascertained yet. Temperature down to 23 deg. Grain looking well. Rainfall and melted snow over one inch. Highest and lowest temperatures, 73 and 23 deg.

HUMBOLDT (Hydesville).—Weather beneficial to all crops. Grain looking well. Highest and lowest temperatures, 74 and 38 deg. (Eureka).—The rainfall has insured a large grain and hay crop, and if frost holds off the fruit crop will exceed all expectations. Rainfall 1.86 inches, and for season 52.26 inches.

TEHAMA (Red Bluff).—Rainfall, .54 of an inch, did a great deal of good, the hay and grain being greatly benefited. Strawberries ripening. Prunes dropping somewhat, due to the continuous northerly winds. All other fruits looking well. Highest and lowest temperatures, 74 and 38 deg.

SHASTA (Redding).—In this county the future is assured for good crops of fruit, hay and grain. Happy Valley fruit trees are so heavily laden that some of the fruit will have to be thinned from the trees. (Anderson).—Crop prospects largely improved by the rainfall; .61 of an inch fell, and some places in the county over 1.50 inches. Prunes have fallen off some, but a good crop will be gathered. All other fruits will be heavy. Highest and lowest temperatures, 76 and 38 deg., and rainfall for season 26.14 inches.

BUTTE. —Crops on the river above Nord are pretty short. Around Nelson, Durham, Biggs and Gridley crops are very good. (Houcutt).—Crops look well, but feed is beginning to dry up. Fruit trees promise a big crop, and grapes indicate a heavy yield. (Palermo).—General appearance of crops greatly changed since the rainfall of .67 of an inch, causing the grain to make a new start. Highest and lowest temperatures, 79 and 36 deg.

GLENN (Willows).—Rainfall .47 of an inch, which will improve the wheat and barley prospects, but some grain is too far gone to be benefited. Fruits plentiful and in good condition.

SUTTER (West Butte).—Since the rain wheat and barley have taken new life; although the heads will be short, with continued favorable weather the kernels will be plump. Frost on April 27th may have slightly injured vegetation on low lands. Highest and lowest temperatures, 72 and 34 deg. Rainfall .28 of an inch. (Yuba City).—Rainfall .26 of an inch, which has decidedly improved the outlook. Fruit prospects excellent. Apricots are full and some varieties need thinning. Peaches are being thinned and the almond trees are loaded. Cherries and prunes will also make a good crop. Condition of the grain is better, because the rain has moistened the surface and given the late-sown a new start. More rain will be required.

YUBA (Wheatland).—Late showers have wonderfully livened up the crops. Summer-fallow grain will be much benefited by the rain; late-sown thought to be beyond redemption with perhaps some few exceptions. All kinds of fruits will be a heavy crop. Hops are doing well. Highest and lowest temperatures, 76 and 35 deg. Rainfall .66 of an inch.

YOLO (Winters).—The vegetable and melon crop will be benefited by the showers, as well as the grain crop. Rainfall .60 of an inch; for the season 17.05 inches. (Tancred).—Trees all well loaded with fruit. Almond crop looks well. (Blacks).—Rain benefited hay crop. (Winters).—Rain has been timely and crops of all kinds bid fair to be good. Grain and vegetables that have been suffering have already revived and bid fair to recover from the effects of the long drouth.

Highest and lowest temperatures, 73 and 45 deg. Rainfall .97 of an inch.

KINGS.—The prune crop has been damaged by the late cold winds, and pears will produce a light crop.

MENDOCINO (Ukiah).—The bopards are all reported in good condition, roots having wintered well. As to the prospects, quality and size of the coming crop, the growers are all encouraged. (Covelo).—Rainfall, 2.18 inches, which is very beneficial to everything. Highest and lowest temperatures at Ukiah, 73 and 33, with 2.36 inches of rain. Fruit prospects excellent.

LAKE (Upper Lake).—Early-sown grain on red land will hardly make hay, but all bottom crops will be fair. Fruit looks very well, and there has not been as much curled leaf on peaches as usual. Vines appear to be growing slowly. All farm work will be much helped by the rain. Highest and lowest temperatures, 87 and 42; rainfall on the 25th, when this report closed, was .21 of an inch. (Lakeport).—Rainfall, 1.36 inches. The ground is wet down to a considerable extent, and crops of all kinds will now yield fully up to expectations. (Kelseyville).—Young fruit was effected to some extent by the frosts of a week ago; but while the quantity may be less, the quality and size will be much improved.

CONTRA COSTA (Martinez).—Rainfall, .64 of an inch, and for season, 16.67 inches as against 26.95 inches to same date last season. Had the showers of the week been deferred much longer, many fields which will now yield fair crops would have been past redemption.

CALAVERAS (San Andreas).—Though rather late, the storm will be of great benefit to this county. Much of the grain is just in the right condition to receive the full benefit, and the prospects are now good for a fair crop, and the feed in the upper part of the county will be greatly benefited.

SACRAMENTO (Folsom).—The apricot crop in this vicinity and at Orangevale indicates a good crop, that at Orangevale being an unusually good one, the trees being loaded down and the fruit maturing rapidly. (Sacramento).—Rain came in time to make a hay crop, which will be quite good; but the rain was too late to benefit grain. Strawberries are ripening. The fruit crop of all kinds has advanced very fast, and will be quite early and heavy.

AMADOR (Ione).—The rain will result in much good to the crops of this section. Grain on the hills was needing rain badly, and the corn crop in the bottom lands will be much heavier by the timely shower. (Oleta).—The rain will make fair crops on fallow land if no more falls; light frost on the 28th, but no damage to fruits or vegetables. Highest and lowest temperatures 73 and 38 deg., with 1.13 inches of rain.

EL DORADO (Georgetown).—Late rains very timely. Crops of all kinds will be much benefited. Highest and lowest temperatures, 73 and 31 deg.; rainfall, 2.40 inches. (Cool).—Farmers rejoicing over a 20 hours' rain, which makes summer-fallow and early sown grain all right, and grass has taken on new life; fruit doing well; rainfall over one inch.

SOLANO (Vacaville).—Peaches and apricots will be large and fine; pears only fair, while prunes and plums will be light. The rain has helped grain and hay and the season promises to be one of the best for many years. Cherries the coming week will be shipped in carload lots. (Denverton).—Cool weather with .30 of an inch of rain makes crops look more promising. In the Montezuma hills summer-fallow grain presents a healthy appearance, and a good yield is expected. It is reported that the hay crop in this county will fall far short of the average.

INYO (Independence).—The fruit crop in Owens valley will be immense this year. Trees of all kinds, taking the wide range from almonds and figs and to winter apples, are loaded with well-formed fruit, and the danger from frost is now safely passed.

NAPA (Yountville).—Grain greatly benefited by the rain; grapes are looking well. Highest and lowest temperatures, 90 and 43 deg. (Napa City).—The prune crop was very heavy in this section last year. It will be a light one this season. Cherries will ripen in another week, and promise a fair yield. Peaches will require no thinning. Pears will probably be the usual crop in well-cultivated orchards.

MARIPOSA (Mariposa).—Rains greatly improved prospects for all crops, and will greatly benefit the grass whose roots are still green, but the top is all dried up; rainfall .96 of an inch.

SAN JOAQUIN (Acampo).—The rain and cloudy weather has greatly improved the crop prospect. Frost occurred latter part of week, but can't tell yet whether they were damaging or not. (Bethany).—Cloudy weather, with frequent showers, have been very beneficial to summer-fallow, but winter-sown is too far gone. If hot weather comes it will rapidly ripen the hay. (Stockton).—General outlook is about half a crop; rains not sufficient to do much good. (Lodi).—The rain has slightly improved the condition of wheat, but more is needed to be of permanent benefit. It was of no benefit to pasturage and but little to hay fields. All fruits promise well; light frost on the 28th in low places, but no damage done. Highest and lowest temperatures, 77 and 37 deg.; rainfall, .44 of an inch.

MADERA (Madera).—Light rains; not sufficient to benefit grain, and the high winds did damage. Cutworms damaging grapes; fruit outlook very good.

STANISLAUS (Turlock).—The heavy winds have more than counterbalanced the good effects of the rain. If favorable weather continues, there might be enough raised for seed. Highest and lowest temperatures, 79 and 34; rainfall .16 of an inch. (Newman).—Rainfall .14 of an inch. The grain is about gone up, except some patches of summer-fallow which may head out with good weather.

KINGS (Hanford).—Highest and lowest temperatures, 80 and 38 deg., with .77 of an inch of rain.

SONOMA (Bodega).—The rain will benefit the dairy country, and will greatly benefit grass and grain. (Bennett Valley).—Rainfall about one and one-half inches, which will greatly benefit all growing crops. (Petaluma).—Fruit crop promises well.

MARIN (Novato).—Notwithstanding the dry season, a fair crop of hay will be harvested on the salt marsh lands.

ALAMEDA (Niles).—Late rains benefited all crops. Young barley looks well, but will not make anything but hay. Cherries injured by extreme heat of last week. Some varieties of almonds are dropping and others doing well. Rain favorable to planting beet seed. Pasturage looks brighter since the rain. Thinning apricots commenced. Highest and lowest temperatures, 80 and 47 deg. Rainfall, .54 of an inch; season, 18.43 inches. (Pleasanton).—The timely rain was very beneficial to all crops. Highest and lowest temperatures, 76 and 37 deg., with .95 hundredths of an inch of rain.

SANTA CLARA (Santa Clara).—Orchardists are generally agreed that peaches and apricots have been injured by the late severe frosts, which is the only fruit reported at all damaged. The prospects for prunes, pears, plums, cherries, etc., are all that can be desired at the present time.

MONTREY (Salinas).—Rainfall, .21 of an inch, making 11.84 inches for the season. The rain will do a great deal of good to the crops and will considerably increase the yield of hay and grain.

SAN LUIS OBISPO (Templeton).—Rainfall estimated about two-thirds of an inch, which will only prolong a little while longer the feed where it is not entirely gone. The later-sown grain and that sowed in well-cultivated land will develop into pretty good hay, but cannot mature into grain. A large acreage of grain on the high lands will not even make respectable pasturage. If these rains are followed by several more showers we may get a small apology for a crop, but very trifling compared with the large acreage sown. (Arroyo Grande).—Cool, but no frost. The light rain will help the grain out, which will be mostly cut for hay. All late crops will be short unless more rain falls. Apricots are going to be a large crop and all other fruits promise well except pears. Highest and lowest temperatures, 70 and 40 deg. (San Luis Obispo).—Weather cool, with several showers, which will make hay crops into barley. Bean crop nearly all in and in better condition than usual. The rain has been of great benefit to pastures and crops just planted. Fruits are doing very well, especially prunes. Highest temperature, 70 deg.

FRESNO (Selma).—Damage by cutworms to vineyards is becoming a serious matter. While some vines have made a new growth of a foot or more, the majority of the vineyards are as black and bare as they

were last January. In some cases the germ of the new bud is eaten out so deep that it will never grow again, and the only hope in such cases is in the dormant bud at the base of the spur. (Huron).—There will be no crops in the Huron country this year. Rain of no benefit. Highest and lowest temperatures, 80 and 40 deg. Rainfall, .20 of an inch. (Fresno).—The rainfall has slightly improved the crop conditions, though the cold, dry winds of the 27th and 28th have had a bad effect. There will not be more than seed and feed. Fruit prospects fairly good. Highest and lowest temperatures, 78 and 38 deg. Rainfall, .10 of an inch.

TULARE (Tulare).—Continued drying northerly winds is stunting the vegetation. Nine-hundredths of an inch of rain on the 27th. The grain is mostly beyond recovery; a very small amount will probably be good for hay. Fruit crop in some localities good, while in others it is light. Fruit is dropping some. Highest and lowest temperatures, 96 and 40 deg. (Visalia).—Prospects about the same as last report. A cold north wind has evaporated what little moisture there was received from the rain. There has been no frost to injure fruit in this vicinity, which looks well. Highest and lowest temperatures, 78 and 40 deg. Rainfall, .21 of an inch. (Porterville).—The rainfall of .38 of an inch will help feed and hay, if more rain follows. Vineyards are doing well, with indications of large crops. Highest and lowest temperatures, 85 and 40 deg.

KERN (Tehachapi).—The cloudy weather, together with the light rainfall, has had a good effect on all crops. Cool nights something of a drawback. Heavy frosts on the 26th, 27th and 28th. Moisture fell here in the shape of hail and snow. So far no injury to fruit has been reported. Rainfall, .18 of an inch. Highest and lowest temperatures, 74 and 29 deg. (Rosamond).—No change in crops. Week rather windy. A slight snowfall, but we escaped frosts. Fruit doing well. Highest and lowest temperatures, 80 and 34 deg.

LOS ANGELES (Los Angeles).—Rainfall not enough to benefit anything. Grain and hay too far advanced to be helped by the rain. (Colegrove).—Rainfall, .20 of an inch and conditions quite favorable for the growth of late barley, which will make a good crop of hay. Farmers making hay of volunteer oats. Corn, beets and pumpkins are doing well. Citrus and other fruits will make heavy crops, but potato crop light.

VENTURA (Hueneme).—Corn and bean planting in full blast, but the weather not favorable; the rains have done no good. Stock have been removed from this county on account of short feed. Barley crop not improved. Rainfall, .15 of an inch.

RIVERSIDE (Arlington Heights).—The orange and lemon trees are still growing vigorously. The weather has been warmer than the corresponding week last year. The grain crop is a complete failure on the Arlington Heights land. Highest and lowest temperatures, 88 and 38.

SAN DIEGO (San Diego).—Light sprinkle of rain on the 23d; only .05 of an inch; also on the 27th; both showers followed by brisk dry northerly winds. Hay is cut and down in many places and a heavy rain would do it no good. The crop is very short at best, and a soaking rain would ruin it entirely. The fruit outlook continues good. Nights very cool. Highest and lowest temperatures, 68 and 37. (Escondido).—The bee men, as well as grain-growers, will lose greatly by the drought. The prospects for a big crop of honey are not very promising.

SAN BERNARDINO (Cucamonga).—It is surprising how early-sown grain has grown without rain. The hay crop will be nearly or quite two-thirds of an average crop. Harvesting has begun on several fields.

State Fruit Exchange Bulletin.

The State Fruit Exchange has begun the publication of a weekly bulletin designed to give fruit-growers special information concerning the state of the markets here and elsewhere, just as the Santa Clara Exchange did last year. From this bulletin for the current week we take the following:

Cherries promise a fair crop in all the principal districts. Some orchards are light, and there are some very heavy crops reported.

Apricots are very badly injured by frost on most of the lowlands and promise a heavy yield on most uplands.

Peaches show the same tendency, with, of course, less injury from frost.

Pears are variously reported, but there will be plenty of them. Prunes are almost universally reported as turning yellow and falling, leaving but a small crop on the trees.

But no one should base any transactions on any such judgment of our crop as is possible to be made yet. Such transactions would be purely speculative.

As to the Eastern Peach crop, a correspondent writes as follows: "In Georgia the freeze was very severe; the writer was in Georgia at the time. Reports then sent out were that the crop was entirely destroyed, and these have been since confirmed, with the possible exception of a few in one or two districts; possibly five per cent may mature. In Delaware at least 75 per cent of the crop is destroyed, and fears are entertained that the remainder is weakened and will tend to fall off. In New Jersey the crop is comparatively uninjured." We have no authentic advices of our own as yet from southern Illinois, Michigan or Kentucky.

MARKETS.

In dried fruits all lots remaining in growers' hands are being actively sought for and picked up at owners' prices.

For the information of those growers who have not yet sold their dried fruit we shall, for a short time, give telegraphic Eastern quotations to date of issue. California goods sold yesterday in Chicago, in bags, per hundred:

2 Crown Raisins....	\$ 3.25 to \$ 3.50	\$ 2.05 to \$ 2.30, f. o. b., Coast.
3 " " " " " "	3.75 to 4.00	2.55 to 2.80 " " "
Peaches.....	11.50 to 12.50	10.30 to 11.30 " " "
Apricots.....	14.50 to 16.00	13.30 to 13.80 " " "
Prunes, 4 sizes 60-100	7.25	6.05 " " "

Ungraded Prunes, averaging 80 to the pound, may therefore be quoted on this Coast as stiff at 6 cents.

Buyers in the Fresno District are reported as buying outside lots of Raisins at "advancing prices."

Buyers are in the field at various points for fresh fruits. Bartlett Pears on the Sacramento river are being contracted for shipment at 75 cents per box for all delivered by July 15th. In Fresno county buyers offer \$20 per ton for Bartlett Pears, \$20 per ton for Apricots and \$15 per ton for Peaches. No sales. In Vacaville \$30 per ton is offered for Apricots on the tree, or 10 cents per pound for delivery dried, and no sales. In Sutter county one lot of 75 tons Apricots sold to canners at \$1.35 per hundred. Owing to the dry season, shrinkage of fruits in drying is likely to be as light as in 1892, and growers should be cautious in contracting any kind of dried fruit without estimating. Whoever buys or sells fruit yet gambles.

MANY readers of the RURAL will be pained to hear of the death of Mr. George B. Bayley of Oakland, which was caused by an accident in an elevator in this city on Monday of this week. Mr. Bayley has for the last quarter of a century been prominently connected with the poultry interest of this State, both as a breeder of thoroughbreds and as a manufacturer of incubators, etc. He has long been well known in financial and social circles, and went early into poultry as a fancy and afterwards adopted it as a portion of his business life. In these enterprises his son was associated with him, and will, we presume, maintain them. Mr. Bayley was highly esteemed by a very large circle of acquaintances.

HORTICULTURE.

State Horticultural Society.

Report of the April Meeting—Mr. R. C. Kells on Thinning—The Cutworm, Etc.

The regular monthly meeting of the State Horticultural Society was held on Friday of last week at the rooms of the State Board of Horticulture in this city. The attendance was limited to about twenty-five persons, due, no doubt, to the fact that this is an extremely busy time with orchardists. President Lelong and Secretary Wickson were, as usual, present. Mr. J. J. Pratt, of Yuba City, was elected to membership.

Reports on Growing Crops: Mr. H. J. Stabler of Sutter county, reported that, in the neighborhood of Yuba City, plums and prunes would be a light crop. In spite of recent reports to the contrary, apricots promised well. There had been some damage from frost, but it was slight and not general. The fruit prospects along the Sacramento river are generally good. Peaches are dropping to some extent.

Mr. Hathaway reported Alameda fruit in good condition. In Sacramento county, he said, plums are falling before the north wind, but cherries, peaches and apricots are good.

A. L. Bancroft reported the prospects good in Contra Costa, though the wind had affected some crops, particularly the almonds.

Colonel Depue said that in Yolo county the apricots, peaches, apples and nectarines were good. The Tragedy prune is not showing as well as last year.

Mr. Rixford, of Sonoma, who had just returned from a visit to the South San Joaquin, said that prospects were excellent in Tulare county. In Kings county the crop would be short, especially in the vicinity of Hanford, where the frosts had been deadly in many orchards. At Porterville the prospects were better and he thought there would be a full crop. The cutworm was abroad and doing a good deal of damage. He had seen one vineyard of thirty acres which had been almost denuded of its foliage.

How to Fight the Cutworm: The special interest in this discussion seemed to be in connection with the cutworm, and there was a long discussion concerning it. Mr. Stabler said that at Yuba City they fought it with paris green or with gas lime, in the case of paris green using one pound to 200 gallons of water. This was upon the suggestion of Mr. Alexander Craw, who had made a special study of the matter. Gas lime, such as may be had free at any gas works, had been found effective.

Prof. Wickson remarked that gas lime was indeed very effective, but its use was unfortunately attended with danger to the trees. He would advise great caution in its use.

President Lelong said that an excellent method of fighting the worm was by the use of strips of sheep pelt to wrap around the tree; the wool effectually preventing the worms from crawling under the band, which on the outside was smeared with a concoction of molasses, glycerine and printer's ink. Another way was to hunt for the worms at night when they are coming out of the ground (where they lie in hiding near the base of the tree during the day), killing each worm. It looked a little slow, but it was surprising, he said, how many trees could be treated in a night's work.

Mr. Depue said that in Yolo they were troubled a good deal with cutworms and used paris green in the proportion of one pound to one hundred gallons of water, or just double the strength used by Mr. Stabler. It killed the worms and did no harm to the most delicate foliage. His observation was that the worms worked altogether at night and they were especially active and harmful in dry weather. In the earth about the base of one tree last week they found thirty-three worms in hiding. It was his (Depue's) hope that the rains of the past few days would put a stop to their depredations.

Mr. Rixford doubted if any good effects in this connection would follow the rains, as he had seen the worms in full activity in irrigated vineyards at Fresno.

Recipes for Cooking Dried Fruits.—This question came in for discussion upon call for a report from the committee which was formed some weeks ago to form a book of recipes. The plan is to print many thousands of pamphlets and to have retailers give them away with sales of California dried fruits, in this way to promote the use of these fruits. Prof. Allen of San Jose and Mr. A. A. Hibbard of Delano were added to the committee.

Grapes as Canning Fruit.—Mr. Rixford asked if anybody present had ever heard of the use of Thompson's Seedless grapes as a canning fruit?

Mr. Pratt said that the Sutter Canning and Packing Co. put up a lot of them some time back and that, while they were delicious, the market did not receive them favorably owing to their small size.

Mr. Lelong remarked that this suggested a fact very notable at this time, namely, the universal demand for the large sizes in all kinds of fruits.

The San Jose Scale.—President Lelong called attention to the fact that this pest was now gaining a foothold in the East. He had been somewhat amused and more chagrined, he said, to see official bulletins giving remedies which in California had been discarded fifteen years ago. He recalled how himself and others had tinkered around with kerosene emulsions and the like to the waste of time and money and he hated to see others go through the same novocable and wasteful experience. The sovereign remedy for this scale, he said, was the lime, sulphur and salt compound generally used in California. It had saved our orchardists millions of dollars, and it would do for the infected orchardists East what it had done here. It is not

only an insecticide but a fungicide. We owe, to very large extent, the cleanliness of our trees to this great remedy.

Thinning of Fruit.—Messrs. R. C. Kells of Yuba City, Frank Buck of Vacaville and Mr. J. F. Flickinger of San Jose had been invited to address the society on this subject, but none of them were present. Mr. Kells, however, submitted a paper on the subject which was read by the secretary, as follows:

Mr. President, Ladies and Gentlemen, State Horticultural Society.—To me this seems a very important subject for the fruit-growers of California to consider. We plant, prune and cultivate, all done with systematic thoroughness; we receive in return heavy setting of fruit. In order to receive much reward for what Nature has done for us in this line, we are called on to thin our fruits.

My experience in thinning has been with the apricot, nectarine, pear and peach, principally the latter. My object in thinning is the same as all fruit-growers of California—"for the money there is in it."

I may say there are two seasons of the year when thinning may be done: First, at pruning time; second, when the fruit is well formed. This rule applies to all varieties. At pruning time skilled labor is required, for no unskilled man is able to use the shears with the care and judgment necessary in thinning out fruit wood, whether in healthy, medium or sickly condition. If in healthy condition, it will support heavy crop. If sickly, heavy pruning will often be the means of the tree regaining full strength and vitality. And yet with careful pruning, most varieties set too full to make large-sized fruit; hence, we must thin after fruit has formed and grown to the size of small marbles, or in stone fruits before the pit hardens.

I don't know of any fixed rule we are to follow in this work. In peaches some say to not leave fruit closer than six inches of each other. One grower says, "For peach trees four years old leave on enough fruit to make four 25-pound boxes, or 100 pounds of fruit." Others say, "Thin so that no two fruits shall be within the width of the hand of each other."

Mr. J. H. Hale, a well-known peach-grower of Connecticut, alleges that he has secured good crops of peaches after 95 per cent of the buds had been killed by cold weather, and had even then thinned out some in places in order to get large-sized fruit, for one pound of his large-sized fruit would bring him six times the price he received for medium or small fruit.

My plan is to be governed some by the strength of the tree, be it a peach, pear, or apricot. If there are not too many little shoots extending along the main branches, six inches is not too close for peaches; but if there are many of these shoots, eight to ten-inch space is often required. Always pick off all double fruit. Some growers claim that it is practical to thin prunes and cherries, but with these fruits I have had no experience in thinning. I have a few acres of Gross or Hungarian plums which I find it profitable to thin.

One year's lesson—a loss of four or five hundred dollars—taught me that our Eastern friends did not want small plums at any price. My trees were broken and a great portion of the fruit was too small for shipping. Had I spent \$200 for labor in thinning these plums I could have sold \$2000 worth of fruit more than I did.

One practical lesson of this kind is sufficient. Now is the time for thinning apricots in the Sacramento valley; peaches will follow immediately, as well as pears and plums.

I find, in order to do good and sufficient thinning, that it is necessary to go over the trees twice in many cases, especially with the peach, if we have begun the work early.

We may lay down certain rules for this work, and we find some years these rules work well, while other seasons conditions arise that require care and judgment. Good judgment is the key to the whole situation. Each grower must be his own judge as to arising conditions, such as wet or dry seasons, age and health of his trees, style of market in which he wants to place his fruit, shipping, dried or canned. But in all events, large-sized fruit is what the California fruit-grower should want to produce. In order to do so "we must thin our fruit," especially the peach and all other varieties that have a tendency to overbear or produce more than the tree can mature and make large-sized fruit.

Each grower must be the father of his trees, for most seasons he must thin and thin well. Good selection of soil for planting, thorough system of pruning and good judgment in thinning of our fruits will enrich our purses, build up our homes and educate our children, which aim in life we all look to.

When I am asked by the fruit-grower, may he be an amateur or older grower, my views on thinning, I must answer as above stated. Be governed by the age, strength and condition of your trees, and the only way I know how he may get this knowledge is by practical experience. With a lesson of practical experience he may be enabled to use good judgment.

Judge Stabler said that this accorded perfectly with the experience of a very practical neighbor of his who claimed that if you took 500 from a tree originally loaded with 1000 peaches, the 500 would bring more money than the 1000; and that if you left only 250, these would bring more still. Furthermore, a tree would mature a bigger aggregate weight of large fruits with less loss of vitality than a smaller weight but greater number of small fruits.

Mr. Bancroft said that this accorded with his own observations and experience. He thought thinning left a tree in much better condition to do its next season's work.

In General.—Mr. H. J. Stabler read the following letter in relation to the Delaware peach crop:

CAMDEN, Delaware, April 20, 1894.

Mr. H. P. Stabler.—DEAR SIR: Replying to yours of the 10th: There will be no peaches on this peninsula for canning or evaporating. Accounts from Jersey are conflicting; but, on the whole, I think the peach crop east of the Mississippi will be very light and will afford a good year to the Pacific coast.

Of other fruits it is too early to speak confidently, though the indications are not favorable. I think grapes promise a full crop.

The yellows is still devastating our peach orchards, and I note with much dissatisfaction that we have the San Jose scale in the East, and are likely to be compelled to count it among the future enemies of the fruit-grower. Yours very truly, E. H. BANCROFT.

The May Meeting.—For the next meeting, set for May 25th, the general subject of fruit marketing will be considered, and the secretary was instructed to invite Mr. B. F. Walton, president of the State Fruit Exchange, and Mr. H. A. Fairbanks, of the National Fruit Company, to address the meeting. Thus it is hoped to get some advice from both sides of the question.

Bluestone on Root Knot.

To the EDITOR:—I gather from Mr. Egbert Smith of Napa that he has for years applied a strong solution of bluestone to the wounds made on removing the "crown knots" from his trees, and that it is eminently successful in that the knots do not reappear.

In this connection he relates a peculiar circumstance—or so it seems to me. Being hurried with work at one time, he poured a spoonful or so of the solution into a hole previously bored into the knots, with the result that the next day every tree so treated showed a brown mark from base

to summit on that side, and the leaves on every branch in a direct line from where the liquid was applied died and dropped off.

Mr. Smith at first naturally feared for the life of his trees, but the following spring they showed no further signs of injury.

It is so clear and positive that the bluestone was carried up the tree from the interior of the knot, through the sap, and in the fall, that I mention it as being remarkable.

Does this conflict with theory? or what deductions may be drawn? LEONARD COATES.

Napa, Cal.

Importance of Interplanting Different Pears.

Last summer we announced some very important experiments by the Division of Vegetable Pathology of the U. S. Department of Agriculture, showing that some pears were not productive when planted in solid blocks by themselves and became good bearers when near other varieties. California fruit-growers have had considerable experience in this line with almonds and plums and with pears also, and they will be interested in a fuller statement of the results of the experiment with pears, as just published in bulletin 5 of the division above mentioned. We give the following

GENERAL SUMMARY AND CONCLUSIONS.

In the pollination work on the pear two distinct kinds of experiments have been tried, (1) simple bagging experiments, in which bags of paper, cheese cloth, or netting with meshes (ten to the inch) were placed over the unopened buds and outside pollen thus excluded; and (2) careful hand-pollinations of flowers which were emasculated while yet in bud and protected from all other pollen by paper bags. These experiments were carried on in large numbers and at four different places, viz.: At Brockport in 1891, and at Scotland, Rochester and Geneva in 1892. The conditions of the trees were widely different, as was also the weather at flowering time. The work was done on a large number of varieties of pears, several of which occurred in all four of the series of experiments. The results under these varying conditions have substantially agreed, in most cases being remarkably uniform. The fruits resulting from the different kinds of pollen showed interesting differences, which tend to corroborate the conclusions.

It should also be noted that similar experiments were tried on the apple and the quince along with the pear work. The varieties of apples are more inclined to be sterile to their own pollen than the pears. With the former, in the great majority of cases, no fruit resulted from self-pollination. The results, as a rule, however, were less clear-cut than in the pear, because with most of the self-sterile varieties an occasional fruit will set under self-pollination, and none of the varieties were very completely self-fertile. The quince, on the other hand, seems to fruit nearly as well with its own pollen as with that of another variety.

The following conclusions are, it is thought, fully warranted from the evidence which has been given, and doubtless many who read this will recall observations in practical orcharding which give further support:

1. Many of the common varieties of pears require cross-pollination, being partially or wholly incapable of setting fruit when limited to their own pollen.
2. Some varieties are capable of self-fertilization.
3. Cross-pollination is not accomplished by applying pollen from another tree of the same grafted variety, but is secured by using pollen from a tree of a distinct horticultural variety, *i. e.*, which has grown from a distinct seed. Pollen from another tree of the same variety is no better than from the same tree. This failure to fruit is due to the sterility of the pollen and not to mechanical causes.
4. The impotency of the pollen is not due to any deficiency of its own, but to the lack of affinity between the pollen and the ovules of the same variety.
5. The pollen of two varieties may be absolutely self-sterile and at the same time perfectly cross-fertile.
6. The state of nutrition of the tree and its general environment affects its ability to set fruit either with its own pollen or that of another tree.
7. Bees and other insects are the agents for the transportation of pollen.
8. Bad weather during flowering time has a decidedly injurious influence on fruitage by keeping away insect visitors and also by affecting the fecundation of the flowers; conversely, fine weather favors cross-pollination and the setting of fruit.
9. Pears produced by self-fertilization are very uniform in shape. They differ from crosses not only in size and shape, but also, in some cases, in time of maturity and in flavor.
10. Among the crosses the differences were slight or variable, so that their variations are not to be ascribed with certainty to differences in pollen.
11. Self-fecundated pears are deficient in seeds, usually having only abortive seeds, while the crosses are well supplied with sound seeds.
12. Even with those varieties which are capable of self-fecundation the pollen of another variety is prepotent, and unless the entrance of foreign pollen be prevented the greater number of fruits will be affected by it, as shown by the study of Buffum pears.
13. The normal typical fruits and, in most cases, the largest and finest specimens either of the self-sterile or self-fertile sorts are crosses.

PRACTICAL CONCLUSIONS.

1. Plant mixed orchards, or at least avoid planting solid blocks of one variety. It is not desirable to have more than three or four rows of one variety together, unless experience has shown it to be perfectly self-fertile.
2. Where large blocks of trees of one variety which blossomed well have failed to fruit for a series of years without any apparent reason, it is exceedingly probable that the failure is due to lack of cross-pollination. The

remedy is to graft in other varieties and supply foreign pollen.

3. Be sure that there are sufficient bees in the neighborhood, or within two or three miles, to properly visit the blossoms. When feasible, endeavor to favor insect visits to the blossoms by selecting sheltered situations or by planting windbreaks.

PEARS WHICH ARE SELF FERTILE AND SELF STERILE.

We give below a list of the two classes of pears, (1) those which are more or less completely incapable of self-fertilization, and (2) those which have shown a more or less pronounced ability to self-fertilize:

Self sterile varieties.

Anjou.	Howell.
Bartlett.	Jones.
Boussock.	Lawrence.
Claireau.	Louise Bonne de Jersey.
Clapps Favorite.	Mount Vernon.
Columbia.	Pound.
De la Chene.	Sheldon.
Doyenne Sieulle.	Souvenir du Congres.
Easter.	Superfin.
Gansels Bergamotte.	Wilder (Colonel).
Gray Doyenne.	Winter Nelis.

Self-fertile varieties.

Angouleme.	Heathcote.
Bosc.	Kieffer.
Brockworth.	Le Conte.
Buffum.	Mannings Elizabeth.
Diel.	Seckel.
Doyenne d'Alencon.	Tyson.
Flemish Beauty.	White Doyenne.

Nomenclature of the Citrus Family.

Our citrus fruit-growers will be interested in a Florida effort to arrange and classify orange varieties according to their probable derivation. The following was submitted at the last meeting of the Florida State Horticultural Society:

For several years I have given considerable time and thought to study of the derivation of the citrus and comparison of varieties of the different species, both by field study and analysis of qualities by the scale of points. At the Deland meeting of the society I informally brought to its notice a chart that gives a bird's-eye view of the derivation and development of the four primary species and their crosses or varieties. These primary species, like the thorn apple of temperate climates, still grow wild in the East Indies, the native home of all the citrus, being all unedible, and are the fingered citron, the wild lime, the citrus trifoliata and limonia or citrus acidissima.

The sour orange, familiar to all, is a representative of the lime family, though a hybrid many degrees improved over its original parent.

Most orange-growers are acquainted with the fruit of the deciduous citrus trifoliata, which gives the musky flavor of fruit and hardy habit of the mandarin family, but as few have seen the fruit of the red limonia, which is the parent of the shaddock, tangerines and blood oranges, and the fingered citron, which has given the sweet edible character to all the citrus fruits, I took special pains, while attending the Columbian Exposition, to find specimens in the East Indian exhibit, and was so fortunate as to secure the citron and limonia of the Siamese Royal Commissioner, and I take pleasure in showing these specimens to the society, for fortunately they are preserved in syrup and retain perfectly their form and much of their color. The fingered citron, you will observe, is composed of loosely adhering lobes or segments without any central core, and these segments are also entirely covered with peel and contain no edible juice. They are only used in the East like a bouquet of flowers, for the sweet odor they exhale.

This citron hybridizing with and breeding up from the lime has developed two strains of fruit. The first are oranges, which retain the form of the lime but the sweetness of the citron; the highest bred examples we have are the navel and Early Oblong oranges, which you will observe, in a general way, have the same form as this citron. The second strain is the commercial lime and lemon family, which retains the modified acid of the wild lime but the color and oblong form of the citron. This citron, progressively crossing with the citrus trifoliata, has developed the loose segmented mandarin orange. And, again, the citron and limonia crosses have produced the shaddocks and Malta blood oranges, which latter, especially, closely copies the form of the limonia. It must not be understood that I suppose any of the hybrids we have to-day as being primary crosses, or even as resembling the fruit that would result from an equal blending of the qualities of any of these wild primary species, for the tendency of hybrids is to produce unedible monstrosities, and it is only the careful selection and cultivation by man through ages of time of the gradually improving varieties which have crossed and intercrossed with each other, that has given us the well-nigh perfect fruit we possess to-day. Therefore, in listing oranges I follow nature's grand divisions and make but four varieties, viz.: The citron or sweet China, the lime or Portugal, the shaddock or Malta blood, and the trifoliata or mandarin oranges.

As preliminary to the work of the cataloguing committee I have, under these four varieties, listed some 55 sub-varieties of oranges of those in general cultivation having commercial merit, for many of the so-called varieties so nearly resemble each other that an expert cannot possibly tell them apart. I append these lists, the names being set as nearly as possible in the ordinary sequence of edible maturity:

CITRON OR SWEET CHINA ORANGES.

1, Sweet Seville (Imperial); 2, Early Oblong; 3, Meliten-sis Navel; 4, Washington Navel; 5, Whittaker; 6, Non-pariel; 7, Parson Brown; 8, Centennial; 9, Old Vini; 10, Dulcissima; 11, Circassian; 12, Homosassa; 13, May's Best.

LIME OR PORTUGAL ORANGES.

1, Acapulco; 2, St. Michaels; 3, Double Imperial

(Navel); 4, Dummltt; 5, May's St. Michaels; 6, Prolific; 7, Du Roi; 8, Pineapple; 9, Drake's Starr; 10, Paper Rind St. Michaels; 11, Botelha; 12, Beach's No. 5; 13, Hart's Late.

SHADDOCK OR MALTA ORANGES.

1, Imperial Blood; 2, Boone's Early; 3, Sanford's Sweet Blood; 4, Amory's Blood; 5, Jaffa Blood; 6, Saul's Blood; 7, Ruby (Du Roi Blood); 8, Malta Blood; 9, Jaffa; 10, Riata; 11, White; 12, Mediterranean Sweet; 13, Malta Egg; 14, Star Calyx; 15, St. Michaels Blood; 19, Majorca; 20, Malta Oval; 21, Valencia Late.

TRIFOLIATA OR MANDARIN ORANGES.

1, Satsuma; 2, Tangerine; 3, Mandarin; 4, Japanese Tangerine; 5, Dancy's Tangerine; 6, Cowgill's Tangerine; 7, Cleopatra; 8, Travelers; 9, Sprack; 10, King.

Glucosing Dried Fruit.

TO THE EDITOR:—Can you tell me how to use glucose on dried fruit to protect it from insects or worms, the proportion and manner of using? If you cannot, will you kindly ask the question through the pages of the RURAL? R. E. FARRINGTON.
Phoenix, Arizona.

[We never heard of the use of glucose for this purpose. Are our readers wiser than we?—ED. PRESS]

SUMMER CROPS.

Experience with Sorghum.

TO THE EDITOR:—Under the heading of Durra, Doura, Doura Millet, Indian Millet, Sorgho Grass or Sorghum, the encyclopedia speaks of plants' cultivation for their seed in Asia and Africa, also of the value of sorghum as forage, and of their introduction into the United States. I recollect when it was recommended to my parents as something which would thrive where corn would not "ear." The soil of our orchard being poor and heavy, we tried it there, and it did well among apple trees whose trunks were three to four feet through, and it also did well in the orchards of neighbors.

Coming west where it was raised, I found that color and nature of soil had much to do with the quality of syrup produced. The worn mulatto-colored soil, such as had been good for tobacco and wheat, giving best results. But it was not until reaching Kansas that I knew of the many staying qualities of sorghum, and though it thrived anywhere, it did best, considering yield, sweetness and ease of curing and keeping, in southwestern Kansas, where there predominated reddish mulatto soils (disintegrated volcanic matter and decomposed vegetable substance, *i. e.*, buffalo grass and wild sunflower). Even there it did well on "gumbo" (adobe) formed in valleys and about ponds. The rolling slopes were red, mellow (after the sod had rotted), warm, lively soils. The summers and autumns were dry, (2300 feet above sea level). Alack! too often so all the year, but for the hot winds in summer and blizzards of winter, upon these rolling lands sorghum was more certain than corn. The sorghum factories east and north of us, on the railroad, turned out fine syrup at 20 to 40 cents per gallon, while the seed at one-half to one cent per pound paid them equally. We grew it only for feed. The seed, soaked till soft, then boiled, was good for pigs and poultry. The hay was relished by horses (made them weak, some said, of which I was not convinced). Cows ate it eagerly, picked up in flesh and in milk, shed well in spring.

I was late in getting moved, those of experience said it was too late; but I found 75 pounds of dusty cane (sorghum—Early Amber) seed, which I yet prefer to the many other sorts. I bought it, as it was the last to be had, paid \$1, a premium. I sowed same on 1½ acres, July 3d; it grew four to six feet tall. Just as it was heading out, while in the dough, I mowed it with a scythe, let lay in the sun a day, by which time the watery juice had evaporated. It must cure until seemingly shriveled, when no juice can be seen by twisting and breaking the stalks. Sown as had been mine, the stalks were the size of a straw to the diameter of a lead pencil. It was sweet as sugar, was estimated to weigh in all ten tons. After feeding two cows, two calves, a span of mules, and myself chewing a wisp while choring, I had a considerable left in spring.

While unable to speak of what it would do here I believe it a safe experiment. Provided seed is desired, lay off rows and plant in rows, as you would corn; the stalks when so planted would be large and taller, are unfit for hay, but may be worth curing, however. The large per cent of sweet is apt to cause souring unless well cured, and kept in small stacks, and covered from fall rains.

If sorghum hay making is aimed at, you can not have seed also; that is, if sown close enough for hay, its seed, if allowed to ripen, would not recompense the loss in quality of hay. Certainly sorghum will not exhaust your orchard, a few rows for seed and some strips for hay may pay big; at any rate, you'll have the value of proving.

In the States we plant after frost is over, are careful to have the ground worked deep. If in rows, put in plenty of seed, thin and hoe. At first it might be mistaken for grass; it is yellowish green, spindling, sickly looking stuff. It is slow for some time, but once it takes a start it grows rapidly and continuously and stands dry weather well. The seed may be sown broadcast and plowed under, or it may be deeply drilled in. But first have your ground pulverized deeply, and get the seed in accordingly. Bear in mind this is not a cold, wet, backward spring, the ground is already warmed and dry, and there is little danger of planting too deeply. The same applies to corn, as to preparing of land and planting, about which more anon.

Campbell, Cal.

PRIVATE FRY.

Field Culture of Potatoes.

A deep, sandy loam, retentive of moisture, makes an ideal soil for potatoes, but probably four-fifths of the crop of this country is produced in soils that are not naturally first-class for the purpose. The tubers require a naturally loose soil for their development, and it is partly for this reason that clover is recommended at the East as a crop to precede potatoes. The decaying tops and roots of the clover prevent the ground from packing. Then, too, the potato does not always bear heavy applications of stable manure without injury, and the clover furnishes a safer fertilizer. Where it is impossible to grow clover as a sod, a winter growth of some green manure crop may be very profitable.

An Eastern writer gives the following outline of his experience:

"Good growers differ in regard to the depth of turning a sod for potatoes. As I grow about 20 acres of potatoes every year, it is a matter of importance that I turn the sod the right depth, and I frankly confess that I am not plowing quite so deep as formerly. We are after yields; and, while the soil will permit of being broken eight or nine inches deep, and has been turned that deep, yet now I try to plow about seven inches, and want the furrow left well on edge. Seven inches is enough in my rather clayey loam, I think. For preparation of the seed bed, I know of nothing better than the disc harrow and plank drag. I double-cut with a 16-inch disc, and like to crosscut when time permits. A good preparation of the seed bed is essential. If it be fine, a surer and more even stand is gotten, and the growth is better.

"In cultivation, I have a slant-toothed harrow and a weeder. These should be freely used, both to kill young weeds and to keep the crust broken so that air can enter the soil. The air is essential in the soil, and the crust that beating rains and sunshine form is injurious to the young plants. The weeder can be used until the plants are several inches high if the soil is not too compact. When the plants show well in the row, I give them a close and deep plowing. This is necessary in clayey loams, as spring rains pack the soil. Then the weeder can be used to level the surface; and after the plants are about four inches high, I do not want to disturb the roots unless the rain runs the soil together—a thing that growers in loose soils do not have to fear, and one that a good sod goes far to prevent.

"Then level surface cultivation is all that is needed. I write of well-drained land, as none other should be planted with potatoes. I use the Planet Jr. one-horse plow that has "sweeps" for level cultivation. The cultivator is spread the proper width and one row plowed at a time. There is no "hilling up." Moisture is retained better by leaving the land level, and in case of light rains the hills get their share of falling water. I am often asked how often I plow my potatoes, and can give no definite answer. All depends upon the season. Theoretically, I run over all the potato ground with surface cultivator as soon as the soil permits working after every rain. Practically, with a considerable acreage, I try to do this, but showers may interfere. I continue to run the cultivators until the vines fall down and close the middles. I pay no attention to the blooming. The cultivation is only an inch or two deep; and so long as the tops do not cover and shade all the ground, the "earth mulch" must be used.

"After stopping cultivation, weeds may start in the hills. They should be drawn out or cut off by hand. A weed in a hill injures it badly by pumping out the moisture needed by the plant, and by using up the soluble plant food. The potato responds readily to good culture and is especially injured by neglect. No man should plant potatoes unless he is able and willing to give them all needed attention. They are a costly crop on account of the seed and harvesting, and no one can afford to give only half culture to them. Prepare the soil thoroughly, plant only good seed, and after the plants are four inches high, unless the soil is hard-packed by rains, give only shallow cultivations, and let them be frequent."

THE FIELD.

Gathering Castor Beans.

A writer in a recent number of the *Epitomist* gives the following method of harvesting the beans, which may prove of interest to some of our readers:

The first thing is a big yard with a slope in the south, if convenient. For ten acres of beans make a yard 80 or 100 feet square. There is no danger of having too large a yard.

Drive stakes in the ground and lay poles on top of the stakes, and then arrange boards four feet long around the yard against the poles to keep the beans from wasting. Next take a horse and small sled with a ten-bushel box on it to the field to get a load of beans. An ordinary pocket knife will do to cut them with. Drive the horse between the rows and cut from two rows on each side of the sled.

You can tell which beans are ripe by one or two pods on a spike turning brown; cut off the whole spike and put in your box. When your box is full drive to the yard and put the spikes all in a heap and let them lay until they heat. Make a large heap and they will heat quicker. When they get slick and black, scatter them over the yard, not leaving one spike on top of another. When they begin to pop freely, stir them with a rake or a pitchfork, but remove your shoes before going into the yard, lest you mash the beans. If any of the pods fail to pop, remove them by themselves, and whip them with a board and they will then pop. After they are through popping they should be swept up and cleaned by running them through a fanning mill. They should not take any rain after they are popped, as it is liable to injure the sale of them.

Some men use a popping house, but I don't like them, as they are very troublesome, and also because there is

plenty of sunny weather to pop our beans when we make a yard large enough. Beans popped in houses are sometimes cooked and will not germinate when planted, and also will not sell for the best prices.

Beans should be gone over twice a week, so as not to let any pop out in the field. They will begin ripening the last of July and continue until killed by frost. One good hand can take care of ten acres, but a beginner should not try to attend to more than seven acres without help.

Plants on Alkali Soils.

TO THE EDITOR:—From time to time I see a number of articles on "What to plant on alkali land," and I beg to give you my experience in the matter. While they claim pears and prunes will do better than most any other trees on this class of soil, I beg to differ from this opinion. I have tried all kinds of nursery stock, consisting of pears, peaches, prunes, almonds, quinces, apricots and nectarines, on soil which is impregnated with alkali, and am satisfied nothing will grow of the list enumerated and do well. They may perhaps start, but will finally die. I have thoroughly tested this matter, and if any one asks me what will grow on this particular soil, my answer will be: Fan palms, beets and cockleburrs. GEO. BURROUGHS. Fresno, Cal.

[Our correspondent evidently has pretty strong alkali to deal with. Pears will stand more alkali than other fruit trees, but there is alkali which even they cannot survive. Proper treatment with gypsum as has often been described in our columns will reduce alkali to such an extent that some plants which will not grow on the soil in its untreated condition will take hold. There is some claim made for almonds as enduring considerable alkali, but our correspondent shows that this claim must be taken with the understanding that the alkaline percentage must not be too high.—ED.]

THE IRRIGATIONIST.

Artesian Well Irrigation in Kern County.

TO THE EDITOR:—In your issue of April 7th, in an article on "Irrigation in Kern County," you speak of flowing wells of a capacity for irrigating 1000 acres. This is a little overdrawn, still the net truth is good enough. The largest wells in the county are in this district (Miramonte) and cover an area of perhaps 20,000 to 30,000 acres—hardly more. The largest well runs about 4,000,000 gallons daily. The next about 3,500,000, and several others from 3,000,000 down to 1,500,000. Few people can be convinced that wheat can be successfully grown by irrigation, and especially by the water from an artesian well. Our actual experience in this direction, this excessively dry winter, may be both of interest and of value.

On section 7 of the Miramonte colony are 330 acres of wheat, irrigated thoroughly from a single well. This land was sown very light for grain—sown 35 pounds to the acre—but will be cut for hay, as the high prices ruling will make a larger return than would grain at present low prices.

The yield will not run over 300 tons, about, on account of the thin sowing. The land was new, never having been cleared even, and dead dry. So, with this and the lack of aid from rains, probably the same water in another year would irrigate 500 acres. Total rainfall this season, 2.70 inches.

On section 17 is another well of the same capacity, which is irrigating 340 acres of grain, besides about 100 acres of trees and alfalfa, and doing it thoroughly, too. The grain will run from one to four tons of hay to the acre, according as it was sown and cared for.

One piece of wheat hay has just been cut and stacked, and runs four tons to the acre. It was sown thickly for hay, however, thoroughly put in and cared for since, showing that "as ye sow so shall ye reap."

Now, so soon as we get our hay all off, say in four weeks or so, we will seed a large portion of this land to Egyptian corn and sorghum, which with our water supply will make a sure crop for the summer.

It goes to my heart to see people, as I do almost daily, driven from their homes east and west of us, by the dry year, and, with their families, scouring the country seeking for work—hard to find—and to look abroad at the same time on thousands of acres of land, on all of which water in abundance can be cheaply had at a total cost, for land and perpetual free water supply, of less than a mere water-right and a year's rent would come to in other parts of the State. It seems incredible that in the heart of this State a country could exist where crops are beyond the possibility of failure in any year and hardly one per cent of the land being utilized, yet such is the sad fact.

COST OF WELLS, LANDS, ETC.

Average cost of well of a capacity of 320 acres.....	\$1,200
Clearing land, 75 cents per acre.....	200
Leveling, checking and ditching, \$2 per acre.....	640
Fencing, three miles rabbit and stock proof.....	300
Cost of 320 acres of good land at from \$12.50 to \$20 per acre, say at an average of \$15.....	4,800
Total.....	\$7,140

A total gross cost per acre of \$22.30, with a tract of 320 acres ready to cultivate and irrigate.

Of the above items the clearing, leveling, checking and ditching can be done by the owner, calling for no cash outlay on that \$840.

Of the well about \$300 can be done by the owner, and of the fencing fully \$100.

So the cash outlay would be:

Well (and this can be put down on part credit).....	\$900
Fencing.....	200

Total (outside of buildings, stock, tools and provisions).....\$1,100

Land can be got with no cash payment for the first year and on very easy terms thereafter, at a low rate of interest.

On 80 acres in grain alone, at an average price in San

Francisco of \$1.25, a sure return of ten sacks the first year would net on the place, exclusive of seed, sowing and irrigation, etc., \$10 per acre, or \$800; second year, 12½ to 15 sacks; third year, 15 to 20 sacks, according to care in farming. So the 320 acres would support four families, and from the crops they could pay for the land easily. Is it not a good opportunity for a man of moderate means? Miramonte, Kern county. GEO. A. RAYMOND.

FLORIST AND GARDENER.

Wild Flower Show at Midwinter Fair.

TO THE EDITOR:—The largest exhibition of California wild flowers ever held in San Francisco was that which recently delighted the visitors at the California Midwinter Exposition. It opened on the 21st of April, continuing three days, and was under the auspices of the California State Floral Society, which had appointed an acting committee of eight members. By letter and personal solicitation every county near and far was invited to join in making this exhibition a typical collection of the California flora. Only partial success was, however, attained, as was to be expected. San Francisco and Alameda counties responded most graciously, and, to some extent, eleven other counties were represented—Solano, Sonoma, Shasta, Marin, Mariposa, Santa Clara, Placer, Napa, Sacramento, Lake and Merced.

By 6 P. M. on opening day there were 299 vases of flowers in place, and 97 varieties represented. San Francisco, owing to the indefatigable efforts of one of the committee, Mrs. W. S. Chandler, displayed 54 varieties. Every day brought in fresh consignments of flowers, and by Saturday noon 175 varieties were in place, clusters being duplicated in some cases twenty times. Every table had its *Brodiaea laxa*, Indian pink and eschscholtzia or California poppy.

One of the most highly appreciated displays was that of Placer county, sent by the school children of Colfax under the direction of Mrs. William Irving and Mrs. Fred Irving. Thirty-four varieties stood on this table and more than half of them had no other duplicates in the room. These were the dogwood, Judas tree or red bud, *Silene Californica* or scarlet catchfly, several varieties of *Calochortus*, dogtooth lilies, trilliums, *Fritillaria*, *Hosackia*, *Lathyrus* and *Clematis*, and a dozen or more of the interesting little *Mimulus Douglasii*.

Solano was one of the first counties to send in flowers. Eschscholtzias, lupines in variety, cream cups and wild forget-me-nots were sent by Mrs. Thomas of Dixon. Mrs. James Miller of the same place added largely to this table, sending in the finest bunches of *Brodiaea laxa* and *Calochortus pulchella* that were in the whole exhibition.

Sonoma was well represented by flowers from Mrs. W. D. Sink of Cloverdale, Mrs. Grace Bean of Guerneville and Fountain Grove Vineyard Co. Mr. Close, commissioner from Sonoma, was very kind in arranging exhibits, and to him the committee is indebted for the use of the handsome rustic basket filled with growing native ferns. The basket is of madrone and is owned by Miss Lizzie Clark. One flower in the Sonoma exhibit was new to hundreds of visitors—the *Fritillaria recurva*.

Sacramento and Napa counties each had a table decorated with but few varieties of flowers, but the clusters were large and handsome, making a striking effect. The former, cared for by Mr. Chetwood, displayed azalea, poppies and brodiaea, and the latter was covered with larkspur, brodiaea, lacepod and poppies sent by Mrs. W. Nichols of Elk Grove.

Shasta's flowers, sent by Mrs. Mary Bell, were much admired. The showy delicate pink phlox was interspersed with the blue of the brodiaea and the red of *Delphinium nudicaule*.

Santa Barbara had but one collection—that sent by Mrs. A. C. Johnson of Mayfield—but the collection was varied and the varieties dainty, yet hardly typical of the county's wild flowers. The same may be said of Marin's display. It was supplied by non-residents, and, though pretty on opening day, it was no criterion of the floral resources of the county. Bleeding heart, wild ginger and double cream poppy were on this table. Misses Rose and Josie Anderson of Lake county exhibited a table of ferns and madrone, and on Saturday there were 20 varieties of ferns in place, including great masses of maidenhair.

Santa Cruz flowers were kindly supplied by Miss Settie Anderson, and the exhibit was of flowers with abundance of foliage, giving it a really woodsey aspect. There were ceanothus, willow, maple, *fritillaria*, trilliums, thermopsis and lady's slipper or moccasin flower.

Mariposa had but one representative of her flora, but it was queen of the exhibit and all unconsciously held court, surrounded by admirers. This was the brilliant snow plant (*Sarcodes sanguinea*), kindly sent by Mr. T. W. Miller of Yosemite valley. It was a handsome specimen, five pedicels rising from the soil. Thousands closely examined it and several ladies availed themselves of permission to sketch it.

Merced came in late with a few handsome cases of flowers, including *Calochortus citrinus* exhibited by Mrs. H. K. Huts of Snelling.

Mrs. Carl Purdy of Ukiah, Mendocino county, sent a handsome exhibit of ferns raised from native bulbs, showing the capabilities of these bulbs in cultivation. There were *cyrtopodium*, or lady's slipper, cluster of five different varieties of *calochortus*, brodiaea in three varieties and other handsome flowers. The collection won well-merited admiration.

Alameda county made the largest display, though it had not half so many varieties of flowers as San Francisco. One table was laden with great clusters of our own State flower, the *Eschscholtzia Californica*. One hardly dreamed that there could exist such specimens as were on Mrs. B. M. Lelong's table. Six inches did they measure from

petal to petal, when fully expanded. Not merely one of this size, but hundreds. It was a blaze of glory when one stepped into the exhibition hall. A smaller table decorated with poppies was very pretty, though eclipsed by the larger one. A lupine table was very pretty, the blue and white bicolor being used. It was sent by Mrs. Sturtevant. Alameda also had an exhibit of varieties of wild flowers supplied by Mrs. J. H. Strong of Sunol and the botanical garden of the State University. One fine cluster of poppy (*Meconopsis heterophylla*) was universally admired.

San Francisco had four tables of flowers, very interesting to the student of botany and surprising to those of our residents who never roam over hill and dale. Over sixty varieties were displayed during the exhibition. Golden Gate Park placed a large collection, including not only the flowers of the field plucked from their native soil as lupines, mustards, ferns, layra, etc., but fine specimens of *calochortus*, *brevortia*, *brodiaea*, saxifrage in variety, which had been planted on Strawberry Hill and were kindly culled by the superintendent to add variety and interest to the exhibition. The other tables were supplied by Mrs. W. S. Chandler, Mrs. Helen A. Cross, Mrs. A. Micklau, Mrs. Lizzie Schutenhaus, Miss E. Cannon, Miss Ella T. Baily and Mrs. Wiester.

The exhibition hall had been tastefully trimmed with pampas grass plumes, donated by Mr. Joseph Sexton of Santa Barbara, and the hall was beautified by several collections of cultivated flowers. Mr. H. B. McGowan of Thermal Vale Nursery had four tables covered with the handsomest display of anemone ever made in San Francisco. Mrs. O. E. Babcock of Alameda exhibited *pelargonium* and roses. Mr. James Clayton of San Jose sent roses, and Mrs. W. D. Sink, Mrs. H. E. McClure of Dixon, Miss H. H. Hastings of Benicia, Madam Michel of San Francisco, Mrs. Bell of Shasta, Mr. J. Henderson, Jr., Mrs. L. O. Hodgkins and Mr. Thorne of Santa Cruz, exhibited other cultivated flowers.

The Floral Society handed what was left of the exhibit to the Exposition management on Saturday evening, and that body conducted a flower exhibit for the week following, filling up the empty spaces with cultivated flowers from Watsonville, San Joaquin, Santa Cruz and Merced.

ELLA F. BAILY.

The Santa Barbara Flower Festival.

Despite the dry year, the financial depression and the counter attractions of the Midwinter Fair, Santa Barbara planned her annual flower festival upon a more lavish scale than ever before, and carried it to a successful termination, to the delight of thousands who made the week in the delightful seaside city. We attempt to portray a few of the salient features of the festival for the entertainment of our readers.

As usual, the city put on floral holiday attire. The chief buildings were decorated most elaborately. A great arch of pampas plumes was thrown across State street. The decoration of buildings was supplemented by placing potted palms and shrubbery along the driveway every few feet for over a mile, and on both sides large spreading fan and date palms could be seen, which tended to make the business street seem more like a flower garden than anything else.

Another striking feature was a fish-net drape trimmed with hundreds of Duchess de Brabant roses against a background of maidenhair fern. This was draped artistically across the street.

The spectacular features of the festival embodied many new features. On Thursday the streets were thronged with people to view the grand procession. Goddess Flora, enshrined in a mass of roses, appeared at the foot of State street surrounded by her suite of fifty children dressed in white and wreathed in flowers. They proceeded to the grand stand, followed by the Queen of the Flowers in a costume rich with floral trimmings, on a float of La France roses, with a canopy of the same. The latter float was the most artistic of them all and received the first prize. It represented the Queen of Roses (Miss Lunt) springing from the heart of a gigantic white rose, with a spider-web canopy covered with roses shielding her head from the caresses of the wind. The Queen was driving a team of large white butterflies, on the neck of the largest one Cupid being seated. The clouds on which the design rested were made entirely of Golden Gate roses and large white buds.

A. M. Ruise's float was a gigantic mortar and pestle on a green platform. The mortar and pestle and a large chair were made of marguerites, and from them a little boy threw bouquets with bottles of perfume tied to them to the ground.

Charles R. Thompson, F. Engley and D. O. Bannerman formed a merry hunting party on a large float. The tent, made of pepper tree leaves, ferns and flowers, contained the spoils of the chase, and over a real fire one of the party was roasting food. Hunting dogs, Winchester rifles and sporting paraphernalia lay scattered about.

The Fire Department had a large float with a marguerite-covered hosecart on it drawn by a number of small boys. The float was handsomely decorated and drawn by six fine horses.

A merry coachload of soldiers from the United States steamship Monterey came next in the procession, and they vied with each other in firing floral salutes to the fair spectators.

Mrs. R. J. Hall and children were the occupants of a carriage trimmed with huge branches of white carnations and smilax. The wheels, running gear and harness were trimmed in carnations, and the driver wore a Louis XIV costume of green and white.

In a carriage resembling a nautilus shell sat four young ladies with yellow Princess gowns and parasols of yellow. The shell was covered with the delicate yellow fressia and drawn by two handsome blacks, driven by Miss Miriam More. It was one of the most stunning turnouts in the pro-

cession, and was entered by Mr. Wheeler of the Arlington.

The prize-winner wagonette was Miss MacLean's, who drove spirited white horses, assisted by four others in lavender costumes, mounted on white horses, the collars of which were covered with wild brocade. The wagonette was covered with pink Duchesse roses, and the ladies wore handsome white gowns. The arrangement of the roses was exquisite. Whip, harness and reins were ribbon-covered and one wagon was full of floral ammunition.

An old-fashioned '49 plains wagon, the round top covered with marguerites and the wheels and running gear with wisteria, contained members of the Santa Barbara Club and a Spanish orchestra, which played soft airs.

A low carriage drawn by two handsome horses was completely covered with Beauty of Glazenwood roses and red roses shading into golden, and was one of the gorgeous turnouts of the day.

In a phaeton covered with white Eliza Savage and pink Duchesse roses sat Miss Jennie Buell and Miss Archer. The wheels were outlined in roses and on the hubs were large crescents of pink buds. The girls wore stylish gowns and well deserved the prize they were given.

Caroline Custer roses completely covered the buggy which contained Mr. Sutherland and Miss Arata, and two blooded horses added elegance to the turnout. The roses were arranged so as to show their natural beauty and were greatly admired.

The marguerite phaeton was Miss Nickerson's of Montecito and was pretty. The wheels were gigantic marguerites and the phaeton was covered with the same flower. The wild mustard phaeton was also beautiful.

These were but a few of the scores of decorated turnouts.

THE PAVILION DISPLAYS.

The indoor features of the festival were quite as striking as the open-air events and creations. The pavilion is in the shape of a Maltese cross, the four wings being with the four points of the compass. The interior decoration is extremely beautiful. The four large columns and the arches which support the roof are covered with lace-like gray Spanish moss, and long streamers of it hang from the roof. The interior is thatched with palms. The feathery sprays of bamboo and long joints of cane are everywhere. Red blossoms of the bottle brush are bunched on corners and projections. Orange trees in bloom, lemon trees with bud, blossom, green and ripe fruit and palms of every conceivable variety are used to heighten the effect. At night thousands of electric lamps strung overhead, like illuminated spider webs, and the soft music of a Spanish orchestra add to the effect of the billows of bloom.

The south wing and southeast side of the pavilion are devoted to citrus and deciduous fruits.

Parallel with the citrus exhibit run two tables consisting of a splendid exhibit of acclimated fruits, trees and flowering plants, collected and raised by Mrs. Childs. A few of the most interesting trees producing edible fruits are the Sapodilla plum, which tastes like a pear having a granulated pulp; the candle-nut tree, the oily nuts of which are strung on splinters and used as a substitute for candles by the Kanakas and Ceylonese; the Otaheite gooseberry, the fruit of which is a clear waxen white, growing in currant-like clusters and having an acid taste; the Mammee Sapota, or marmalade tree; the Trinidad Ceriman, the fruit of which looks like a pine cone, but has a most delicious flavor; the Orinoco banana, a beautiful fruit and foliage plant; the so-called tropical almond, with its oily, edible seeds inclosed in huge almond like husks; four varieties of Charimolias, one each from Peru, New Mexico, Florida and the West Indies. Besides these fruit-bearing plants, Mrs. Childs has a large collection of rare flowering plants, among which are the New Zealand lily tree, with large umbrageous leaves, the Casimiroa Edulis, the golden arbor vitae and the Queensland umbrella tree.

On two tables next to Mrs. Childs' exhibit is the collection shown by the Southern California Acclimatizing Association, the managers of which are C. F. Eaton, one of the flower festival directors, and Dr. F. Francheschi, a botanist of note. They have introduced a number of new plants, and exhibit 100 varieties of trees and shrubs, imported and acclimated—22 of palms, 40 of tropical food-bearing trees and 30 of climbing vines.

But the chief beauty of the Pavilion show are the flowers over in the east wing—the wild flowers, "dainty ferns and dewy mosses, flowers and leaves." Miss Jennings has classified and arranged the native flora of California and the exhibit is pleasing and entertaining. The delicate blue of the lupine blends with the gold of the California poppy. The flaunting Matilija poppy stands side by side with shrinking Baby Blue Eyes. The Ceanothus is growing by the blue brocade. Dainty maidenhair ferns and tiny golden and silver backs are in their native mode; brake ferns which rival those of Australia, and wild foliage of all colors are shown.

Farther down the side is a long table on which are some seventy varieties of roses, all named, exhibited by Mrs. Neal of El Montecito. Velvety pansies and sweet-scented carnations and pinks crown the table.

In the center of the pavilion, underneath the dome, is a bubbling fountain, in the basin of which lazily floats the white bud of the pond lily, while growing from amidst the rushes and cattails are the stately stalks of the Egyptian papyrus. Around this fountain is a splendid collection of ferns and palms, collected by the scientist, E. L. G. Yates. The tropical bird's-nest fern lies side by side with the frail maidenhair and the curious chamædora. A New Zealand fern that is supporting the lives of hundreds of tiny ferns where bulblets are firmly fastened on its frontis. The staghorn fern reminds one of a pair of antlers. The Japanese ostrich fern, great agaves from Africa, rare palms from all over the world and hundreds of queer-looking shrubs with unpronounceable names are clustered around this fountain. The native ferns are not neglected. Santa Cruz island sends two specimens from its rocky canyons. Dr. Gould of Montecito sends the curious and rare dwarf tree, *cedrus dedora*, from the Himalayan mountains.

The north wing is called Memorial Alcove. Here are

pictures of former members of the Horticultural Society, surrounded by the fragrant flowers they loved so well. Professor H. E. Ford, the Mission artist, Col. W. W. Hollister, Dr. Dimmick, E. Elts, and others, look down from the walls of the alcove, which is beautifully decorated with wild and cultivated flowers and ferns.

Roses on Peach Stock.

TO THE EDITOR:—I have read that roses are budded on peach stock in some of the southern counties. Now, I will be greatly obliged if some of the readers of your valuable paper would tell us how it is done, and with what success. I understand budding and think splendid results could be obtained, if it is a success.—MRS. M. A. STILES, Easton, Cal.

[We have not heard of the practice of out-budding to which our correspondent refers. We have no faith in its success, counting success to be permanent growth. Many connections can be made between distant members of the *rosaceæ*, but their history is one of early failure, though temporary and apparent success is sometimes gained. We always reply to such inquiries by advising the inquirer to try it. Our correspondent knows how to bud and should indulge in an experiment, the results of which can be reported for the general benefit.—ED.]

SHEEP AND WOOL.

A Friend of the Merinos.

The sheep-raisers are doubtless losing interest in their pursuit, owing to the low prices for wool and mutton which now prevail. This is wrong, because other agricultural pursuits are depressed and the sheep will probably recover as soon as any other. Dr. Galen Wilson of New York says in the *Farmers' Guide* in behalf of the Merino: Most farmers past middle life can recollect when the prevailing sheep were of the Merino blood; and although generally called "natives," they were descendants of that breed. It has not been many years, comparatively, since the English sheep were introduced. There are numerous varieties of the latter, distinguished as breeds, and each has its earnest advocates. They have been imported freely, and have spread all over the Eastern, Northern and Western States as stock sheep. Having their money invested, these sheep men must get it back again, and more with it. To believe all that each says of his favorite breed, one would think the others were nearly worthless; and to believe what all say, the inevitable conclusion would be that none of them possess any remarkable merits. During all this sharp competition and consequent confusion, the "old reliable" general purpose sheep—the Merino—has been neglected, except by a comparatively few breeders who knew the value of what they had in hand, and realizing that those who had wandered away after strange gods would sometime return to their first love.

After thorough trial of the English sheep it is found that they do not Americanize sufficiently to meet the conditions of sheep husbandry generally prevailing in this country. It must be borne in mind that the Spanish sheep had to "rough it" over two thousand years. In springs they were driven an average of 400 miles into rough, rocky mountains for summer grazing and in autumns were returned to the sunny plains for wintering. The Spaniards have no ancient sheep literature to which we can turn for proof, but the manner in which they conducted their sheep industry is sufficient evidence that the animals were entirely without shelter from inclement weather, and hence their proverbial hardiness. As wise nature usually comes to the rescue and transforms animals to suit their changed conditions and environments, so that in Spanish hands transformed the thin-coated sheep of bible times into the thick-coated Merinos. Fowls are nicely provided with an olive reservoir from which they oil their coats to shed rain, but the entire body of the Merino sheep exudes oil which permeates the whole fleece. This thick-oiled fleece is a protection against almost the severest storms. Not so with the English sheep. Their coats are comparatively thin and oilless. At home they are carefully housed from storms; hence thick-oiled coats are unnecessary. Great care is bestowed upon their feed. A variety is provided. Several kinds of succulent feed are always at hand and various grains where it is thought there is need for them.

General conditions in this country require sheep to shift for themselves in pastures except in winter time, when hay and straw and perhaps a little grain in spring will suffice. It is unnecessary to ask the question which is the more suitable breed for American conditions, the Spanish or English. I have it from an English shepherd who is now and has been for a long time in North Carolina, that the coarse-wool English sheep will not flourish even in that equable climate unless housed from storms. The wool parts along the back, rains soak down near the vital parts, the animals begin to cough and finally succumb to disease. The English middle wools do better there, and the Merinos better still. When I commenced to write about sheep a dozen years ago, I was free to speak as on this present line. Many uncompromising advocates of English sheep severely took me to task in the public press. It was gratifying the other day to read in an essay of the most conspicuous and arbitrary of my critics, the following significant language: "English sheep are best for this country, provided they have English feed and care." Exactly; I am glad of this confession, because it concedes most of my contention. But as they cannot get this feed and care as a rule, Merinos must be the choice.

Another false notion is, that the mutton of English sheep is superior to Merino mutton. It has been shown time and again that feed, not breed, gives quality to mutton. One of the ablest sheep-feeders in the country, and who feeds all breeds and grades, said recently in an address: "The quality of mutton has nothing whatever to do with the kind of hide it is wrapped in." Bring up a Merino lamb and an

English lamb together to maturity, feeding them alike, and who would be foolish enough to wager that he could tell "one from t' other" by tasting the mutton? What, then, is the difference? Merinos are often stigmatized as "little runts." On high-priced land small sheep may not be an objection after all. It takes the same amount of feed to maintain a 160-pound English sheep that it does two 80-pound Merinos. The former will shear seven pounds of wool and the two latter 16 pounds. Now, which is ahead? Still, where feed costs little, as on cheap lands or on a range, good-sized sheep are to be preferred to small ones. There are strains of pure-blood Merino sheep which are as large as the middle-wool English sheep, and they shear twice as much. Their carcasses bring just as much for mutton. A ten-year-old boy would choose wisely between them.

"Pedigree" is the great boast of breeders and dealers in English sheep; but not all English-furnished pedigrees are reliable. When performance accompanies pedigree the latter is of great advantage. How, then, should the Merinos be esteemed whose co-existent performance and pedigree trace back over two thousand years? Where city markets for lamb and mutton are readily accessible, probably it may be advisable to employ English sheep, but the English care and feed must be bestowed for best success. On the Western plains, among the mountains, unoccupied lands of the South and farms generally in a back section of country, there is no breed so suitable as the reliable Merino. Even in growing early lambs, half Merino is better than pure blood of any kind. Where cheap lands prevail and feed is cheap, large Merinos, with most wool to weight of carcass, are advisable. It is a strange but well established fact that size of carcass and weight of wool to carcass cannot be increased without breeding Merino ewes to larger, wrinkly Merino rams. If a wrinkly ram is bred upon any plain or smooth ewe, the progeny will grow less weight of wool to carcass than the sire.

SWINE YARD.

The Care of Brood Sows.

The modern hog shows evidences of serious neglect in a very important direction. The methods of selection of type and of feeding have been in the direction of extreme fattening tendencies and early maturity to the neglect of muscular development and of vitality. This, in a large measure, explains the prevalence of disease and death which have devastated the herds of swine in all the corn States of the Union. A Missouri correspondent of *Colman's Rural World* says:

The question of the care of the brood sow before and after farrowing is one of much consequence to the breeder of thoroughbred swine. On it depends his success as a breeder and the quality and finish of the pigs. If we expect to raise prize winners we must feed it into them through their dams. First, then, as to the care of the sow before farrowing. If she is somewhat thin in flesh, so much the better, as she is much more sure to be in pig the first service. A week or two before mating I would begin feeding some new corn. After mating I would feed yearling sows three to four ears twice a day; if older sows, two ears twice a day. That with a run on grass will make them improve in flesh. I would keep yearling sows separate from the older ones; they need more feed to develop their frames. The larger the better, if they have finish with it. About two months after mating I make a change of feed. I find ship stuff, bran and oilcake meal a fine feed, but they are both scarce and high this year, so I substituted oats, wheat and corn in proportion of three parts wheat and one part corn ground fine and made into slop. I have fed them one good feed a day. That with what they get after the milch cows keeps them in good condition, and those of them that have farrowed have large, uniform, vigorous pigs.

For gilts I take a different course. As soon as they are well used to green corn, I feed plenty of it and I know of nothing better to make growth of bone. As the corn becomes ripe, I feed less of it and feed slops to avoid too much fat. Feed them enough to keep up a uniform growth and give it regularly, and keep it up until time for them to farrow, giving them the freedom of the fields every day; and if they will not take exercise, take off enough of the feed to make them hunt for something to eat. When farrowing time comes, have the houses close, warm and dry, and above all have the pens in a dry place. If there is a rocky point on the farm, put the pens there if possible, no matter if the rains do wash the manure off to the creek; it leaves the pens pure and healthy and that is of much more value. A few days before her time, put the sow in the pen you intend her to use; have a guard in the house on the side where the ground is the lowest, or better still, have a floor of plank with a slope of about four inches, made close to the ground to exclude air. Have the guard placed along the lowest side eight to ten inches from the floor and the sow will lie down to the guard to farrow unless you bed her heavy. A sow will farrow with her feet down hill; keep her quiet and allow no one near but the person who is her regular attendant, as a stranger will make her cross and irritable. Give her nothing but water the first day; watch her closely, as a sow sometimes has a dead pig that is swollen so that she cannot pass it. Watch the pigs closely the second day. If they pile up and sleep contentedly, they get enough milk, and it is best to go very slowly on feed. But if they are restless and keep tugging at the sow, and their skin looks wrinkled, they are not getting enough milk and the sow should be fed enough to make her milk.

It sometimes happens that one or two pigs in a litter are troubled with scours while the other pigs are all right. To cut down the sow's feed is to starve the thrifty pigs. In such cases I give the sow one large tablespoonful of ginger in her feed once or twice a day as the case may require. Two or three doses are generally sufficient to effect a cure.

If the whole litter is affected, it is best to feed the sow less and feed the ginger, as it will set the pigs right in a short time. Some time ago I read a statement from a man inquiring what was the matter with his pigs. He stated that he had 12 sows with young pigs; he had treated those sows all alike. The pigs from six of those sows were nice and thrifty; those from the other half had died. I do not understand why that man could not discover the cause of his loss. One-half of those sows undoubtedly were heavy milkers; to feed them heavily was to increase the flow of milk to more than the pigs could take, and scours and death was the result; the other sows being light milkers, they needed heavy feed to furnish enough milk. I frequently read statements that a brood sow should be on full feed by the time the pigs are two weeks old. My own experience is that all depends on the sow as a milker. I once put a sow on full feed five days after farrowing, and no harm resulted to either sow or pigs, but she would not milk without it. I would turn the sow on grass every day, if possible, after she shows a disposition to leave her bed, but I prefer to keep each sow to herself at night until the pigs are three weeks old. It is some trouble, but it prevents the larger pigs robbing the smaller ones and they make a more uniform growth.

POULTRY YARD.

Food for Young Chicks.

It is getting rather late for young chicks, and yet there are probably many who do not set hens as early as they should, and the following hints, which "A Farmer's Daughter" gives the *Country Gentleman* may be of service:

I would advise that only cooked food be offered to chicks until they are a month old. Do not give the little fellows anything at all until they are 24 hours old, and do not tempt them to eat much until 48 hours from the time they are hatched; let them remain quietly nestled among their mother's warm feathers, thus gaining strength and vigorous vitality.

For the first week I feed stale bread—equal parts of egg bread or cornmeal-batter bread and bread made of white flour or of the whole wheat—softened by pouring over it hot sweet milk. Do not mix together much, as it then becomes a sticky, pasty mass, that even a chick does not fancy. Simply break the bread in a pan, pour the hot milk over it, and let it stand on the stove and simmer along until it becomes rather dry. Sloppy, watery messes bring on looseness of bowels, disorder the whole system, and frequently cause death.

After a few days, sprinkle the food lightly with a pinch of red pepper; it stimulates and helps to keep the chicks warm and lively. If the little fellows should be at all inclined to dysentery, substitute black pepper, which is an excellent remedy.

Some meat is also necessary if you want the chicks to grow off thrifty and strong from the start, and I prefer to give this separately—say one meal a day of good, well-boiled meat, cut fine enough for the chicks to swallow. Do not let the old hens get much meat, else it will start them to laying, and they will wean their chicks long before you think they ought to.

After a week or so, garden vegetables may be given, such as onions, either raw or cooked, boiled cabbage, turnips, potatoes, etc. Take care, though, that nothing sour or fermented is offered. It is a great deal easier to keep chicks healthy than it is to cure them after they get sick.

When the chicks are two weeks old, if it is more convenient, boiled cracked corn seasoned with dripping may be substituted for stale bread, and then it is a good plan to let each alternate meal consist of whole sound wheat boiled to bursting. If this proportion be maintained—half corn and half wheat—until the chicks reach maturity, far better results will be obtained than if either one is fed in preponderance. The young chicks will then grow off strong and healthy, bidding defiance to gapes and all other infantile diseases. At the age of six weeks I have had cockerels large enough for broilers, fat and nice, one chick furnishing sufficient meat for our table of six persons.

After one month, raw small grain may be given to the amount of one-third their daily rations, but it is better to offer some cooked food at the same time. My experience teaches that it is dangerous to allow chicks to pack their crops with raw grain, raw cornmeal, or uncooked food of any kind. Such foods swell and ferment in their crops, causing, first, indigestion, then bowel troubles, which frequently end fatally. Feed every two hours at first, and only so much as the chicks will eat up clean. For drink, give sweet skim-milk or water, and that only once a day when the chicks are young; afterward keep drink within reach all the time. Crumbled eggshells and sand will answer as grit for the little fellows, adding later on sharp gravel or pounded broken crockery.

See that their quarters are sufficiently warm, dry, clean and comfortable. Chicks cannot be expected to thrive with cold, wet feet any more than could so many little children. And while exercise is essential to their welfare, remember a run of a few yards seems as big to the tiny chick as a large door-yard to the child just beginning to run alone. Many a pretty brood is thinned unmercifully by allowing the mother hen free range too early. Do not let them out at all till the chicks are three or four days old, then for the first time only for an airing of an hour or two, the time for staying out being lengthened as the chicks grow older and stronger.

It is a good plan to dust the hen, and her nest as well, with insect powder just before she hatches, and when the chicks are a few days old, dust her again very thoroughly, and her brood also.

After the weather becomes warmer and more settled, a few drops of sweet oil or a tiny bit of pure lard rubbed on

the head and around the neck of each chick will free its body of parasites, the mother hen being more generously anointed at the same time. Do not let any one beguile you into putting kerosene, sulphur or anything else into the oil or lard. Grease alone will destroy insects of all kinds, and the skin of the chick is so tender that there is danger of killing the chick as well. Indeed, one must be very sparing even of pure grease. I have known many a young chick killed by too much of it. Insect powder is safer, unless the weather is warm and settled.

Chicks on a wide range in summer do not need meat. Grasshoppers, bugs and worms take the place of meat; but in early spring, or in cool, inclement weather at any time, it pays to feed them liberally but judiciously of rich though wholesome diet. If the parent stock is strong and vigorous, young chicks cared for in this way cannot fail to grow up thrifty and strong, and our work of attending to them will be pleasant as well as profitable.

Pointers for the New Poultry House.

To those about to erect new poultry houses, a correspondent of an Eastern exchange offers the following suggestions, which will be of interest and perhaps of profit, though our climatic conditions may enable one to lighten the construction somewhat:

Plan your houses for small flocks—50 is generally considered about right—and put the several houses from one to three hundred yards distant from each other. It is never well to keep fowls in large flocks; lessened egg production will be sure to ensue, while danger from disease is greatly increased.

Much harm and discouragement, I believe, come from items afloat in the poultry world as to the amount of floor space which should be allotted to each hen. I shall build two more houses this fall. They will be 10x24 feet, with shed roof, eight feet high in front and four in rear, and I expect them to house comfortably 50 Rock hens, and if necessary or convenient I shall not hesitate to put into them 75, at least, in summer. I am aware that perhaps a majority of writers will say I am putting three or four times too many hens in such a building. Those who write in this strain, however, are largely such as run a town-lot business. Their hens are never allowed other range than the room and narrow yard attached. When such a course must be pursued, they are right, but they fail to consider that the farmers to whom their advice is given are not accustomed to confine their poultry in such narrow limits. With a poultry range of from one to two hundred acres, all the use we have for a house is to afford roosting and nesting room, and shelter and warmth in winter. Hence, less room suffices. In a house of the dimensions given, one sash, hot-bed size (3x6), will afford ample light. Place it horizontally about two feet from the floor.

One of the chief points to be observed in the building is to have no more in it than is absolutely necessary, and make that light and movable. No matter how carefully you clean and fumigate, whitewash and disinfect, you will still have actual lice to deal with. The less you have in the house and the easier it is handled, the more successful are your battles likely to be. If you use partitions (and be sure they are positively needed before you put them in), use wire netting with a bottom board at least 16 inches high—this latter for a peacemaker. In small buildings you will have no need for a hallway. The advantage usually urged for this is that it enables the keeper to attend to the flock largely without disturbing it. If you cannot go among your hens without frightening them you need to get on more intimate terms with them at once, or turn the matter over to your wife. As for the hallway, the partitions forming it afford just so much more surface to whitewash and watch for lice.

Roosts should be 2x4. Better plane them so that the smooth surface may discomfit the lice as far as possible. Have them fastened by dropping into slots. These should be on a frame which has legs in front and hinges behind, so that roosts may be swung up out of reach of hens in daytime. Make the nests single and loose. Put no bottoms in them. They are easier cleaned so.

I do not consider it profitable to weatherboard inside and out, pack with sawdust or put in heaters. Matched boards, with perhaps a single ply of building paper, will be warm enough for any of the ordinary breeds. Neither will ventilators be necessary. If you think the supply of air is too limited, make the sash sliding. Do not have it to open so that any draught will strike the roosts, however, or you will have a case of croup. Have no opening that will let in rats, cats and the ilk, when the house is shut up for the night.

Crack in the Frog.

TO THE EDITOR:—Six months ago or so my horse began to limp a little in the foreleg. The cause could not be found till within about two months. Then a very narrow crack about an inch deep was discovered in the frog. It has not suppurated nor given off any odor. I have treated it with an ointment made of wood tar, coal oil, blue-stone and lard, but without effect. The horse does not show lameness in standing nor commonly in walking. The crack is too narrow to syringe out. The ointment has been pricked in with a thin stick. What treatment would you advise?—W. C., *Mulfontes*.

ANSWER BY DR. CREELY.

Poultice the foot at night with flaxseed; next morning soak foot in warm water for 15 minutes; then have your horseshoer pare frog down as low as possible, taking good care to cut off all ragged pieces of frog around the sore; then take absorbent cotton and stuff it into the cut, filling it up; then pull it out immediately; repeat until cut is entirely clean; then saturate cotton with the following wash and stuff into the cut so it won't come out, and leave it; dress once daily; only poultice once and no more; shoe with a low heel and toe; don't shoe with a bar shoe; Goulard's solution of lead, 4 ounces; tincture of opium, 2 ounces; water, 4 ounces. DR. E. J. CREELY, D. V. S.

General News Notes.

FOUR THOUSAND Chinamen have registered in Boston under the Geary act.

GOLD to the amount of \$7,000,000 went to Europe from New York during the week.

NEARLY 100,000,000 bushels of available wheat in the United States and Canada is reported by Bradstreets.

THE San Francisco Democracy have denounced Hill and Geary and have endorsed the Wilson tariff bill.

DURING the week over 100,000 coal miners struck in Ohio and Pennsylvania. So far both sides are unyielding.

TRAINS on the Fort Wayne road now make the distance between New York and Chicago in eighteen hours.

THE largest gold coin in circulation is the "loof" of Anam, which weighs as much as 325 United States dollars.

CLAUDIA HERRERA, aged 120 years, died on Telegraph Hill in this city last Saturday. Her age was well authenticated.

THE property of the Nicaraguan Canal Company at Greytown has been seized by the Nicaraguan Government and sold for \$75,000.

A NEW aluminum phosphate mineral, having some of the qualities of turquoise, has been discovered in the Camp Floyd district, Utah.

DURING the recent fiesta at San Diego joy was unrestrained, cowboys riding into saloons and assuaging great thirst without dismounting.

THE Board of Prison Directors have authorized Warden Hale of San Quentin to sell 3,000,000 jute bags, which he has on hand, for 5½ cents each.

A MAXIMUM speed indicator for electric railways has been invented. An alarm bell in this device rings whenever the velocity for which it is set is attained.

AN execution for murder and the conviction of an assassin for murder in the first degree convinced San Franciscans on the 20th that hanging isn't "played out."

AT Yaquina Bay, Oregon, collection district, last year, it cost at the rate of \$4240 to collect \$1.00. During the year 25 cents was collected at a cost to the Government of \$1060.

GEN. WEAVER, of Iowa, has been nominated for Congress by the Kansas Populists, but the inducements are not sufficient, and the General refuses to move to the Sunflower State.

It is calculated that the stoppage of silver mining reduced this country's annual supply of gold by one-third, as about 33 per cent of the yearly yield of gold is taken out of silver mines.

THE House Committee on Coinage, Weights and Measures has side-tracked the Meyers' compromise silver bill and decided to report favorably Bland's bill for the free coinage of silver.

THE United States Supreme Court has decided that lager beer is not a "spirituous liquor" within the meaning of the statute prohibiting the introduction of spirituous liquor or wine into the Indian Territory.

"THERE are no present indications of any attempt to foreclose the Government's mortgage on the Pacific railroads," says Senator Brice, "but much depends upon what the security-holders behind the Government agree to do."

THE Southern Pacific Company operates a total of 7867.14 miles, of which 4470 are proprietary lines, 2128 leased lines and the balance affiliated lines. The gross transportation earnings for 1893 were \$53,946,667, and the operating expenses \$34,692,402.

THE reported discovery of a wonderful deserted city in a remote section of the Sierra Madre mountains, in Durango, has been verified by Maurice Lentow and a party of explorers. They found a secret entrance to the city and made an exhaustive exploration. They returned laden with curiosities from the abandoned residences and temples. The population of the city could not have been less than 25,000.

THE Indiana Republican State Convention last Wednesday adopted the following in its platform: "We believe in a currency composed of gold, silver and paper, readily convertible at a fixed standard of value, and entirely under the national control, and we favor the imposition of increased tariff duties upon imports from all countries which oppose the coinage of silver upon a basis to be determined by an international congress for such a purpose."

THE Postoffice Department announces that no more dropping of letters into the mail cars will be allowed. Hereafter mail will not be taken on the railroad mail cars unless it first passes through the postoffice. The order was made because so many business men near railway stations mailed their letters on the train and it made a large amount of extra work for the mail clerks, time being used in stamping letters that was needed in sorting out mail between stations.

In an article on prospective railway building the *Railway Age* states that within the last 20 years over 107,500 miles have been added to the railway system of the United States, giving an average of 5379 miles a year. Within 30 years the railway system of this country has grown from 33,000 miles to 177,850 miles, and now aggregates nearly half the total mileage of the world. A vast mileage is yet to be built, and in increase of activity in this respect is already on hand. A list of 411 lines is given, aggregating a proposed length of over 22,500 miles and representing every one of the 48 States and Territories, the speedy construction of which appears to be demanded.

THE "stories of American manufacturers," which the Census Bureau is issuing in bulletins, is brought down in the latest number to manufactures and mechanical industries, each of which reported a product valued at \$30,000,000 or more during the year ending May 31, 1890. There are 287,501 establishments reported for the 67 industries presented in this bulletin, or 80.90 per cent of the total number of establishments in the United States. These establishments show \$5,249,139,842 of capital invested, or 80.45 per cent of the total capital for all classes of industry. They also report 3,370,557 employees, receiving \$1,811,186,882 wages, or 79.17 per cent of the employees and 79.34 per cent of the wages for all industries. The cost of materials used was \$4,373,402,066, or 82.84 per cent of the total materials of all industries. The value of product was \$7,618,836,200, which was 81.31 per cent of the total product of manufactures in 1890.

PATRONS OF HUSBANDRY.

Random Thoughts.

By A. P. ROACHE, W. M. S. G. of California.

With commonweal and common woe
The farmer knows not where to go.

Danville, Tracy, Stockton, Waterloo, Petaluma and Sacramento! And still the good work goes on! Danville patrons turned out in goodly numbers, and, as they own the grounds and hall, a fine picnic and literary programme was enjoyed by all. Bro. Chas. Wood and Worthy Master Hall took us into custody in true granger style, and to the thoughtful consideration of Sister Ida Hall is the writer indebted for a magnificent view of Mount Diablo in all its beauty.

The patrons of Tracy also own their hall and grounds; and, while their meeting was not large, it was a representative one, and their energetic young master is sure to build up the grange and secure therefrom many advantages for the community which heretofore have not been fully utilized.

Stockton? Well, what is the use. Of course they had a good, big meeting, and what with Bro. and Sister Noyes—No, I'll not say any more; you know the rest.

Past Master Overhiser took us up to Waterloo in the evening, where we met a large assemblage, composed mainly of young people, and their spirited and really excellent programme bore testimony to their zeal and energy in the cause of the grange. Bro. Overhiser returned us to Stockton, nine miles distant, in a little over 40 minutes, with a single horse and four persons in the carriage. Bro. Flint, what do you think of that?

Our next objective point was Petaluma, which we reached ahead of time and thus escaped the watchful eyes of Bros. Wall and Hopkins, who were prepared to both greet and treat us. Farmers here, as in all other sections visited, are jubilant over the rain, and they celebrated a victory which seemed almost a forlorn hope by turning out in large numbers at the grange meeting. Bro. Messer gave them an address which was not only logical and profound, but which trenchanted sharply on the evils of the times and the means by which they can be overcome. After a most enjoyable time, we spent the evening with Bro. and Sister Coulter and their exceedingly interesting family, Bro. and Sister Davis also being present; and after a short night's rest and a very early peep at the City of Roses, found ourselves face to face with Bro. Flint in the Capital City.

We were soon among the patrons of Sacramento and vicinity; and after a good meeting and a neat, tasty feast, we repaired to the homes of Bros. Flint and Jackman, who entertained royally. To-morrow we start for Florin.

Owing to the fact that a detachment of the Industrial Army, 1100 strong, will arrive in Sacramento this evening, there is considerable uneasiness expressed by the inhabitants, who feel that they have long since done their full share in the entertainment act, and that their charity has about reached its limit.

The welcome rain in generous shower
Has brightened every plant and flower,
And filled with joy the anxious mind
Of husbandmen and matrons kind.

The meeting at the residence of Bro. and Sister Coulter the other evening was quite a coincidence, and does not often happen west of the Rockies. There were present the overseer and lecturer of the National Grange, two voting members of the National Grange, three of its honorary members and one of its Committee on Woman's Work; two masters and two past masters of State Granges, and five of the brightest and wittiest native daughters in the State.

National Lecturer at Stockton.

Stockton, not to be outdone by any Eastern flurry, got up a cold blow of rain for Worthy National Lecturer Alpha Messer. When the National Grange met here the first downpour of the season made him clap his hat down tight to keep his head dry, and this one laid the dust for his nostrils and lodged the flying blossoms on his broad chest, just to show him that this Minneapolis of the Pacific has lively times above once in a while as well as always below.

Stockton Grange arranged for the visit of the Worthy National Lecturer and Worthy State Master Roache, so that the sisters would be free from table cares and could give undivided attention to this treat by having Worthy Master Noyes and wife, and Worthy Overseer Beecher and wife accompany them to points of interest, then to din-

ner at the Yosemite hotel, and afterward to the hall, where a large audience waited.

One of the places visited was to the monument of Ruel Colt Gridley, who raised \$275,000 for the sanitary commission by selling and reselling his 50-pound sack of flour, now encased in his patched buckskin sack and kept sacred by our G. A. R. Stockton Grange began the fund and pushed it through, to erect in marble the manly figure with the immortal sack of flour, which shall inspire coming youth with devotion to country. Col. Sperry showed them through the Sperry mill, the first large mill built here and famed for flour and germea, also for its China trade which is increasing almost beyond supply, now that wheat is cheaper than rice. With the big Union mill, just bought, it will turn out 4000 barrels a day. Samples of our plump wheat were taken East by the Hon. National Lecturer, whom the head miller voted a level-headed Englishman, which was quickly resented, because we believe in home-made men as well as home manufactures.

The turnout was exchanged for the electric cars, which soon set them down at Jackson's baths and gas wells. The water is a specific for many diseases, notably rheumatism, and runs at 3000 gallons a minute. The place is finely fitted up in every way.

In the tastefully decorated hall the members from every grange in the county but one paid the closest attention to both speakers, Worthy State Master Roache taking them by surprise with his happy manner and ease of expression. The good, hard sense and forcible style of the Hon. Alpha Messer are well known, and the increase in number and prosperity of Eastern granges is a stirring incentive for us to more actively push the work for the Order that has done so much to better the condition of the farmer and make him respected.

The co-operative manner in which many Eastern granges buy and sell greatly interested us. We felt that we respected the cause, the man and ourselves more for having heard him, and reluctantly bade him farewell.

Our music was fine and every one was glad to have been there to hear such strong and helpful words for the grange. A. A.

Stockton, April 30, 1894.

From Mr. Ohleyer.

TO THE EDITOR:—The most absorbing question of the day is the movements of the so-called Industrial Army along the roads leading toward the seat of government. It is stated that these regiments and companies of unemployed are not such from choice, and differ in this respect from the well-known tramp that has been walking upon our highways and byways for a quarter of a century, content to be idle and subsist upon the labor of others. It is pleasing to note that the subject is receiving the attention of teachers, thinkers and writers of the day, and, let us hope, will continue until a solution of the problem will be worked out that shall be just to all and do violence to none. In this connection I want to commend the views of the worthy lecturer of the California State Grange as expressed in the columns of the RURAL in the last two issues. I can and do endorse every word of Mr. Goodenough, and the sentiment is so well expressed in his paper that there is nothing to add, except, possibly, to emphasize every position assumed. I have just laid the paper down, and feel that I can aid the cause by calling to the subject the attention of those who may have overlooked the articles.

The Crop Conditions.—Compared to other dry seasons, of which northern California has not been wholly exempt, although always in a modified form compared to those of the south, the records here show a rainfall to date of a fraction over thirteen inches. The earth was saturated through to the lower moisture, and the rainfall it is claimed would have been ample for crop purposes but for the unusual amount of drying north winds.

In 1864 less than half the amount of this year's rainfall was precipitated and the north winds blew for months, yet the crop was not an entire failure and summer-fallowed land produced from 25 to 40 bushels of wheat and barley to the acre. In 1871 but little more rain fell than in 1864 and the north winds blew almost incessantly previous to May, and yet on well-cultivated land (summer fallowed) the crops were good. In 1873 it was again dry, some three or four inches less moisture having descended than this season, accompanied by hot north winds, yet the careful farmer had good crops of grain and got a big price for it. The season of 1877 was also dry, about

as the present, with the customary north winds; but the season was earlier and warmer, and the yield and quality of cereals on well-cultivated land has never been excelled. Lastly, the season of 1880 was dry and discouraging up to and including March and a portion of April; then for a period of thirty days showers fell, amounting in the aggregate to three or four inches; then again came a drouth and prolonged north winds, threatening in the minds of many the entire crop of the State.

The grain had grown to full size, but under the influence of the desiccating north winds it was turning to hay standing, and many farmers, despairing of the outcome, set their mowers to work to secure the hay before it could dry utterly and blow away. About this time the winds changed to the south and the ocean breezes sweeping over the parched plains and wheatfields recalled, as it seemed, the evaporated moisture to the grain and held it there until the biggest and best wheat and barley crop ever grown in the State was fully matured and successfully harvested.

It would seem, then, that a certain amount of north wind is not only permissible in the spring months, but it is desirable. One happens to remember that the Sacramento valley, for which this is written, is one of the most fertile spots on the globe and enjoys an incomparable climate for health and the production of the choicest fruits and cereals of the world, and, let us contend, by the aid of the drying winds rather than in spite of them. An eminent writer, whose name I disremember, thought the great valley would be sickly without the north winds, if not uninhabitable.

The open grange meeting for the Patrons of Husbandry of Sutter county, and the public generally, to be held in Yuba City, May 5th, is engaging much attention and a big assemblage will be present. All want to hear the farmer orator from Vermont. The meeting will convene in the forenoon, and the programme will be varied and interesting. In the evening a closed meeting will be held for a private reception to the distinguished guests. No gate charges will be made, hence the entertainment will be free to all. Refreshments will be of the picnic style, furnished by the participants.

GEORGE OHLEYER.

Yuba City, April 22, 1894.

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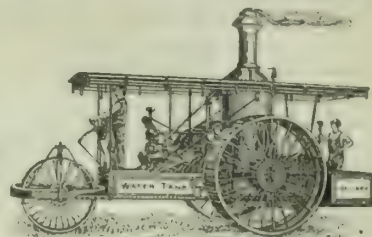
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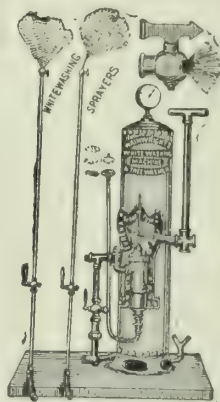
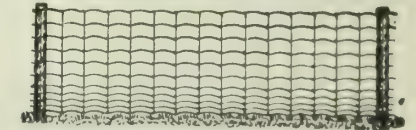
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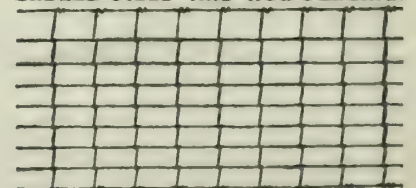
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AGRICULTURAL NOTES.

CALIFORNIA.

Butte.

Oroville Register: W. A. Rogers of Thermalito presented us lately with some specimens of the orange known as Hart's Tardiff. The great value of this orange is that it ripens late. The fruit is just getting ripe now, while the seedling and the navel have been ripe since last December. The Tardiff is of good size, excellent flavor, and is very hard and firm. Coming as it does after the other oranges have been gathered, it will prove a valuable addition to our orchards.

Oroville Register: We hope every dry-land farmer in the county will read this little item, given to us by T. H. Chivell, whose home is near Nelson. He owns 320 acres on the east side of the Spring Valley Company's canal, of which 45 acres are irrigated. He raises a crop of clover hay which averages him from two to three tons per acre. After the hay is off the ground he floods the land and plants a crop of corn. Last year he planted his corn on the 16th day of July, yet he had an excellent crop. He says he realizes more profit from the 45 acres of irrigated land than he does from the remaining 275 acres of his farm. He fattens his hogs and other stock from the hay and corn and thus sells them to advantage. He also adds that the 45 acres give more labor than the other 275 acres. The slickens are from one to three feet deep. He says this land holds moisture well, and better, if anything, than the adobe. He thinks the finest grain in the county is some owned by Senator Shippee, which is on the slickens land west of the canal.

An Oroville man, who has just made the rounds to Chico and Nord, thence back to Chico and back to Durham, Nelson, Biggs, Gridley, over to the Central House, and up the east side of the river to Oroville again, says he found the crops on the river above Nord pretty short, but in the Nelson, Durham, Biggs and Gridley sections the crops were excellent. Five miles above Chico, M. Guynn has, he thinks, the finest piece of wheat in the county. The best field of barley he saw is on the ranch of Mrs. Dora Riddle, near Biggs.

Fresno.

Reedley Exponent: The cutworms and sphynx moths are playing havoc with the vineyards west of here, through Traver and on this side. The vines were in comparatively good condition before these enemies began their deadly work, and a good remedy is the only thing that will help them now. The State Viticultural Commissioners give the following methods to rid vines of these pests: Cutworms may, if few in number, be found at night by the aid of a lantern, when they are preying upon the leaves of young shoots. Another method is to dig them out of their hiding places near the roots of the infested plant in the daytime, as they retreat with the appearance of daylight to just below the surface of the ground. If in sufficient number to warrant it, spray the vine with a solution of Paris green (which must be agitated continuously while using to prevent settling), one pound to 150 gallons of water. This will not harm the fruit or plant, even though the grapes have attained half the size of a pea. If it is feared that live stock may get to the foliage and thereby become poisoned, apply the same solution to cabbage leaves, which, if placed near the troubled vines, will attract the attention of cutworms and destroy them. Afterward, these cabbage leaves may be picked up and destroyed, or left to wither without danger. To apply the Paris-green solution, use any good spray pump, or even a syringe will answer for operations on a small scale.

Kern.

Bakersfield Californian: The dry season in the southern and coast-line counties is already playing havoc with the bee industry in those localities. They feel the effects of the dry season even more keenly than live stock, for without flowers or pollen they have to die, and that is just what they are doing. Per consequence, the bee interests in Kern county are looking up, for her bees are getting fat, living high and making lots of honey.

Kern County Echo: H. Lemke, deputy health officer, veterinary department, has handed in a report, covering the time from May 1, 1892, to the 1st of the present month. In it, it is stated that, in all, 58 head of horses have been found afflicted with glanders and killed. The cases of the disease were widely scattered and were discovered at the following named points: Poso 6; Lerdo 3; Rosedale 12; Tehachapi 1; Bakersfield 15; Mountain View 2; Pampa 5; Delano 4; White River 3; Kern Lake 2; Kern City 1; New River 2; Glennville 1; Weed Patch 1. Nearly all the glandered stock was brought to the county from other parts of the valley; but it having been done, it is probable that the malady has gained such a foothold here that it will require the utmost pains to eradicate it. It is the duty of every one who knows of a case of the disease to inform the proper officials in order that the horse may be condemned, and the law makes it a misdemeanor for any one possessing such knowledge not to give such information. It is only in this way that the progress of the distemper may be prevented. The matter is becoming more serious daily, for already during the present month over 20 cases have been found. The carcasses of the animals should be thoroughly cremated together with halters, mangers, harness, etc., that may bear the active poisons.

Bakersfield Californian: Five different varieties of rice are now being cultivated at the experimental gardens. Two of these sorts are lowland and the remainder upland variety. The seed for two of these kinds was brought from China and the remainder from the Carolinas. This experiment is a very interesting one to follow, as it has long been held by some men of wide experience that rice would be one of the most profitable crops possible in this valley. The young shoots of the rice plant are now about four inches high and appear to be of luxuriant growth.

Los Angeles.

Pomona letter: Horticultural Commissioner Scott came out from Los Angeles yesterday (Monday), and in company with Inspector Atkinson of Pomona took a round of investigation through

the orchards of the city and adjacent territory. The latter reports that they found the trees much cleaner and in better general condition than was the case at this time last year, and that upon the whole the status was, to say the least, creditable and gratifying. He further remarked that in every instance when the vedalia had been tested for white scale the result had been all that could be wished; that the little eaters never seem to become weary of this job, but keep it up continuously, and that he feels confident they are "lightning strikers" for this special duty—the greatest difficulty being to keep enough white scale on hand to maintain a colony all the time, as they not only eat incessantly, but propagate very fast. In reply to the question as to the work on the black scale, he said that he had not as yet discovered visible headway so far as he had examined; that he was fearful in most instances the colonies put out had been too small and were more than probably destroyed.

The Los Angeles Times thus sums up the situation for the week ended April 28th: The past has been another unsatisfactory week for the farmer, as far as weather is concerned. There has been plenty of promise of rain, a few showers having fallen north of Los Angeles, near the coast, and a few drops in this section, but not enough anywhere south of San Francisco to have any appreciable effect upon the growing crops. Some rain might still help corn, but as far as the barley is concerned much of that in this section is gone beyond redemption.

The Pomona Progress is urging the point of thorough cultivation for trees. It says: A. E. Blount, a prominent authority on the subject of irrigation of fruit trees in New Mexico, says: "By actual experiment I find that three or four cultivations crosswise and shallow are equivalent in effect to an irrigation so far as moisture is concerned; in fact, they keep the soil in a moist condition when executed at the right times." The wise orchardists are the ones who have already cultivated their ranches so thoroughly this season that the soil about their trees is as loose and mellow as an ash heap. Those who have neglected to do this should take the advice of the best fruit-growers if they would have their orchards thrive and produce fine fruit in dry a season.

Pomona Progress: At this date a year ago but little, if any, over half of the orange crop had been shipped. This year it has been nearly all shipped, and the exchanges have for weeks been holding the fruit back as much as possible. And yet the fruit-growers worried at the beginning of the season for fear the exchanges would not move the crop.

Marin.

San Rafael Tocsin: The rain came just at the critical moment, as it almost always does in this favored section. The fall seems to have varied somewhat according to locality, but the average for the county will be nearly an inch and a half. At San Rafael it is considerably over that and it is not certain that the storm is ended yet. This timely visitation has put a new aspect on things. It insures good hay crops generally and fair feed on the bottom land. Even on the hills pastureage, although not much improved, will remain green until about the usual time for the annual desiccation of all things. Farmers all over the county are lifted out of their deep despair and now feel that they can stand the strain of this season and wait for better times.

Napa.

Napa Register: The prune crop was very heavy in this section of the State last year. It will be light this season. Cherries, which will begin to ripen in another week, promise a fair yield. Peaches will require no thinning; there are none too many on the trees. Pears will probably be what they usually are in all well-cultivated orchards—abundant in quantity and excellent in quality.

William Thompson, a Napa man, has made preparations for the culture of mushrooms on a considerable scale. While in Philadelphia he found that it was a profitable business, and on his return began to get ready for it. He has had built two sheds 54 feet each in length and 10 feet in width. In the center of each shed, and running the length thereof, is an alley three feet wide, and on each side of the alley two pits, one above the other. In the pits 15 inches of manure are placed in order to get the necessary heat. On this a fine dressing of soil is spread. Into this the spawn is placed—a quarter of a pound to the square foot. The yield is estimated at 1½ pounds per square foot, and as the price ranges from 50 to 75 cents per pound, it looks as if mushroom culture should be profitable.

Orange.

Orange county letter in Los Angeles Times: Notwithstanding the fact that there has been reported a great deal of grumbling from the ranchers on account of the apparent dry season, there will be, in many portions of the valley, what may be termed half a crop of barley according to reliable information at hand at the present time. Within the past few weeks the barley out on the San Joaquin ranch, a great deal of it, has headed out much better than was anticipated. The straw will be short, but the heads are of medium size, and seem to be filling fairly well. One of the trustees of the big ranch said to the Times correspondent to-day that the crop (about 25,000 acres) would be a great deal better than it was believed three weeks ago it would be; that it would make half a crop, and that with barley now selling at most double its price of one year ago, he did not see why the ranchers would not be about as well off as if they had a full crop like they had last year and could sell it for only half its present value; that under the existing conditions of affairs the ranchers would not have to go to the expense of securing the extra sacks to hold the grain or of threshing double the number of bushels to sell for only half, or less, than the price prevailing at the present time. It is not at all probable that the dry season will materially injure the average Orange county rancher. In fact, that portion of the county west of the Santa Ana river known as the damp lands will no doubt produce unusual results the coming season.

Riverside.

Riverside Press: Sheriff Swope says that he found much better crops of hay throughout the portion of the county in which he was last week than he had expected existed. Especially in the Temecula and

Murietta country fair crops will be harvested. What was expected to make grain when sown will not make grain, but fair hay. County Surveyor Pearson has been up in the Elsinore and Wildomar country, and he reports that there will be quite a crop of hay in that locality, and that many of the ranchers are now engaged in cutting. J. W. Brockman of the Perris Valley irrigation district, who is in the city to-day, says there will be considerable hay cut in his locality.

Letter from "The Palms," Riverside county, in Los Angeles Times: Where there is one field of grain that it will hardly pay to cut (and upon which they are now pasturing stock) there are many fields that will bring a snug sum of money. We hear it said by those who draw largely from their imagination, or mere hearsay, and not from actual investigation, that the crops are almost a total failure, while the truth of the matter is, there are many farmers on non-irrigated lands that will harvest a fair crop. A ton of hay to the acre at the present price (\$15) will net more money than three tons last year. There is good prospect of from six to ten sacks of barley on some of the land between here and Santa Monica. There has not been as much corn planted this season as usual, large fields of beans having been planted instead.

San Bernardino.

San Bernardino letter: Five sheep men, owning together about ten thousand sheep, were arrested last week by Joseph Arbois, under instruction of F. W. Richardson, County License Collector, and they were placed under bonds for \$500 to stand trial for refusing to pay the county sheep license tax. A stubborn fight is expected in the effort of the sheep men to overturn the ordinance.

San Diego.

Julian notes in Nuevo Sentinel: The indications for the largest fruit crop ever known in the mountains are very favorable. The trees are covered with bloom and there is an entire absence of mildew which was so annoying a couple of years ago. If present expectations of fruit-growers are realized there are bright prospects yet in sight after many long years of discouraging waiting.

San Jacinto Register: The bee men are not as happy as they might be if circumstances were only different. Owing to the long continued dry and cold weather the prospects for a big crop of honey are anything but flattering. The lack of rain has caused the flowers to fail to bloom and the busy bee has in consequence found its field for labor very much narrowed. Especially is this so out in the mountains where the bees are far removed from orchards. Bees kept close to orchards have done some work and the prospects for a spell of warm weather to bring forth the tree blossoms encourages the owner of bees in such favored locations to hope that he will have some honey to sell.

San Jacinto Register: A good rainfall for this season would have been a good thing for this country in some respects, but a dry season is not so bad as it might be, for it will stimulate irrigation enterprises and teach our people to put their faith in ditches instead of clouds, and, fortunately for our country, this severe lesson is being taught in a season when we can best stand it, for our prosperity under the circumstances will be greater without the rain than it would be in many seasons with the rain.

San Joaquin.

The fruit-growers of San Joaquin county have taken steps toward the formation of a co-operative exchange, to work presumably in connection with the State Exchange. The following persons have been named as a committee to prepare and report a plan of organization: Dr. A. Armstrong, J. A. Anderson, J. W. Horton, F. Cogswell, J. B. Carey and J. D. Huffman of Lodi; Mrs. E. R. Carr of Woodbridge and Dr. N. A. Barbour of Lockford.

Santa Barbara.

Nordhoff Ojai: Cyril Doulton of Santa Barbara and Mr. Darling of Saticoy returned by train to their respective homes last Saturday from taking bands of horses to Bakersfield for pastureage in the alfalfa fields there. Mr. Doulton took 65 head of Santa Barbara horses, driving them across the country by way of the Matilija canyon and the Cuyama valley. Mr. Darling took a band of Ventura horses by train; and after comparing notes, these gentlemen concluded that the railroad was the cheapest and safest way of transportation. The railroad charge for the round trip of each horse is \$5, and the pastureage is \$1.75 per month. It will be necessary to keep the stock there about six months, so the transportation and pastureage for six months for each animal would make a total of \$15.50. Twenty horses can be put in a car, and the closer they are packed the safer they go. Mr. Doulton is to make another trip at once with about 150 Santa Barbara horses, and Mr. Darling expects to take over several carloads of Ventura animals.

Lompoc Record: Five thousand tons of hay can be cut and baled in this section if there is money to buy it. Several of the barley crops on the mesa will make a fine crop, but it is worth more in hay than barley. There will be far more hay than money. Mr. McKay has said that he would cut 2000 acres for hay if proper inducements were offered. Five thousand tons will be none too much to carry the stock through, but even at \$10 baled, where is the \$50,000 to come from to pay for it?

Solano.

Vacaville Reporter: The Suisun Valley Fruit Union held a meeting last week and each grower pledged that all of his fruit should be handled by the Union. The Earl Fruit Company and Barnett Bros. were selected as Eastern agents, they agreeing to handle the fruit for seven per cent, and allow a rebate of two per cent on all fruit sold at Chicago and one per cent on all sold east of Chicago. The old officers were re-elected for another year.

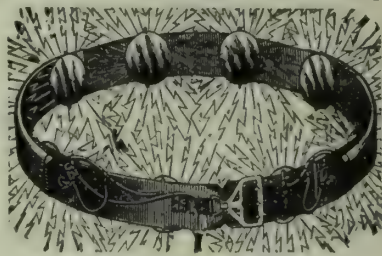
Sonoma.

Sebastopol Times: Analy township could have withstood the drouth two weeks longer, though, of course, there would have been some injury to certain classes of products. The chief complaint among the farmers was their inability to plow. The needed opportunity is now at hand, and all signs of discouragement are at an end. Business will pick up wonderfully in the next few weeks. Owing to the misfortunes of other sections, prices promise to be higher this year than for several seasons past, and the outlook for a prosperous year is Sonoma county was never better.

Sutter.

Farmer: We understand that arrangements have been made whereby the cannery here will be run in full force this year. The fruit crop this season will undoubtedly be large, and with prospects good for some advance in price in the Eastern markets this ought to be a good canned-fruit season. The reputation that the fruit from this section has in the East will command good prices if any fruit does.

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NOTICE is hereby given that at a meeting of the Directors of the Grangers' Business Association, held on the 11th day of April, 1894, an assessment of three dollars and seventy-five cents (\$3.75) per share was levied upon the capital stock of the Corporation, payable immediately to Charles Wood, the Secretary, at his office at 108 Davis street, San Francisco, California.

Any stock upon which this assessment shall remain unpaid on TUESDAY, the 15th day of May, 1894, will be delinquent and advertised for sale at public auction, and, unless payment is made before, will be sold on FRIDAY, June 15th, 1894, at two o'clock p. m. of said day, to pay the delinquent assessment, together with costs of advertising and expenses of sale.

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Secretary of Grangers' Business Association.

Office, 108 Davis street, San Francisco, Cal.

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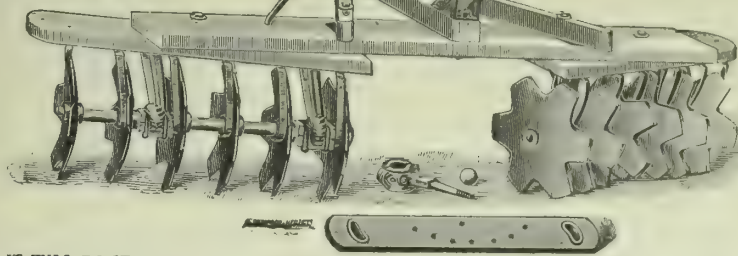
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RAIN, MORE RAIN! JUST WHAT YOU NEEDED. What you need now is a tool to kill the weeds that will spring up and at the same time break the crust and pulverize your ground and prevent the moisture from escaping. We offer you for this purpose the

Famous Clark's Cutaway Harrow!

IT WILL DO IT, TOO, and do it better than any other tool you have or can get. We furnish with the 4, 5 and 6-foot machines, if desired, an extension head, as shown in cut above. By using this head the soil can be cultivated clear to the trunk of the tree without the overhanging branches interfering in the least with the work of the horses.

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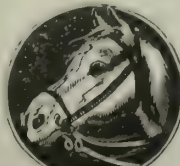
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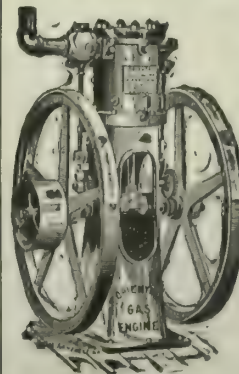
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—The sale of the Union Mill has been concluded. The price paid by Sperry & Co. was \$290,000.

—During March 50,000 pounds of fresh fish were shipped East from Aberdeen, Wash. Six lumber and shingle mills are running to their full capacity, and a seventh will start up soon.

—The board of directors of the Pacific Improvement Company has decided to place property valued at from \$10,000,000 to \$12,000,000 in the charge of the land department of the Central Pacific road for disposal.

—A very successful trial has been made in Sweden to fell trees by means of electricity. The process is very simple, and consists in passing a platina wire round the stem of the tree and heating it to a glow, cutting through the same much in the same way as one would divide a piece of soap with twine. One of the chief advantages is that the cut end of the log being burnt gives the log a better quality.

—The annual meeting of the stockholders in the Union Pacific Railway Company was held last Wednesday. The report of the directors shows a deficit for the year on the whole system of \$2,595,841, compared with a surplus the previous year of \$2,006,757. The heavy decrease was due to the silver crisis, the failure of the Kansas wheat crop and the general prostration of business. The control of the stock is going abroad. The Oregon Short Line and the Utah Northern show a deficit of \$238,356 as compared with a surplus in 1892 of \$744,660. The deficit for the Oregon Railway and Navigation system was \$199,459 in 1893, compared with \$1,564,441 in 1892.

—There are twenty-one firms in the lumber combine, and of the mills in the combine but nine are idle. There is a little advance in the price of clear and surfaced lumber, which is quoted at \$22 per M.; rough lumber, \$14. President Gray of the association says: "The consumption of redwood lumber in 1893 amounted to 240,000,000 feet. This includes all the material which left the mills. This being a dry year, we figure on a somewhat smaller demand. We have agreed to cut for the year 200,000,000 feet, and if there is any more needed we will supply it. You understand there is no desire to limit the supply and bull the market. We merely do this to prevent the market from being overstocked. Lumber has been selling at ruinous rates, and it would continue to do so if some restriction were not put on the output. The Navarro mill put out last year about 20,000,000 feet of lumber, the result being that it is now in the hands of the Sheriff. They had 500 men living there, many of whom had their families. All of the men had to go, and many of them are journeying eastward in the ranks of the unemployed. We wish to avoid any such end as this."

—The Bradstreet Mercantile Agency reports 11 failures in the Pacific Coast States and Territories for the week ending Friday, as compared with 16 for the previous week and 21 for the corresponding week of 1893. There were 91 failures in the Pacific Coast States and Territories for the month of March, with assets of \$270,366 and liabilities of \$453,947, as compared with 106 for the previous month, with assets of \$399,080 and liabilities of \$640,658, and 71 for the corresponding month of 1893, with assets of \$416,143 and liabilities of \$542,535. The failures of the past month are divided among the States and Territories as follows:

No.	Assets.	Liabilities.
California.....	74	\$236,966
Oregon.....	8	12,600
Washington.....	9	20,800
Totals.....	91	\$270,366
		\$453,947

The following are the causes assigned for the failures: Incompetency, 26; inexperience, 8; inadequate capital for the business undertaken, 46; injudicious crediting, 3; neglect of business and bad habits, 2; excessive competition, 1; unfavorable circumstances, floods, fires, etc., 4; fraud, 1.

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by local applications, as they cannot reach the diseased portion of the ear. There is only one way to cure Deafness, and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the Eustachian Tube. When this tube gets inflamed you have a rumbling sound or imperfect hearing, and when it is entirely closed deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever; nine cases out of ten are caused by catarrh, which is nothing but an inflamed condition of the mucous surfaces.

We will give One Hundred Dollars for any case of Deafness (caused by catarrh) that cannot be cured by Hall's Catarrh Cure. Send for circulars, free.
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"Ordinary" Mowers Co.
Gentlemen,
You have got the
hardest pulling mower I
ever backed up against.
I stucked one of them two
years ago and stuck to it
till it knocked me out.
The draft is the heaviest I
ever saw. - Why don't you
pattern after the McCormick
No. 4 Steel Mower? Its draft
is extremely light making it
very easy on horse flesh.
Yours Truly
C. Horse

THE WORLD'S FAIR

Committee, who tested the McCormick No. 4 Steel Mower in the only regular exposition field trials, in a heavy growth of timothy and clover, said, in their official report: "The efficiency of the machine is thus, under fair conditions, nearly 70 per cent. Ordinary figures for ordinary mowers are at least twenty pounds higher in total draft, with an efficiency of not above 60 per cent., which latter figure good machines should be expected to exceed." The McCormick is the lightest draft, and most effective grass cutter yet produced. [Highest Medal awarded.]

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Scientific Press



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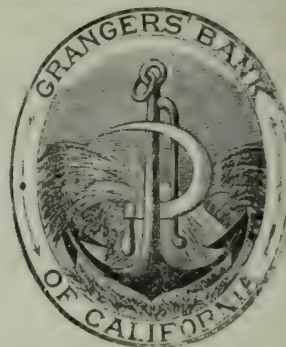
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SAN FRANCISCO, CAL.

INCORPORATED.....APRIL, 187



Capital paid up.....\$1,000,000
Reserve Fund and Undivided Profits, 130,000
Dividends paid to Stockholders.... 322,000
OFFICERS.

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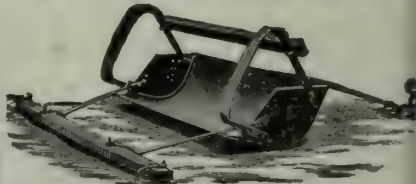
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A practical, explicit and comprehensive book embodying the experience and methods of hundreds of successful growers, and constituting a trustworthy guide by which the inexperienced may successfully produce the fruits for which California is famous. 600 pages. Fully illustrated. Price \$3. Postpaid. Send for circular. DEWEY PUBLISHING CO. Publishers. 520 Market Street, San Francisco, Cal.

S. H. MARKET REPORT

Market Review.

SAN FRANCISCO, May 2, 1894.
Wheat.

The continued stagnation of the local wheat market is the effect of operations in the Call Board. So long as Wheat can be sold in the Call Board for speculative uses at an advance on what the article is worth for export purposes, there is not likely to be any trading on shipping account. On a parity with the Liverpool market, spot Wheat is worth here 92½¢ to 95¢, but Call Board buyers will pay \$1 to \$1.02½ per cbl., and sales thereof are all in that direction. The tone of the market is showing more ease now that the month of May has arrived, and deliveries on contracts are being made. Milling Wheat is held at a range of \$1.07½ to \$1.12½, though buyers are not inclined to pay the latter figure, placing \$1.10 as their full limit.

Barley.

Business just now is largely of speculative character, and there is quite lively trading in futures in the Call Board, the December option being the attractive month for operations. Spot movement is very slow and limited, the demand for feed not being heavy, while the inquiry on milling account is anything but general or positive. Prices are fairly steady without being buoyant. Brewing qualities are somewhat scarce and owners are not disposed to make concessions on asking prices. We quote: Feed, \$1.02½@1.05 for fair to good, and \$1.06½@1.07½ per cbl. for choice bright; Brewing, \$1.15@1.17½ per cbl.

Dried Fruits.

Stocks are narrowed down very close, and the new season is likely to be entered under unusually promising conditions. More or less damage to growing crops in some sections is reported, but, so far, nothing has developed to upset the opinion of a liberal yield generally. In canvassing the situation, Thomas' Produce Report says: "The reported damage to Eastern crops, as mentioned some time ago, is not as extensive as was at first thought. Although, of course, considerable damage was done, still reports show that in districts where fruit was supposed to be entirely ruined, some crop will be realized. In other sections it was a case of being more scared than hurt. Prospects in this State are, as a whole, very good, and advances just reaching us from around Winters and Vacaville prophesy very large crops of both Peaches and Apricots in that section." We quote: Apples, 6½@7½¢ for quartered, 7@7½¢ for sliced, and 9@11¢ for evaporated; Pears, 6@8¢ per lb for bleached halves and 2@4¢ for quarters; bleached Peaches, 11@12½¢; sun-dried, Peaches, 8@9¢; Apricots, Moorpark, 14@15¢; do, Royals, 12@13¢ for bleached and 8@9¢ for sun-dried; Prunes, 5½@6¢ for the four sizes, -c for the five sizes and 4½@5½¢ for small; Plums, 5@6¢ for pitted, and 2 to 3¢ for unpitted; Figs, 3 to 4¢ for pressed and 1½ to 2¢ for unpressed; White Nectarines, - to -c; Red Nectarines, - to -c per lb.

Raisins.

No change in quotations. Market steady. London Layers, 60c to \$1; loose Muscatels, in boxes, 50 to 75c; clusters, \$1.50 to \$1.75; loose Muscatels, in sacks, 2½ to 3¢ per lb for 3 crown and 2½ to 2½¢ for 2-crown; Dried Grapes, 1½ to 1½¢ per lb.

General Produce Market.

OATS—Moderate inroads are being made on stocks, but sellers would like yet more brisk trading. There is no buying ahead, and the filling of immediate needs has to be relied on to keep the market in motion. We quote: Milling, \$1.22½@1.32½; Surprise, \$1.37½@1.42½; fancy feed, \$1.27½@1.32½; good to choice, \$1.17½@1.25; poor to fair, \$1.07½@1.17½; Black, \$1.10@1.22½; Red, nominal; Gray, \$1.12½@1.22½ per cbl.

CORN—The situation is very quiet, there being no desire to do business either in the regular way or in speculative fashion. Quotable at \$1.22½@1.27½ per cbl for Large Yellow, \$1.30@1.32½ for Small Yellow and \$1.25@1.30 for White.

CRACKED CORN—Quotable at \$28.00@29.00 per ton.

CORNMEAL—Millers quote feed at \$27.50@28.50 per ton; fine kinds for the table, in large and small packages, 2½@3½¢ per pound.

OILCAKE MEAL—Quotable at \$37.50 per ton from the mill.

COTTONSEED OILCAKE—Quotable at \$32.50 per ton.

SEEDS—We quote: Mustard, brown, \$2.25@2.50; Yellow, \$3@3.50; Tries, \$2.50@2.75; Canary, 3@4¢; Hemp, 3½@4½¢ per lb; Rape, 2@2½¢; Timothy, 6½¢ per lb; Alfalfa, 13@13½¢; Flax, \$3@3.25 per cbl.

MIDDINGS—Quotable at \$19@21 per ton. MILLSTUFFS—We quote: Rye Flour, 3½¢; Rye Meal, 3¢; Graham Flour, 3¢; Oatmeal, 4½¢; Oat Flour, 5¢; Cracked Wheat, 3½¢; Buckwheat Flour, 5@5½¢; Pearl Barley, 4½@4¾¢ per lb; Normal Nutrient, \$3 per case of 1 dozen cans; Breakfast Delight, \$3.25 per case of 2 dozen packages.

BRAN—Quotable at \$17.50@18 per ton.

HAY—The market is in stationary condition. Receipts are not large, but so far all wants have been promptly satisfied. Wire-bound Hay sells at \$1 per ton less than rope-bound hay. Following are wholesale city prices for rope-bound hay: Wheat, \$12.50@17.50; Wheat and Oat, \$13@17.00; Wild Oat, \$12@15.50; Alfalfa, \$10@12.50; Barley, \$11@14; Clover, \$11.00@12; Compressed, \$12.50@15.50; Stock, \$10@12 per ton.

STRAW—Quotable at 75@85¢ per bale.

HOPS—Nothing doing. Dull and quiet at 14@16¢ per lb.

RYE—Quotable at \$1.17½@1.20 per cbl.

BUCKWHEAT—Quotable at \$1@1.15 per cbl.

GROUND BARLEY—Quotable at \$24@25 per ton.

POTATOES—New are showing improved quality. We quote: New Potatoes, ¼@1¼¢ per lb; Sweets, 75¢@1.25 per cbl; Early Rose, 25@35¢; River Burbanks, 35@50¢; River Red, 20@30¢; Oregon Burbanks, 50@85¢.

ONIONS—New, \$2@2.25; old, \$3@4 per cbl.

DRIED PEAS—We quote: Green, \$1.50@1.75; Blackeye, \$1.60@1.65; Niles, \$1.50@1.75 per cbl.

BEANS—Trade is quiet, though prices are steady. We quote as follows: Bayos, \$2.50@2.60; Butter, \$1.75@1.80 for small and \$2@2.25 for large; Pink, \$1.95@2.15; Red, \$2.25@2.50; Lima, - @ -; Pea, \$2.50@2.60; Small White, \$2.50@2.65; Large White, \$2.40@2.55 per cbl.

VEGETABLES—Asparagus was weaker yesterday, supplies being larger. Rhubarb continues plentiful, with low prices. Peas are also in liberal receipt, being in good demand. String Beans sell slowly, offerings being small and poor. Most of the Garlic on the market just now is of inferior quality and can be bought at almost any figure. Good stock will command quoted rates. Arrivals yesterday were 1135 boxes Asparagus, 585 boxes Rhubarb and 638 sacks Peas. We quote as follows: Cucumbers, 40@50¢ per dozen for common and 75¢@1.25 for good to choice; Asparagus, 75¢@1.25 per box for the ordinary run and \$1.50@1.75 per box for choicer quality; Rhubarb, 25@65¢ per box; Green Peas, common, 75¢@90¢ per sk; Sweet do, \$1@1.25; String Beans, 8@10¢ per lb; Mar rowfat Squash, - per ton; Hubbard Squash, - per ton; Green Peppers, 12@15¢ per lb; Tomatoes, \$1@1.50 per box for poor to fair and \$2.50@3 for good to choice; Turnips, 75¢ per cbl; Beets, 35¢ per sack; Parsnips, \$1.25 per cbl; Carrots, 35@40¢; Cabbage, 50@60¢; Garlic, 3@4¢ per lb; Cauliflower, 60@70¢ per dozen; Dry Peppers, 17½@20¢ per lb; Dry Okra, -c per lb.

FRESH FRUIT—A box of Apricots arrived Monday and was sent out to the Midwinter Fair. It came from the Winters orchard of G. W. Hinkley. Cherries are coming in a little more freely, but the fruit is small and unattractive, while prices are very irregular, sales being made at a range of 50¢@2 per box, as to quality. Receipts of Cherries yesterday were 90 boxes. We quote: Apples, 75¢@1.25 per box for fair to good, and \$1.50@2 for choice.

BERRIES—Neither Gooseberries nor Raspberries were seen yesterday. Strawberry arrivals were 322 chests, quotable at \$5@7 per chest for Sharples, and \$6@8 for Longworths in baskets and \$7@10 in drawers.

CITRUS FRUIT—Demand less urgent and prices easier. We quote: Fair to choice Navel Oranges, \$1.50@3.25 per box; Seedlings, \$1@2; Mexican Limes, \$4@5 per box; Lemons, Sicily, \$4@5; California Lemons, 75¢@1 for common and \$1.25@2 for good to choice; Bananas, \$1.50@2.50 per bunch; Hawaiian Pineapples, \$2.50@3; Mexican Pineapples, \$3@3.50 per dozen.

NUTS—We quote: Chestnuts, 6@8¢ per lb; Walnuts, 6@7½¢ for hard shell, 8@9¢ for soft shell and 8@9¢ for paper shell; California Almonds, 10@11¢ for soft shell, 6@7¢ for hard shell and 11½@12½¢ for paper shell; Peanuts, 3@4¢; Hickory Nuts, 5@6¢; Filberts, 10@10½¢; Pecans, 5@8¢ for rough and 8@10¢ for polished; Brazil Nuts, 8@9¢; Coconuts, \$5@5.50 per 100.

HONEY—Comb, 11@12¢ per lb for bright and 9@10¢ for dark to light amber; water white extracted, 5½@5¾¢; amber extracted, 5@5½¢; dark, 4@5¢ per lb.

BEESWAX—Quotable at 24@25¢ per lb.

BUTTER—Weak at the late reduction. We quote prices as follows: Fancy Creamery, 20@21¢; fancy dairy, 18@19¢; good to choice, 16@17¢; common grades, 12@14¢; store lots, 12@14¢; pickled roll, new, 21@21½¢ per lb.

CHEESE—The market is showing improving tone. We quote as follows: Choice to fancy, 8½@9½¢; fair to good, 7@7½¢; Eastern, ordinary to fine, 13@14½¢ per lb.

EGGS—The margin in prices continues to widen, there being more difference now in the quality of offerings than there was a short while ago. We quote: California ranch, 14@16½¢; store lots, 11@13¢ per dozen.

POULTRY—The situation is against sellers, as offerings are largely in excess of the demand. A carload of Eastern poultry is due to-day. We quote: Live Turkeys—Gobblers, 8@10¢; Hens, 10@11¢; dressed Turkeys, 10¢ per lb for Gobblers and 10¢ for Hens; Roosters, \$3.25@3.50 for old and \$7@9 for young; Broilers, \$2@3 for small and \$4.50@5.50 for large; Fryers, \$6@7; Hens, \$3@4; Ducks, \$3@4 for old and \$5@7 for young; Geese, \$1.25@1.50 for old and \$1.75@2.25 for young; Pigeons, \$2@2.50 per dozen.

GAME—Nominal.

WOOL—There is a fair demand for good to choice descriptions, and the prices for such goods are moderately firm. Heavy and defective stock is not wanted. We quote spring: Year's fleece, per lb., 6@7¢; Six to eight months, San Joaquin, poor, 5@6¢; do fair, 7@9¢; Oregon and Washington: Heavy and dirty, 6@7¢; good to choice, 8@10¢; valley, 10@13. We quote fall: Northern defective, 5@6¢; Southern and San Joaquin, 3@4¢.

HIDES AND SKINS—Quotable as follows:

	Sound.	Culls.
Heavy Steers, 54 lbs up, ½ lb. 4½@5¢	3½@4¢	
Medium Steers, 48 to 56 lbs. 4 @-c	3@4¢	
Light, 42 to 47 lbs. 3½@3¾¢	2½@2¾¢	
Cows, over 50 lbs. 3½@3¾¢	3 @-c	
Light Cows, 30 to 50 lbs. 3½@3¾¢	2½@2¾¢	
Stags, 17 to 30 lbs. 3 @-c	2 @-c	
Kips, 17 to 30 lbs. 4 @-c	3 @-c	
Veal Skins, 10 to 17 lbs. 5 @-c	4 @-c	
Calf Skins, 5 to 10 lbs. 7 @-c	6 @-c	

Dry Hides, usual selection, 7c; Dry Kips, 7c; Calf Skins, do, 7c; Cull Hides, Kip and Calf, 4c; Pelts, Shearling, 10@20¢ each; do, short, 25@35¢ each; do, medium, 40@50¢ each; do, long wool, 50@75¢ each; Deer Skins, summer, 25¢; do, good medium, 15@20¢; do, winter, 5¢ per lb; Goat Skins, 25@40¢ apiece for prime to perfect, 10@20¢ for damaged, and 5@10¢ each for Kids.

TALLOW—We quote: Refined, 5½@5¾¢; rendered, 4½@4¾¢; country Tallow, 4@4½¢; Grease, 3@3½¢ per lb.

San Francisco Meat Market.

Calves are a drug, the supply being too large for immediate trade. Beef and mutton are both easy. Following are the rates for whole carcasses from slaughterers to dealers:

BEEF—First quality, 5@6¢; second quality, 4@5¢; third quality, 3@4¢ per lb.

CALVES—Quotable at 3@5¢ per lb.

MUTTON—Quotable at 5@6¢ per lb.

LAMB—Spring, 7@9¢ per lb.

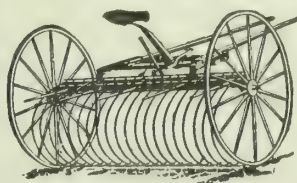
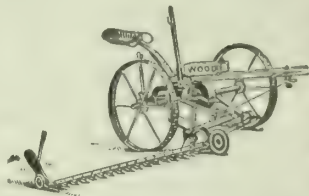
PORK—Live Hogs, on foot, grain fed, heavy and medium, 4½¢; small Hogs, 4½¢; stock Hogs, 3½@3¾¢; dressed Hogs, 6@7¢ per lb.

SAVE CROPS

THE BEST EASIEST WAY.

USE THE WALTER A. WOOD MACHINES.

The Wood Mower is the best machine and in some ways exceptionally so. The team pulls direct from the cutter bar, which is not pushed and does not root into the ground in hard cutting, nor is the lever used when turning or backing. It has a spring lift. The gearing is compact, powerful and right. It cannot clog. It is durable. It is the machine that gives satisfaction—what more can be said, unless you send for our handsomely illustrated circulars.



The Walter A. Wood Rake

is built in three sizes, 8, 10 and 12 feet, and either Hand Dump or Self Dump. The shafts are arranged for one or two horses. Its Steel Wheels are the best and strongest

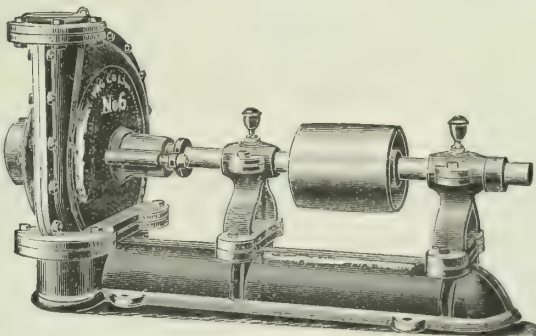
rake wheels made. It has Steel Axles and Coil Teeth. Address

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and Merchandise of every description solicited.

E. VAN EVERY, Manager.

T. R. BALLINGER, Grain Salesman.

Edison's Kinetograph.

The latest wonder of photography is the kinetograph, the marvelous device with which Mr. Edison has accomplished the feat of recording and reproducing motion. It has long been the distinction of the pictorial or plastic arts that they represent form only, but, as the present generation may say of a great many things, we have changed all that. Mr. Edison accomplishes this wonderful result by taking an unbroken series of photographs at the rate of 46 a second, giving pictures of the most agile acrobatic feats so closely following each other that hardly any difference can be detected between any one and the next. When the pictures are made to pass before the eye at the same rate of speed they blend into each other so perfectly that the motions of the person photographed can be seen with great distinctness. Many revelations were at once made by the application of this instrument, which almost equals in importance the discoveries from instantaneous photography, as for instance the fact that in turning a somersault on the hands there is a place where both hands and feet are off the ground at once, although the acrobats had been quite unconscious of the fact.

The chief importance of the invention, however, is in connection with the kinetoscope, as Mr. Edison calls his reproducing apparatus. Its practical uses seem almost unlimited. With the co-operation of the phonograph the words and gestures of a great actor can be handed down to a glorious immortality. Generations yet unborn may hear and see the tragic power of Bernhardt and Duse, of the kaleidoscopic gyrations of the ballet queens of our day. Every one may transform his house into a parlor theater where one may see through a peephole and hear through a funnel the plays of Shakespeare and the operas of Wagner by the simple pressing of a button. Nay, more, if the predictions of such scientists as Professor Houston come true, it will not be long before we have a real telescope which is something more than a spyglass, and will enable us to see as far as we can telephone. Rapid progress has been made in this direction since the discovery of the singular qualities of selenium, which alters its conductivity with varying conditions of light and shade, and Edison, Morse, Le Poutois, Johnson and Amstutz have met with such remarkable results in transmitting light through a wire that many conservative scientists concede the possibility of the electrical transmission of pictures. When that is accomplished we shall be able to talk with our friends a thousand miles away, and at the same time watch the play of their features. Admirers of football in all parts of the country may enjoy the game as it proceeds, kinetoscopic images of each play being flashed on a stereopticon screen. All this sounds incredible enough, but no more so than did the steam engine or the telephone to the people who first heard of them.

Shepherds in Italy.

The first annual report of the United States Commissioner of Labor thus portrays the conditions, wages, etc., of shepherds in Italy:

"Condition—Lives in haystack-like hovel; leads a solitary life; cannot read; possesses but a slight degree of intelligence.

"Diet—Breakfast, black bread, oil, water; dinner, black bread, oil, water; supper, black bread, oil, water. This meager and monotonous diet is varied at frequent intervals by a very small piece of bacon, salt pork or macaroni, an onion or a little fennel; on great fete days by a little wine.

"Earnings at seven cents a day, \$25.55.

"Cost of Living for the Year—Bread, \$14.60; oil, \$5.47; other food supplies, \$1.82; clothing, \$3.66.

"Expenditures, \$25.55.

"Earnings, \$25.55.

An Old Man's Record.

A methodical man died in Berlin recently at the age of 73 years. When 16 years old he began keeping a record, which he continued for 52 years, which is the best commentary we have seen on the life of a mere worldling. His book shows that in 52 years this "natural man" had smoked 638,715 cigars, of which he had received 43,692 as presents, while for the remaining 585,021 he had paid about \$10,433. In 52 years, according to his book-keeping, he had drunk 28,780 glasses of beer and 36,086 glasses of spirits, for all of which he spent \$5340. The diary closes with these words: "I have tried all things, I have seen many, I have accomplished nothing."

A Great Jetty.

"The great jetty at the mouth of the Columbia river, in Oregon," says the *Railway Review*, "is the largest and most important one ever constructed, and has the still greater distinction of having been made for 25 per cent less than the estimated cost. The work, we need hardly say, was done by the Government engineers and without contracts. The work is more than four miles long, 15 feet wide on top, and has consumed 6000 piles that were inserted mainly by water jets, a few blows being given at the end of the sinking with a hammer of three tons weight. The estimate for the work was \$3,710,000, and the cost will be one-fourth less. The work is now nearly completed, and has accomplished fully what was intended, giving passage over the great bar for vessels of any draught. The depth of water alongside the work has been increased from 6 to 20 feet in some places, and 4000 acres of area have been raised above the water. The Columbia is 1000 miles long, the only large river on the Pacific Coast, and forms the only safe harbor between Seattle and Puget sound, 600 miles."

Electricity in Incubation.

Electricity has found a new outlet in Pittsburg in the line of incubation. In one of the prominent business buildings a very crude arrangement has been used to hatch eggs and has given very good results, fully 90 per cent of the fertile eggs resulting in lively, well-developed chicks. The apparatus consists of a small box, in the lower part of which is a drawer lined with cotton, where the eggs are placed. Above them two incandescent lamps of 16 candle power are suspended, and the steady heat radiating from these globules maintains the necessary temperature of 100 to 103 degrees F., which is indicated by a thermometer placed among the eggs. The minor details of moisture and the occasional turning of the eggs were observed as in the ordinary incubation. The chicks are thriving, and a new set of eggs is being treated, about half of which are goose eggs. The scheme is susceptible of considerable development from this crude beginning, as a resistance box instead of the lamps would be more effective and more economical. The commercial aspect of the question remains to be shown.

A Lake in the Clouds.

A triumph in engineering is reported from the mountains of Peru, where a twin-screw steamer of 540 tons, 170 feet long and 30 feet wide, has been successfully launched on Lake Titicaca, the highest navigable waters in the world, more than 13,000 feet above the sea.

The steamer, which belongs to the Peruvian Government, and is to be used for freight and passenger traffic, was built on the Clyde, then taken apart in more than a thousand pieces and shipped to Molendo by sea. It was then carried to Puno by railway and transported over the mountains on the backs of llamas and mules, and put together by a Scotch engineer.

Where the Money Went.

When the Midway Plaisance people were leaving Chicago, bankers were kept busy for quite a while in changing \$1,000,000 or more, which they carried away as the result of a summer's industry, into the coin of other realms. A donkey boy from Cairo street unrolled a tattered cloth containing \$700 in silver, for which he wished French francs, while a camel driver had a clear \$1000. An Arab, a Turk, a Nubian soldier and a Persian dancer each had a little fortune of \$1000 in silver.

A CURIOUS FEATURE about Japanese journalism is that every important paper is said to have a "prison editor." Japanese journalists are so constantly being fined and sent to prison that the sole occupation of the individual is to go to jail when called upon.

MAKING many copies of documents inflicts upon the typewriter operator a peculiar sort of nervous exhaustion. In well-conducted offices these copies are now given in rotation, alternating with other work.

THE function of the negro's black skin is now supposed to be the conversion of the sun's light into heat. The heat thus generated remains in the skin, never penetrating to the deeper and more vital tissues.

A New Jersey Miracle.

Helpless for Years with Locomotor Ataxia and Rheumatism. His Case Pronounced Hopeless by the Leading Physicians of Sussex County.

(By Special Correspondence to the N. Y. Press.)

The busy little village of Branchville, N. J., has been the scene of a modern miracle. Chas. F. Struble, a well known and prosperous farmer, living on Homestead Farm, in Frankford Township, a few miles from Branchville, is just now the chief subject of discussion throughout Sussex county.

The Press is always up to date in its news, both political or medical, and has procured the following from Mr. Struble's own lips:

"I have been troubled with rheumatism off and on for 20 years. I have tried all kinds of medicines and treatments. I have taken sulphur baths at Hamburg, N. J., Newton, N. J., and in New York City with a doctor who charged me \$2.50 a bath each day. An English doctor treated me with a galvanic battery at Rockaway, Morris Co., N. Y. I have tried many doctors. None of them did me any permanent good. I used all kinds of liniments I could hear of but without avail.

"About two years ago I was taken much worse and my doctor said I had locomotor ataxia of the spine, and that the chances were against me. After treating for a time, he finally gave me up and said he had done all he could for me.

"The cords of my limbs were drawn tight as the cords on a kettle drum, and I had such cramps in my limbs that I suffered terrible pain. My feet were cold all the time. I had to use a hot water bag and heated bricks to my feet, but even then I could not get any relief.

"Finally I heard of Dr. Williams' Pink Pills for Pale People, and I commenced taking them on Feb. 5th, 1893. I found in three days' time that the cords in my legs began to 'let up,' my feet began to get warm, I began to eat and sleep well, and in one month I had gained six pounds. The numbness in my limbs began to leave me too, and to-day I feel like a new man, and cannot say too much in praise of Dr. Williams' Pink Pills. I am able to walk and do some work, and all this is after using only nine boxes of Pink Pills. I feel so grateful for my recovery that I am glad to let the public know what these pills have done for me."

In order to emphasize his story, Mr. Struble made the following affidavit:

Sworn and subscribed before me this thirteenth day of April, A. D., 1893.

IRA COSS, Justice of the Peace.

Justice Coss evidenced his interest and good feeling by the following certificate:

I hereby certify that all that Mr. Struble says regarding his rheumatic and other troubles I believe to be true and correct.

IRA COSS, Justice of the Peace.

On the farm with Mr. Struble live his two adult sisters. Miss Annie M. Struble made the following statement:

Dr. Williams' Pink Pills for Pale People have done wonderful things for my brother. He was in a helpless condition when I left him on Jan. 12th last, and when I returned on March 25th, I found him cured. The most remarkable thing about the case," she continued, "is the curing of his lameness. Of course I wanted to know all about the causes of such a wonderful change, and I learned from him and my sister and others, that during my absence he had been using the Pink Pills, and that his recovery was attributed solely to them."

Miss Mary E. Struble said: "I saw my brother in all the stages of the disease. He began improving as soon as he began taking the Pink Pills. When my sister went away in January he was apparently at death's door and nobody seemed to have any hope for him. He certainly had little or none for himself, and he was very despondent in spite of all efforts to cheer him. He declared that he felt better as soon as he began taking the Pink Pills, and to one who, like myself, was attending him day by day, there could be no doubt that they and they alone were the cause of his improvement. Why, all the other things he had tried he had abandoned, for they had failed to do him the slightest good. What else could have put him on his feet again? We don't wonder at his enthusiasm for the Pink Pills."

George J. Bowman, the proprietor of the American Hotel at Branchville, said: "All that Mr. Struble says in reference to the Pink Pills I know to be true. In fact, he can't say too much about them, for they have undoubtedly saved his life."

At the Branchville drugstore, chief clerk Henry Beemer remarked: "I have no doubt that Dr. Williams' Pink Pills have cured Mr. Struble." Joseph H. McDonald, the proprietor of the General Store of Branchville, and Postmaster Knox, expressed themselves in similar terms.

Pink Pills for many years previous to their general manufacture were used as a prescription. At first they were chiefly prescribed for impure blood and general weakness. Now they are found to be a never-failing specific for such diseases as locomotor ataxia, partial paralysis, St. Vitus' dance, sciatica, neuralgia, rheumatism, nervous headache, the after effect of La Grippe, palpitation of the heart, pale and sallow complexions, and all diseases of the blood, such as scrofula, chronic erysipelas, etc.

They are also a specific for troubles peculiar to females, such as suppressions, irregularities, and all forms of weakness. They build up the blood and restore the glow of health to pale and sallow cheeks. In men they effect a radical cure of all cases arising from mental worry, overwork, or excesses of whatever nature. Pink Pills are sold in boxes (never in loose form, by the dozen or hundred, and the public is cautioned against numerous imitations sold

in this shape), at 50 cents a box or six boxes for \$2.50, and may be had of all druggists or direct by mail from Dr. Williams' Medicine Company, Schenectady, N. Y., or Brockville, Ont.

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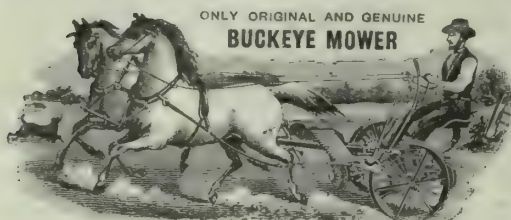
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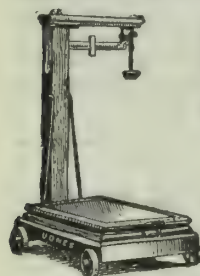


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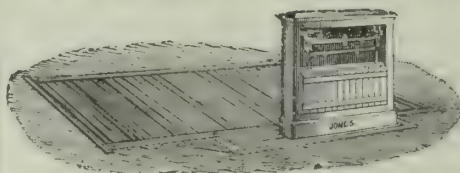


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The Situation as to Horse-Breeding.

Before giving up the breeding of horses and declaring the business dead, will it not be well to take a candid practical view of the case, and before throwing away an advantage already gained, consider well what has brought on present conditions, whether the causes are likely to continue indefinitely, and if not, how best to take advantage of the change when it comes. Nearly every kind of business has had its boom and reaction during the last twenty years, and the horse business has been one of them. Its effects have been and are felt over a wider extent of country than almost any other business, because it is so intimately connected with every other. Many breeders attribute the present condition of the horse market to over-production, and the introduction of electricity. The over-production has been entirely of the cheaper grades, and this class is what is being displaced by electricity. Electricity can never take the place of the heavy draft or fine coach horse. General business depression has had more to do with the fall in the horse market than anything else. Nearly every one is economizing and doing without or making the best of what they have. That this condition will last long no one believes. A renewed demand is among the certainties of the future. When this fresh demand comes there will be a short supply to meet it, because of the falling off in breeding for the past three years and the probable continuance of it for a year or two to come. Horses, as a rule, are short-lived animals. The visible supply is being used up at a very rapid rate, and the fact that it takes five years to produce a horse ready for market is lost sight of by the croakers who are now and have been for three years crying the horse business down. Another fact is that the best time to engage in the production of any staple commodity is when it is down and not when it is booming. So many farmers have learned by sad experience that they cannot produce salable horses from ordinary stallions and have given up the attempt, that the chance for those who can and do raise first-class horses in the future will be greatly improved. Taking past experience and a candid view of the future of this country, it would seem that now is the right time for those farmers who are favorably situated to take hold of high-class horse breeding in earnest. They can now secure a choice selection of mares at moderate cost and buy first-class stallions at "rock-bottom" prices. The latter can now be bought cheaper than they are likely to be again for years, for the reason that this year will about use up the stock of imported stallions on hand and good ones cannot be imported to sell at prevailing prices. Think on these things. Should not, under the circumstances, the owners of mares be more particular than ever in their choice of stallions and breed more judiciously than ever for the inevitable future market? The present conditions are simply the result of bursting boom bubbles. This country is not going to destruction; business is settling down to a sound basis, and a healthy reaction is sure to follow. A revival in general business will bring a quick and strong demand for horses, and the man who then has good ones can name his own price for them. The main point in breeding is the choice of a stallion, and care should be taken to buy only the best and from reputable importer.

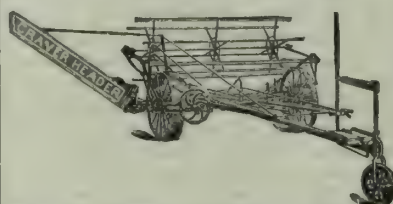
There has been lately landed in San Francisco the finest lot of imported Percheron and French Coach stallions ever brought to the Pacific Coast. This stock ranges in age from two to six years, and was selected in France by the veteran importer, Leonard Johnson, who for many years was foreign buyer for M. W. Dunham, of Wayne, Ill. Mr. Johnson has personally selected and brought to this country over Two Thousand Horses, and is universally acknowledged to be the best judge of Draft Horses in America. Each animal in this lot is a good one, not only individually, but of the best possible breeding, as is attested by the certificates of registry in both the Percheron stud-books of France and America. A satisfactory guarantee given that each stallion will get sixty per cent of colts. This is a rare chance to get a first-class stallion, as no such stock as this has ever been offered for sale here at as low figures as this will be sold for. Time given on approved paper. STABLES—Close to Midwinter Fair, on Fifth avenue, opposite Race Track, next door to Scott & McCord's Feed Store, San Francisco, Cal. Take Geary street car. For further information and catalogues, address the Secretary of the American Percheron Horse Breeders' Association, S. D. THOMPSON, OCCIDENTAL HOTEL, SAN FRANCISCO.

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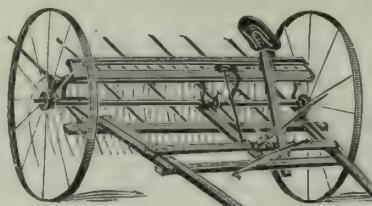
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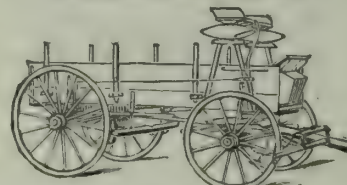


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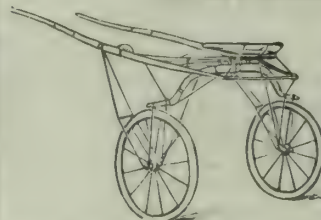
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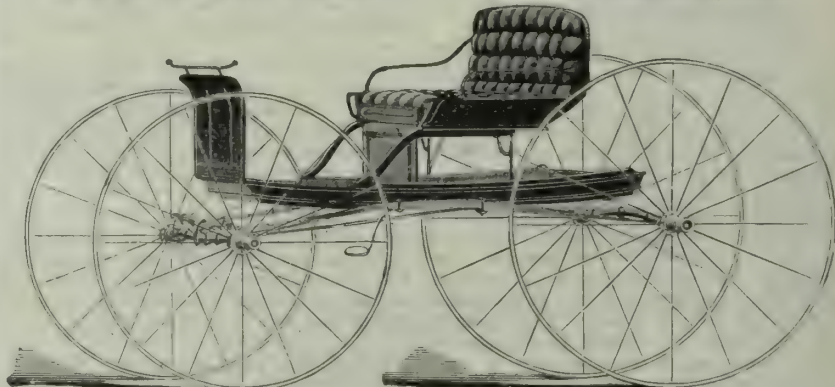


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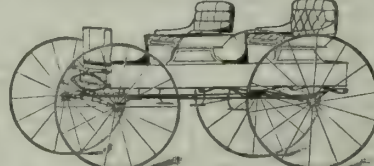


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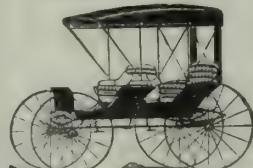
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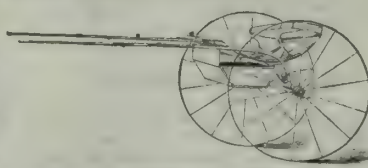
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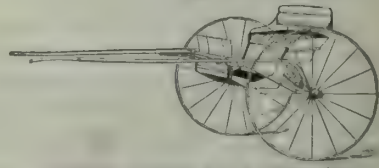
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PACIFIC RURAL PRESS

Vol. XLVII. No. 19.

SAN FRANCISCO, SATURDAY, MAY 12, 1894.

TWENTY-FOURTH YEAR.
Office, 220 Market Street.

Orientalisms.

The antique nations of the eastern and southern coasts of Asia have come prominently before the American people at the great expositions of the last two years. Their participation has apparently been dictated both by national pride and thrifty penny turning, but in this dual motive they are not exceptional. Such has been the idea upon which nearly all the nations have gathered, and such also has characterized the American welcome which has been extended to them. Whether the same motives have joined hands in the reflections of oriental philosophy and religion which we have had, as well as in the displays of anthropology and industries, we do not pretend to say. It must be admitted, however, no matter upon what basis of reason or motive the overt acts have rested, that America has had more orientalisms in its sight and in its thought during the last two years than in all previous time. To the new people of a new country the affairs of the oldest of both peoples and countries are naturally attractive and entertaining. Consequently, we find that the Asiatic features of our great fairs are popular. They have also had, unquestionably, a certain educational value to our people, even if we never work, play, think, or believe, as do our oriental guests. They have contributed something to our knowledge, possibly something to our humanitarianism and have, at least, given us some new ideas, both in art and artisanship; therefore, those who have had opportunity for contemplating those peculiar manifestations of the divine image should be grateful. A wider circle has also been benefited to a less degree by the pictorial representations of Asiatic contributions to the great fairs, which have been made in American prints.

One of the engravings on this page will serve to show how successfully a presentation of antipodean environment can be made within our own borders and largely with our

own materials. This will no doubt suggest to landscape architects and gardeners many ways in which oriental methods may be introduced in laying out public and private grounds, and thus answer the constant demand for novel effects. We have already largely orientalized our interiors of homes and public buildings, and now we shall

State Grange, Boards of Supervisors, Mayors of the cities and the State Farmers' Alliance. A strong programme has been prepared, relating to legislation and methods of road improvement and repairs. Counties or cities which failed to appoint delegates to the former conventions are invited to appoint to this.



TEA-GATHERING ON A CEYLONESE PLANTATION.

have much of it in the open air. Whether this will constitute a factor in the development of an American style, which will be realized in a century or two hence, we leave it for the art critic of that era to determine. It may, however, please the imagination, even at this obscure time, to picture what will be our style, based upon classic models and carried along through the modifying influences of familiarity with log cabins, Indian wigwams, bungalows, tea-houses, temples, etc. Really, it seems as though the future might after all be worth living for.

The picture with the tripping Japanese maidens represents a portion of the Asiatic department at the Midwinter Fair. If it were not for its background of Monterey pines and eucalyptus, and the thoroughly American "frame building" in the left distance, it might readily be taken for an acre of Japan. It is such a glimpse of Asia as any one could have in his back yard, for it could be as easily made there as in the sand of the Fair grounds. It is all artificial, for there was neither a rock nor a drop of water

on the spot when the Asiatic landscapists began.

Not inappropriate to the foregoing is the true oriental scene which also appears on this page. It represents the tea harvest on the island of Ceylon and illustrates not only some national characteristics of the Ceylonese, but shows their method of tea-planting. The scene is a novel and interesting one.

THE next meeting of the State Road Convention will be held in Santa Rosa on May 24, 25 and 26. The convention is composed of delegates appointed by the Governor, by the



IN THE JAPANESE TEA GARDEN AT THE MIDWINTER FAIR.

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ALFRED HOLMAN.....Editor
E. J. WICKSON.....Special Contributor

San Francisco, May 12, 1894.

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The Week.

Strawberries are beginning to go eastward by the carload from Sacramento county. This is the beginning of the great eastward movement of fruit which will soon set in. The fruit prospects, as described in other columns, are still in the main promising. In other lines the drouth is rapidly drawing the scenes to the close. Stock is being moved great distances for feeding ground, and people will be making long journeys for employment in the fruit orchards.

The coming political campaign, of which the first notes are now audible, will serve as a welcome distraction for thoughts which are weary of contemplation of thin purses and lean fields. When the farmer has little in his own affairs he can do more to settle the affairs of State. When the producer is very busy the politician saves the country. This year the producers should make their influence felt.

The Yosemite is declared to be open and the various resorts are brushing up their attractions to an unwonted brilliance. The prospect is, however, that home will prove a place of unparalleled sweetness to many this year.

THERE has just been issued from the office of the secretary of the State Agricultural Society, Mr. Edwin F. Smith, a book of 350 pages containing the reports, etc., of the society for the year 1893. It gives full information concerning the affairs under the administration of the agricultural department of our State Government, and, in addition, a full report concerning the resources, conditions, etc., of each of the several organized agricultural districts of the State. The book has been edited by Secretary Smith in a way which shows that he has not lost his journalistic cunning. The edition is comparatively limited, but there are some copies in the hands of the secretary for distribution and they will be sent, as long as the supply holds out, to those who apply for them.

The Recourse to Agriculture.

And now comes the proposition to colonize the idle Industrialists upon agricultural lands. It has come to be regarded as the most natural conclusion in the world that if anyone is out of conceit with his fortune he should be advised to go to farming. It begins with thus marking out the life courses of the dull boys in the home, and it proceeds through the disposition of all the professional and commercial misfits of early manhood. The farm is thus made to carry all the failures and to be an asylum for all the wavering and distressed.

We do not quarrel with the theoretical view that those who are unsupplied with subsistence should be made to seek it at original sources; that instead of being a burden upon the public, such unfortunates, if able-bodied, should be remanded to the bosom of Mother Earth for sustenance. But we do dissent from the conclusions which are sometimes drawn from such a theoretical view. There may have been a time in the early history of mankind when the lazy barbarian might well have been ordered to dig his own roots instead of feeding upon the digging of others, but since agriculture has become an industrial affair and can only be successfully pursued with knowledge and skill and capital, it has become little less than ridiculous to still hold the old view of farming as synonymous with barbaric root-digging. For this reason we regard as odd and visionary the scheme which is said to be now entertained at the East to colonize the idle people upon idle land, and from these two exponents of unfitness to expect a return in prosperity and comfort. Such, however, is the scheme:

Each colony will occupy a block of land two miles square, or four square miles. It will contain 108 farms of 20 acres each, and in the center will be a plat of community property, containing 360 acres. Each person who takes up a farm of 20 acres becomes a part owner in the community property, which, however, will be non-negotiable.

Here, now, is how the proposed colonization scheme has an advantage over everything else ever proposed. A man takes one of the 20-acre farms. He can do with that anything he pleases. In the central plat will be the houses of all the colonists, grouped around in a circle, with stores, schools, meeting places, and all the accommodations and means of enjoyment and recreation to be found in the city. A man gets a house, located in the central plat, with his 20-acre farm. He can live in that or he can go and live on his farm if he wants. But the advantage of living with all the other colonists requires no argument to be seen. He will be with his friends and he can enjoy their society. Without the circle of 108 residence lots will be some 170 acres of public pasture and garden, all part of the community plat of 360 acres. We have it figured down that 108 families can make a living from this property, so that all the product of the farms will be clear profit.

This is the plan upon which the unemployed are to be farmed out. It is not at all new in idea of village residence of owners of outlying farms; that is an old notion quite beautiful in theory but commonly held to be impracticable at this stage of the world's progress. But we do not intend to discuss that feature; it is not the most illusive. What strikes us as the most unsound part of the general proposition is that it is planned to bring a host of families from the surplus population of cities, establish them upon farms and expect them to not only make a living but pay for all the improvements, rural and municipal, which will be incurred in the development of such colonies. It is not to be presumed that many of these people know anything about farming. They are mechanics, artisans, printers and the like, who have given the best of their lives perhaps in following the industrial trades and arts and who are now expected to go forth on raw land and develop their fertility and produce crops of which they have never seen any stage earlier than of the grocery counter. The idea is preposterous.

Is, then, agriculture so rude an art that it requires no knowledge, no skill, no teaching of observation and experience? No one who knows aught of agriculture would hold such a notion for a moment. Those who know agriculture best know that it is one of the most intricate and difficult of the arts. It is true that those bred to farming are able to succeed upon what the casual observer might consider a low endowment of intelligence and clumsy handicraft, but the casual observer does not know how practically wise in certain directions these undemonstrative men are. They may seem green and stupid when they come to the city; they may fall victims to all the city's lures and snares, but the farmer on his land is like the sailor on his ship—able, competent and effective. The city man, even one bred to the hardest toil, is as much out of place on the farm as is the farmer on the city pavement.

But it may be answered: cannot these men learn farming? Of course they can, in time, if they have the patience, and are contented to strive for the meager rewards of ordinary, small-scale farming. But who is to feed them and their families while they learn? Who is to teach them in a colony of ignoramuses? Who is to meet the losses resulting from bad mistakes and bad seasons?

Of all ways to get city people into agriculture, except they be people of means who can employ skilled assistants, we regard the colony plan the worst. Every farming community can absorb and educate a certain number of

greenhorns by the force of precept and example, and over-the-fence admonitions, and if the new comers have any decent ambition and liking for the life, they may succeed. But to move green city people, in masses, to agricultural undertakings, and isolate them from adjacent farmers, as the plan proposes, is, it seems to us, the most impracticable proposition of the generation.

Co-operative Fruit Handling.

Upon another page of this week's RURAL we give the interesting record of the transactions of the Santa Clara Fruit Exchange for the last year. The RURAL has constantly ministered to the progress of these co-operative efforts and it is very satisfactory to us to tell the story of their quick successes. The following is a sketch of the Campbell Fruit-Grower's Union, frequently mentioned in our columns during the last season. It is one of the large drying associations of Santa Clara county, and its president is F. M. Righter, who is well known to our readers. The following facts are taken from the books of the Union:

The Association began business with the purchase of a drying ground and plant located at Campbell station, on the S. P. C. R. R., to which they added some acres of land by subsequent purchase. The books show the following facts:

INVESTMENTS.

17 acres land,	
10 h. p. steam engine,	
18 h. p. " boiler,	
2 canning house prune dippers,	\$12,725 00
Scales and trucks,	
Building, 80x150, one story,	
2 Jones largest fruit graders @ \$160.....	320 00
1 " No. 8 " " ".....	115 00
1 Hamilton prune grader.....	160 00
1500 orchard boxes @ 15c.....	225 00
24,000 3x8 drying trays @ 35c.....	8,400 00
	\$21,945 00

These are not exact figures, as many of the trays were turned in by stockholders at various prices according to their condition; but they represent the cost of the material, if all new.

In exact figures the actual investment is as follows:

Paid up stock.....	\$18,400 00
Indebtedness on land.....	4,000 00

The plant is not complete, however, as the building will only store, in addition to the room required for machinery and working, about 150 tons of fruit, so that unless they sell very promptly they choke up. The Association has voted to build a fireproof warehouse to hold any surplus which they may wish to store. They propose also some other betterments, and for the next full crop will have to buy several more acres of land. The naked land at that place is worth \$500 per acre. Most associations, of course, can purchase land at a much lower price than that, and require less capital accordingly.

ACREAGE ACCOMMODATED.

The acreage of drying fruits owned by the stockholders of the Union is as follows:

Full bearing, 1893.....	700 acres
Younger orchards.....	522 "

Total 1,222 acres

It is to accommodate the fruit as the younger orchards come in that more land will be required, as well as additional grading machinery, trays, etc., the latter having been taxed rather more than its capacity in 1893, when, on some days, more than 100 tons of green prunes were delivered.

The paid-up stock and indebtedness amounts now to \$18,50 per acre, and it is expected that fully \$25 per acre will be required to furnish a complete plant, and sufficient drying ground. This money will be raised, when required, by sales of additional stock to present members only, and no new members can now be received. The stock can always be sold, however, as it pays regular 7 per cent dividends, free of taxes. The native land at their site is worth \$500 per acre. Had they been able to buy land for \$100 per acre, their present plant would now cost only \$13 per acre of the acreage accommodated.

With the above plant as it is, the Association received, in 1893, 3600 tons of fresh fruit, which made 1043 tons when dried.

EXPENSE OF OPERATION.

The officers and directors of the Association have hitherto received no compensation, except such as might happen to be employed to do special work requiring full time, for which, of course, they were paid. At the last annual meeting, on account of the growth of the business requiring so much time from the directors, a small annual fee was allowed to each. The president should, and probably does, receive some additional compensation. The other expenses are such as would necessarily be incurred in any private concern, except that seven per cent interest on the paid up stock is charged as an item of expense against the fruit handled. This, of course, goes back to the owners of the fruit, who are also the stockholders. No outside capital is admitted, but as some growers who were able to do so made it possible to start the enterprise by taking more shares than their acreage required, their interests are equalized by the dividends on their extra stock.

METHODS.

The grower delivers his fruit to the drier in orchard boxes. It is at once placed on the graders, and when graded he obtains his receipt specifying the variety and weight of each grade. All fruit is graded by machinery, and there can be no complaint. From that time its identity is lost, all being dried together, sold by the Association, and the proceeds distributed. No money—except a very small sum—is raised for working capital. Several thousand dollars are needed to pay pitters and other help at the beginning of the season, but that is repaid from the first sales of fruit, and it is considered cheaper to borrow what is needed, for 60 or 90 days at current rates, than to pay seven per cent on the amount, as capital stock, for the entire year. If fruit sells promptly, the proceeds are, of course, distributed. If it is preferred to hold for a time, and growers need money, it is borrowed by the Association on its general credit, and advances made, at the same interest that the Association pays. The directors determine when sales are to be made, but are of course influenced by the judgment of other stockholders whom they meet daily. All growers receive precisely the same prices for the same grades of fruit, and this is the average price of all the sales of the year for fruit of the same grade. When sales are made through a commission house, the commission agent does not ordinarily handle the money, but the Association ships to the purchaser, collects the money and pays the commission man. Receipts are given for green tons, and settlement made on the same basis. A certain amount, believed to be sufficient, is charged against the fruit to cover depreciation of plant, wear and tear, insurance and some other expenses. For 1893 this charge was \$1 per green ton, which, in that year, gave the Association \$3600, which leaves them, often paying other charges, a sum sufficient to put the plant in rather better condition than at the beginning of the season.

From an Independent Standpoint.

When State Government began in California it was a time of liberal notions and large ways. There was no smaller money than the two-bit piece, and even that was viewed with fine scorn as too small for the consideration of any self-respecting gentleman. To demand or to accept small change was a reproach, and to be exact and prudent in money matters was to be sordid and mean. This spirit was reflected in the provision made for payment of public officers; and though times are sadly changed, we still pay our constables, sheriffs, county clerks, members of legislature, and other functionaries about double the worth of the service as measured by ordinary business rules. And since one form of extravagance breeds another, we make appropriations of public money for miscellaneous purposes with the same open-handed recklessness. If anybody suggests a bonus for any alleged public purpose, be it the culture of mulberry worms or some other equally large and beneficent project, straightway the thing is done—done, too, after the style of Monte Cristo. If anybody questions the wisdom of such largess, somebody else gets up and asks if this be not California? Then there is wild applause from the back benches—from those who pay no taxes—and the thing goes through. Thus we have "commissions" for useless purposes, supported bountifully out of the public treasury; thus we build palaces at a dozen different places for the royal entertainment at public cost of our incompetent and vicious classes, and incidentally for the benefit of particular localities. And all this costs a big pile of money each year which somebody has to provide.

In this connection, Judge John Currey of Solano county, who, as the owner of a big farm, has a heavy annual tax bill to pay, has been making a few figures. He finds that:

At the last session of our State Legislature there was appropriated for the support of the State Government for the two fiscal years beginning with the first day of July, 1893, the sum of eight millions four hundred and twenty-five thousand dollars, or four millions two hundred and twelve thousand and five hundred dollars for each of said fiscal years. It is impracticable to set forth in detail here the items in full of the entire sum of the appropriations. The following are some of them, namely:

For insane asylums.....	\$1,510,000
For care and support of feeble-minded children.....	198,000
For care, support and maintenance of the deaf, dumb and blind.....	160,000
For the maintenance of prisons and prisoners.....	600,000
For maintenance of State reformatories.....	475,000
For maintenance of the National Guard.....	352,360
For State printing.....	250,000
For State Fair.....	40,000
For district agricultural fairs.....	192,500
For Mining Bureau.....	50,000
For State Library.....	55,000
For State Board of Horticulture.....	30,000
For State Board of Viticulture.....	30,000

These specified sums constitute less than half the whole amount of the appropriations by about \$300,000.

Four million and a quarter of dollars per year is a lot of money to spend for the government of a State of 1,300,000 population; and this does not include the charges of municipal and county government, which call for twice as much more. It is, indeed, too much; it is more than is necessary; it is more than the people can stand in these times. The burden falls chiefly upon the producing classes, for it is a gross fact that, by one form or another of dishonest concealment, the personal wealth of the State—the wealth concentrated in the cities—very largely escapes. It is the land which cannot be hidden away from the assessor, which cannot be concealed under a false oath, that pays the bulk of this great annual bill of taxes. As to the remedy, Judge Currey says:

By electing to the next Legislature capable and honest men, whose minds are imbued with the gravity of the situation of the wearied and worn-out tax-payers of the country, and who appreciate the necessity of a radical change for the better—men who have the material interests of the people at heart; and also by electing some well-known citizen Governor of the State, whose intelligence and integrity is all alive to the condition in which the tax-payers, and especially the tillers of the soil, find themselves under the existing oppressive system of appropriations and taxation. Let us be sure we have a Governor of ample capacity to comprehend and realize the necessity of governmental reform in State affairs and who has a firmness commensurate with his convictions. With such a Legislature and Governor acting in harmony, relief would come, followed by prosperity.

This is the solution, and there is no other. If we choose careless, incompetent and corrupt men for the business of law-making and administration, our State treasury will continue to be "worked" for the profit of frauds and follies and their promoters, and our tax-payers will continue to groan.

Much of the corruption of our politics—State, county and municipal—is due to the extravagant salaries paid to all classes of officials. If the official salary of the shrievalty of a county be four thousand dollars per year, and if the actual value of the service to be rendered be fifteen hundred dollars per year, then it is as certain as the sun that the difference between fifteen hundred and four thousand dollars, or a good part of it, will be expended to

get elected to the post. It is an open secret—if, indeed, it be a secret at all—that the semi-annual campaign funds, county and State, are made up, not by those who want to see right principles rule, but by those who make profit out of public appropriations or by public employment. And the size of each campaign fund—that is, the amount of money used in cajoling and corrupting voters and thus in debasing our political life—usually corresponds in exact ratio with the excessive allowances in the forms of salaries and fees given to public officials. If we were to pay our officials what the work they do is worth, and no more, there would be less hurrahing and brass-banding and bribing and more integrity and efficiency in our public service.

In this view the matter is one of morals as well as one of economics; and it is really the more important part of it, for, poor as the country is at this time, it can better afford to be robbed than to be corrupted. No public injustice in the form of taxation, no matter how heavy the burden, can be comparable to that deeper injury which follows the degradation of political life and character.

For the ordinary partisan, personal and local considerations in connection with the official service of the State the RURAL cares not at all. It is a matter of small concern whether our next Governor be a Populist, a Republican, or a Democrat; whether he be a doctor, a farmer, a merchant, or a lawyer; whether his home be in San Diego, in San Francisco, or in Shasta. But it is of real importance that he be a man of conscience, of trained capacity, a devoted son of California, and identified with her genuine interests. It has been a long time since we had such a Governor—so long that if we do not soon get another there is danger that even the tradition may die. It is high time for the selection of somebody upon considerations of moral, intellectual and practical fitness for the place. Something of this sentiment seems, happily, to be in the public mind, for all the names mentioned in connection with the nominations—with perhaps a single exception—are outside of the self-elected political class. It is, indeed, a sign of better things to see the public turning to men like Gen. Chipman of Tehama county—to men connected with our broad industrial affairs rather than with the interests of professional and mercenary politics. A man of this stamp—no matter who he may be or which party names him—would redeem the Governor's office from the disrespect into which it has fallen and make it what it ought to be—a high potentiality in our political and material life.

We are, it seems, to have a long campaign this year. The Republicans will hold their convention at Sacramento on the 17th of June. The dates of the Democratic and Populist conventions have not yet been fixed, but it is certain that the Republican candidates will not be allowed to go long unmatched.

When the RURAL went to press last week, the Coxey army had ended its parade through the streets of Washington and its leaders had just been arrested for forcing an entrance into the grounds and attempting to hold a meeting upon the steps of the Capitol. The interest of the week has centered about the courtroom in which Coxey and his lieutenants—Browne and Jones—have been on trial, charged with misdemeanor under the special statute which prohibits trespass on the Capitol grounds. There was, of course, no criminal act in the ordinary sense and the proceedings simmered down to a judicial inquiry as to whether or not Coxey and his aids violated the order to "keep off the grass." There has been much dispute as to the course of Coxey's progress from the sidewalk to the steps, and a multitude of witnesses, including many congressional dignitaries, have been called to testify; and as a result, it has been gravely determined by a jury that the defendants did walk on the grass, a judgment which makes them liable to fine or imprisonment or both, in the discretion of the court, the highest punishment provided being a fine of \$200 each and imprisonment for 120 days. Sentence has not yet been passed and will not be until two weeks hence, and only then in case special processes for release of the defendants fail of success. In the meantime, they are out on bail making much of the "martyrdom" gained by these doings.

There has been a sad want of common sense in the treatment of this whole matter at Washington. Coxey should have been allowed to go, like any other citizen, before Congress or before a committee and present his petition. This privilege is allowed to all sorts of lobbyists, and Coxey had as good a right as any of them. Furthermore, there would have been an end of the matter. But instead of this, he was permitted to go just far enough to make a sensation and not far enough to give it time to explode. He has been arrested on a frivolous and absurd charge and convicted on general principles; and now has leave to pose as a martyr. It is all very unnecessary, very foolish and

very harmful, because it gives fresh notoriety and even a kind of dignity to the crank leader of a crank movement.

In the meantime Coxey's army is encamped within the Washington city limits, living upon the alms of curiosity and pity; and the several other armies are about where they were a week ago. Frye's men are at Indianapolis; the Boston outfit is somewhere in Connecticut; the Vinnette force is still in San Bernardino county waiting for its leader to get out of jail, where he is serving out a sentence for vagrancy; the Inman army is at Sacramento; the Puget Sound and Oregon armies are scattered in companies of one hundred or less all along the railroad routes from the points of starting to a thousand miles eastward. The only body which shows any energy is Kelly's army, which started from this city and which has been stranded at Des Moines, Iowa, for the past two weeks. Having failed to secure transportation by rail, the men are now building boats in which they propose to pass down the Des Moines and Mississippi rivers and up the Ohio river to Pittsburgh. Grand Master Sovereign of the Knights of Labor has associated himself with Kelly and is helping to hold the men in the field and to move them forward, his latest utterance being an address to all labor unions, asking help for the "movement" as a thing calculated to "promote the interests of united labor in many ways."

Somehow, without any very notable change in the situation one way or another, the movement seems to be on the wane. The public is growing weary of it, and the indifference which has followed active sympathy will soon yield to contempt. It must soon fade out; but the country will be wise if it harkens to the warning thus given it. This monstrously absurd movement could never have risen to the dignity of a national problem if there had not been behind it a body of public discontent based upon the inequalities of our industrial and financial systems. If we heed this warning, if we reform abuses and make things fair and equal in this so-called land of equality, then the movement will have served a good purpose. But if, when the industrial "soldiers" grow tired, as they soon must, of novelty, bombast and beggary—if then we assume that all menace to our institutions is gone, we shall be heedless and foolish indeed. The menace of the Coxey movement lies not in the will or endurance of its ragged soldiers, but in the conditions which made them; and these conditions must be corrected. While they exist the country is in danger, and if allowed to continue they will end in such a catastrophe as the world has never seen.

Cut Worms.

Numerous complaints have reached us this spring of damage done to grape vines and young orchard trees. Portions of the great San Joaquin and Sacramento valleys appear to have suffered most from this pest. A few remarks on their life history, together with suggestions and remedies, kindly furnished us by Alexander Craw, State quarantine official, will be of interest to orchardists.

The cut worms found in our California orchards and vineyards are the larvæ of a noctuid moth, *Agrotin atomaris*, (Smith). The female moth deposits her 200 eggs upon grasses and other low weeds. After the young worms hatch, they feed upon the tender vegetation and roots until the vines or trees are in leaf. By this time the worms are half grown and their attacks are very noticeable, and if not checked will seriously injure the trees or vines. When the worm has completed its growth it measures one and a half inches. It then ceases its destructive work and burrows into the ground, where it forms a hollow cell and there changes to the chrysalis stage, remaining through the summer in its dormant condition.

The climbing habits of this species of cut worm necessitate the placing of some protector or barrier to their reaching the tender growth of the trees or vines. This can be quickly done by tying a narrow band of stout paper about the stem, and smearing it with printers' ink in which a little castor oil has been mixed to keep it from drying so quickly. See that the bands are not allowed to become dry. Two applications a week will keep them in good condition. This should be carefully looked after during the four or five weeks that the worms are the most active.

Cultivating the ground and rolling or dragging it over with a heavy clod-crusher, as close to the trees as possible, will destroy numbers of the worms. The band system, also the searching for and destroying the worms by hand, have been the most satisfactory methods pursued, although more expensive than the use of poison. As a spray, Paris green in the proportion of one pound to two hundred gallons of cold water, if carefully mixed and applied, will be found effective. No soap or ammonia should be added. A few pounds of fresh lime slacked in water and the latter added to the solution will make the Paris green less

soluble and thereby less injurious to the foliage. The solution must be constantly stirred, as the poison is heavy and will settle to the bottom of the tank. In spraying, use fine nozzles, and only apply enough to moisten the leaves without running off. During the early spring the ground should be kept clear of weeds, so as to starve out the worms before the vines or trees start.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, May 2, 1894, are from official sources, and are furnished by the U. S. Weather Bureau expressly for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total rainfall for the week.	Total seasonal rainfall to date.	Total seasonal rainfall last year to same date.	Average seasonal rainfall to date.	Maximum temperature for the week.	Minimum temperature for the week.
Yuma.....	2.16	1.36	3.16	102	64	
San Diego.....	4.87	9.29	9.55	64	48	
Los Angeles.....	6.53	26.19	18.00	72	50	
Fresno.....	6.27	11.10	8.66	94	44	
Sacramento.....	14.19	23.72	18.17	88	48	
San Francisco.....	16.60	21.57	23.90	70	46	
Red Bluff.....	19.70	32.03	22.68	92	52	
Eureka.....	62.22	47.27	42.98	51	38	

Crop Condition and Outlook.

Reports from Nearly All Counties.

Following is a synopsis of the crop bulletin for the past week received by Director Barwick, of the State Weather Service, from voluntary observers:

The average temperature during the week ending May 7th was: For San Francisco, 56°; Red Bluff, 70°; Sacramento, 68°; Fresno, 70°; Los Angeles, 60°; and San Diego, 58°. As compared with the normal temperature there was a deficiency of heat at San Francisco of 1°; Los Angeles, 1°, and San Diego, 1°, while Red Bluff and Sacramento had an excess of heat of 5° each and Fresno an excess of 4°. This deficiency of heat in the coast country, along with nightly fogs, has greatly helped hay and other vegetable growth, and is therefore more of a benefit than a detriment. On the other hand the great excess of heat in the great interior valleys of the State, along with the continuous, drying, northerly winds, have had a bad effect on grain and hay. The excessive heat has drawn the moisture so rapidly and thoroughly from the ground that it more than overbalances the good effects of the rains of the previous week. Therefore the grain and hay crop is still in a precarious condition; in fact, almost a total failure in the San Joaquin valley and very far below the average of an ordinary crop in the Sacramento valley. The fruit, berry and hop crop bids fair to be above the average of a good year's crop. A telegram, dated May 7th, from Santa Maria, Santa Barbara county, says: Grain crops promise hay and seed. Summer crops are better, while the frost touched the apricots.

SISKIYOU (Ager).—Grain on summer-fallow still looks well, but rain is still wanted. Highest and lowest temperatures, 88 and 32. (Yreka).—Weather more favorable latter part of week. The hillsides are beginning to show the need of rain, and unless it comes soon, outside pasture will be short. Highest and lowest temperatures, 81 and 24.

SHASTA.—Crop prospects improved since the rain, although the north winds blew for a week afterward. Thinning peaches begun; the crop will be a heavy one. In fact, all fruit crops will give a large yield. Highest and lowest temperatures, 86 and 52.

HUMBOLDT (Eureka).—Owing to continued cold winds, the weather has not been favorable to the growing crops. Frost on the 2d did some injury to fruit, especially cherries, pears and prunes. Grain looks well, but warm weather is needed to stimulate growth. The apple crop promises an exceedingly large one, and with warmer weather the barley crop will be large. (Hydesville).—Rain of the latter part of April very beneficial to all crops. The cool nights do not seem to have done any damage. Highest and lowest temperatures, 62 and 33.

LAKE (Upper Lake).—The land was thoroughly soaked by the rains in the latter part of April and now good crops of grain and hay are assured, while without the rain hardly any grain would have been cut in this end of the county. Trees and vines have taken a new start. Some hay on the uplands was too far advanced to be much helped by the rain. Alfalfa will be ready to cut in another week. Highest and lowest temperatures, 74 and 35.

MENDOCINO (Ukiah).—Nice growing weather, but the hay and grain crops will be below the average. Fruit prospects are excellent. Highest and lowest temperatures, 84 and 35.

SONOMA (Cloverdale).—Volunteer hay and alfalfa are being cut and make only a fair crop. Grain has improved very much since the rain and will make a fair crop of hay. Fruit is dropping some, but plenty will be left on the trees to make a good crop. Highest and lowest temperatures, 88 and 46.

(Santa Rosa).—There has been a vast improvement this week in the crop prospects all over the county. The rains of the previous week were extremely beneficial. The hay crop will not be as large as usual, but will be much better than was thought several weeks ago. The grain fields and orchards are in splendid condition and the prospects for all kinds of fruits are most promising. The orchards and vineyards are now in first-class condition.

CONTRA COSTA (Pacheco).—Frost on Tuesday, Wednesday and Thursday mornings did no damage. The rain helped orchards materially, while grain and hay received but slight benefits. Weather hot on the uplands. Fruit and nuts have in general set well in Ygnacio and San Ramon valleys.

ALAMEDA (Pleasanton).—Crop prospects continue quite good in this vicinity, and rain has not been needed as badly as in other portions of the State, and for that reason crops are not in such a precarious condition. Highest and lowest temperatures, 90 and 35 deg.

TEHAMA (Red Bluff).—No rain, though it is badly needed. The

north winds, while not violent, are rapidly drying up nearly everything. Vegetables and small fruits are plentiful. Fruit crop all right yet. Crickets have put in an appearance in considerable numbers. Highest and lowest temperatures, 85 and 49 deg.

BUTTE (Chico).—Crops are beginning to feel the effects of another week of drying winds, which has almost destroyed the beneficial effects of the last rains, but still a fair crop is expected. Fruit is good in quality and quantity. (Gridley).—Crop prospects still fair, but rain soon will do considerable good. Fruit crop will give a large yield. Highest and lowest temperatures, 94 and 56 deg.

GLENN (Willows).—Wheat and barley in good land are looking well. Fruit and vines a full crop and in good condition. Highest and lowest temperatures, 81 and 49 deg.

YUBA (Wheatland).—Wind still from the north, and if it continues a few more days the outcome will no longer be in doubt as far as the grain crop is concerned. Some farmers are already thinking of cutting it for hay. All kinds of fruits and hops are apparently doing well. Highest and lowest temperatures, 93 and 45 deg.

PLACER (Newcastle).—Early cherries coming into market, also strawberries in great quantities. Thinning the peach crop has begun. The hay crop is so short that ranchers are not cutting. Highest and lowest temperatures, 85 and 42 deg.

EL DORADO (Georgetown).—Crops of all kinds are looking remarkably well. The fruit crop is especially fine. Highest and lowest temperatures, 76 and 33 deg.

AMADOR (Olea).—Dry weather continues. Summer-fallow grain growing well. Winter-sown, without more rain, will be light, and farmers are now cutting it. Highest and lowest temperatures, 83 and 46 deg.

SACRAMENTO (Sacramento).—The drying northerly winds have blown continually for the past week and have drawn most of the moisture out of the ground that was left by the last rains. All crops are coming forward very fast. Berries and cherries are rapidly ripening and will be a good crop. Plums of all varieties prove to be a very heavy crop, and are growing quite fast and will be early. The highest and lowest Weather Bureau temperatures, 88 and 48 deg.

YOLO (Winters).—The north winds have been a detriment to crops and have about obliterated the good effects of the late rains in April. Grain will be light, while the fruit prospects continue good. Highest and lowest temperatures, 85 and 58 deg. (Dunnigan).—Winter-sown grain is very short, but with a couple of weeks of cool southerly breezes, summer fallowed land would probably yield more than half a crop.

SANTA CLARA (Santa Clara).—Alfalfa harvest begun. In some fields, particularly along the river bottoms, the crop is a heavy one. From various reports as to the condition of the crop, some are favorable and others unfavorable for a good yield. As a rule, however, the crop will be a light one.

SOLANO (Vacaville).—The crops are about in the same condition as last report, which means short yield of hay and grain and large crops generally of fruits and berries.

NAPA (Yountville).—Grapes looking well and good prospects for a large yield. Grain is not looking nor doing well. Fruit prospects good. Highest and lowest temperatures, 90 and 48 deg.

SAN JOAQUIN (Stockton).—The cool weather has somewhat improved the grain prospect. The crop will no doubt be a lighter one than usual. (Bithany).—Everything is drying up very fast and no amount of rain would do any good. The rain for the April storm was but .06 of an inch. We are now having north winds and sultry weather.

STANISLAUS (Turlock).—All the early wheat is heading out and an occasional field looks pretty good. There are more fields of early wheat that will make grain (if it does not turn off too warm) than would have been thought possible two weeks ago. Highest and lowest temperatures, 91 and 39 deg.

MARIPOSA (Mariposa).—Grain and grass very much improved since the rains, but will probably be below the average. The prospects in the higher foothills have been badly injured by the frosts of April 27 h and 28 h; at least three-quarters of the crops were injured, the greatest injury being to apples. Highest and lowest temperatures, 73 and 35 deg.

MERCED (Los Banos).—Weather not quite as windy as the previous week. Warm days and cool nights; hotter day gave a temperature of 80 deg. Grain inside canal on irrigated land looking well. Fruit coming on in good shape. Strawberries have been ripe for several weeks and are finer than usual. Grape vines are well loaded.

MADERA (Madera).—No rain and condition of the grain crop remains unchanged. The grub worms have destroyed one-third of first crop of grapes. The first crop of alfalfa hay is being cut. Early grain nearly ready for haying.

KINGS (Hanford).—Highest and lowest temperatures, 89 and 56 deg., with clear weather entire week.

FRESNO (Fresno).—Highest and lowest Weather Bureau temperatures, 91 and 43 deg. (Huron).—In the Summit Lake country, 15 miles northeast of Huron, grain will be almost a total failure, and but very little will be cut for grain. The Pleasant Valley country, 14 miles west of this place, will be a total failure; there will not even be any grain cut for hay. The Pulverdara country, eight miles southwest of Huron, total failure in grain and hay. In the Centura country, 12 miles northwest of Huron, grain crop a total failure, and this Huron country will raise nothing at all. Highest and lowest temperatures, 100 and 55 deg. (Fowler).—Most of the dry-sown wheat has been sold for sheep feed. Worms have done great damage to many vineyards, more especially on low, sandy ground. Fruit trees are looking fine, with prospects of an abundant yield. (Sanger).—Grain drying fast, much of it not fit for hay. (Easton).—Weather favorable for vineyard growth where they were not eaten by cutworms; a full crop is now promised, but many vineyards are still leafless. Fruit trees are in full bearing and prospects are very good. Wheat farmers will have a little hay.

TULARE (Tulare).—Grain outlook poor, except in isolated places or where irrigated. Hay crop not as plentiful as at first supposed, there not being water enough to irrigate alfalfa, and large quantities are pastured off, and with no water to irrigate will make the other cuttings short. Apricots in some localities will be short. A good many are falling from the trees, as also are prunes. Peaches will be a good crop. Grapes, so far, are looking well. All vegetation is quite late. Highest and lowest temperatures, 96 and 38 deg. (Visalia).—All kinds of fruit doing well, while most all other crops are drying up. Highest and lowest temperatures, 86 and 41 deg.

KERN (Rosamond).—Wheat and barley going back, and from present prospects will not be half a crop, cut and harvested. Fruits doing well. Highest and lowest temperatures, 86 and 44 deg.

SAN LUIS OBISPO (Arroyo Grande).—Beans on sandy upland are coming up well; those in the bottom land, where irrigation is carried on, are not yet planted, but will be the coming week. The cool and foggy weather is favorable for barley. Haying is begun in places, and the crop is very light. Highest and lowest temperatures, 82 and 45 deg. (San Luis Obispo).—The cool weather is very beneficial to all crops and pastures. Beans, corn and potatoes are now all planted. On bottom lands an average crop is expected as the land is generally in good order. Fruit looks very promising. The southerly fogs keep our pastures growing, so dairies that are not overstocked are doing quite well. Hay-making has commenced and half a crop is expected. Highest temperature, 80 deg.

LOS ANGELES (Neenach).—Rainfall April 27th, .12 of an inch, succeeded by northwest gales. Crops greatly damaged and few farmers in the valley will raise more than feed and seed. Highest and lowest temperatures, 84 and 37. (Colegrove).—Hay crop being harvested and is turning out quite satisfactory; will average well to the acre and quality excellent. All deciduous fruits doing well. Melons growing finely, as are also corn and pumpkins. (Glendora).—Hay harvest begun; quality good, but crop not more than half the average. Fruit prospects good, apricots being thinned. (Near Pomona).—Foggy nights and mornings have had good effect on hay and grain that ten days ago seemed worthless; a fair hay crop will be cut. The plum, prune and apricot crops are extra large ones. Highest and lowest temperatures, 90 and 38.

SAN DIEGO (San Diego).—Dry, cool weather continues, especially

in the nights, which are very cool. Harvesting has begun, but hay is very short, much of it mere stubble, and will not be cut at all. Prospects for fruit remain excellent. Highest and lowest temperatures, 70 and 51.

Notice to Crop Correspondents.

As a great many reports are not received until after 8 P. M. Monday night, they are too late to be used, and I hope those at a distance, and in fact all, will try and have their reports reach Sacramento not later than Monday noon—even Sunday night would be a good time to reach their destination—and I also hope that the reporters will not weary in well-doing, but continue promptly throughout the season, as the weekly bulletins are being called for from all portions of the State as well as numerous points in the East, and therefore the fuller they are, the better they represent the crop conditions and our State.

Fruit Crops and Markets.

From the Bulletin of the State Fruit Exchange, Wednesday, 9th inst.

We wish to warn all that the conditions which will determine the value of our fruit crop are not yet made up, and that no information that could yet be obtained by anybody would make transactions in fruit of the coming crop much better than a gamble.

Cherries.—Reports from the principal shipping districts, including Solano, Yolo, Alameda, Santa Clara and Santa Cruz counties, show great unevenness—some orchards heavy and others light in the same district. Our reports indicate that they average better in Alameda county than elsewhere. As stated last week it will be a question of carrying qualities. Those which reach Eastern market in good shape are likely to bring good prices.

Apricots.—Also very uneven, the general average appearing to be, as stated last week, a heavy crop except on low lands where the frosts have injured them severely. Buyers offer \$20 in some counties to \$30 in others.

Peaches.—With a few exceptions reported a heavy crop. In some frosty districts they have been hurt. Chinamen in Tulare county offer \$17.50 per ton on the tree. Orchards have been sold in that county from \$40 to \$130 per acre for fruit on four-year-old trees.

Pears.—Bartlett almost universally reported heavy. Winter Nelis very uneven.

Prunes.—We can hear of no considerable district which promises even a fair crop. In a few localities correspondents are more cheerful, but these are mostly in the later districts where the abundant settings have not yet had a fair chance to drop. In Napa county \$35 per ton is reported as offered. In Santa Clara county we have heard reports of much higher offerings, but they are unverified, above \$50. Other plums are variously reported.

Grapes.—Too early yet even for a guess. In Fresno county the outworm has been very destructive to the young shoots in some localities, which seems likely to result in a much larger proportion than usual of second crop.

Eastern prospects.—Our correspondents this week agree in reporting the estimate of damage to crops from frost as exaggerated, except in the Southern States, where fruit was further advanced to receive the cold wave. There is every prospect now for a large apple crop, which is the more probable from the good rest which the orchards had last year. California Peaches, however, now seem likely to have a clear field until the New Jersey Peaches come in—usually in the latter part of August.

MARKETS.

All dried fruits, except possibly raisins, are so nearly out of first hands in this State that growers have no longer much interest in quotations. The Eastern market has temporarily fallen off in demand for Prunes and Raisins, but stocks are well cleaned up, and there is expected a firm and advancing market till the new crop comes in. We quote carload lots f. o. b. California:

Raisins, a crown loose, per hundred.....	\$2.05 Sacks.
" 3-crown " " " " " " " " " " " "	2 55 "
" 3-crown London Layers per box.....	.80
Prunes, four sizes or ungraded 80's.....	6.00 Sacks.

The Coyote Scalp Bounty.

SACRAMENTO, April 26.—The legality of the Coyote Act, providing for the payment by the State of a bounty of \$5 for each coyote scalp, is to be tested in the courts. The State Board of Examiners, after allowing scalp claims to the amount of \$187,465, refused some months ago to allow any more, pending the determination of the legality of the act.

Since the State has stopped paying the bounty \$129,000 of claims have accumulated in the office of the Board of Examiners. One of those whose claims remain unallowed is J. W. Ingram of Kern county. His claim is for \$365 for seventy-three scalps of coyotes killed in that county in 1893. He made a demand on Controller Colgan that he draw his warrant for the amount on the State Treasury, payable out of the general fund. The Controller refused. To compel him, Ingram by his attorneys, instituted mandamus proceedings before Judge Catlin this afternoon. In this manner the legality of the act will be decided. Judge Catlin will hear the matter May 11th.

Small Yellow Corn the Hardier.

TO THE EDITOR:—P. S. Corwine Willis recollects when his neighbors, one and all, planted the large white corn, when a poor stand made it necessary to send away for seed with which to replant. It came—small, compact, yellow ears, and was planted along with the white corn already "hand high;" and when the most severe of drouths known to that region had high ruined all; when the added calamity of "chintz bugs" had winged their way; then it was found that the replants of yellow corn had made the best corn. The result is that "little yellor" has ever since grown in public favor thereabouts, and so it is his choice now.

Containing a large per cent of oil, it outweighs white corn; is considered "too heating" for horse feed in summer, but does well mixed; is good any way for pigs or poultry.

To those writing Mr. Willis, thinking he meant Egyptian or Kaffir corn, he has replied by letter, and, further, here adds that he has not had any experience with such.

PRIVATE TRY.

Campbell, Cal., May 6, 1894.

[We may add that the letter by Private Try, on corn, on another page of this issue, refers to Indian corn, or maize, and not to any of the large sorghum family.—EDS.]

National Crop Conditions.

WASHINGTON, May 8.—The Weather Bureau, in its report of weather crop conditions for the week ended May 7th, says the week was warm and the weather conditions favorable for growing crops in all sections of the country east of the Rocky mountains. There is ample moisture in the spring wheat region, and in the States of Missouri valley. There is a slight deficiency in the rainfall in portions of Nebraska, Kansas and western Texas.

FRUIT MARKETING.

The Outlook for Good Fruit Prices.

Within the last thirty days the prices of all varieties of canned and dried fruits have advanced very materially. The demand, especially from the East, has been unusually heavy, while the supply has proved to be inadequate. The advance in prices has ranged from fifteen to sixty per cent, according to variety, and is still advancing.

The reason for this sudden and material advance is twofold. The fruit crop in all the main fruit-producing States in the East is this year almost a total failure from late and heavy frosts. The supply of California fruit, which was believed to be very large even by the dealers themselves, has proved to be much smaller than the packers and jobbers anticipated, and is now practically cleaned out. It would be impossible now to fill a large order for any one variety of canned goods, even by combining the resources of all the packing and jobbing houses in San Francisco.

There is no doubt but that the present comparatively high prices will rule until the coming crop of California fruit is packed and put on the market. At present the prospect is that California will have this year the largest crop of fruit she has ever produced. It is true that in certain sections the frost has done some injury to peaches, pears and prunes, and that in other sections the cutworm has played havoc with the vineyards, yet these losses will be more than compensated for in the increased area of the orchards and vineyards that will this year come into bearing.

This State will this year supply three-fourths of all the fruit that will be canned and dried in the United States. Prices ought to rule accordingly. Last year choice canned goods were sold at prices that did not pay for the packing, not to speak of the cost of the fruit itself. This year not only the orchardist ought to be able to sell his fruit at a respectable feature, but the packers and jobbers ought to be satisfied with the prices they receive.

In another week all damage from late frosts will be passed, and by the middle of May orchardists can estimate very closely as to the amount of their fruit crop. Unless the condition of things changes very materially, the man who this year has a ten-acre orchard of bearing peach, prune, pear or apricot trees will be pretty well satisfied with his property, and unless he holds out for too high prices, and thus cuts his own throat, he will receive a return for his crop that will more than compensate for the low prices that have governed the fruit market in times passed.

This week a RURAL PRESS reporter interviewed a number of leading packers and jobbers as to the outlook for fruit, and their ideas will be of interest to many of our readers.

A member of the Cutting Packing Company thought the condition of things was very peculiar. The price of fruit lately has changed very materially. From being extremely low a few weeks ago it has jumped to a high price already, and the high mark has not been reached yet. No one can tell how high prices for fruit will reach. The raise commenced just before the frost which destroyed the Eastern crop. When the demand set in from Eastern buyers, who fairly tumbled over each other in their eagerness to buy up the market, every one thought there was a big supply of California fruit on hand, but in a few days it was discovered that the supply was much smaller than was thought, and prices jumped still higher. Our supply is about exhausted, and in a few days will be entirely so.

Wm. Haas, of Haas Brothers, said that in the last three weeks the prices of canned goods had advanced very materially and unexpectedly. The demand from Eastern buyers has been heavy, and recently over 30,000 cases of canned goods have been shipped east of the Rockies, and probably 15 carloads of dried fruit. The next crop of California fruit will bring full prices and will pay both the producer and the packer. The price of raisins will not vary so much, because the production of raisins has increased so much in this State, with no corresponding increase in the demand.

H. Levi & Co. said the Eastern crop was a dead failure. As a consequence in the last three weeks Eastern buyers have been ordering California goods at an unheard-of rate. This house could not begin to fill its orders. It neither had the goods nor could it obtain any from other houses. A few months ago we were selling goods at less than the cost of packing, but now prices are way up and going higher. Even dried peaches have advanced over 50 per cent. In fact, this house thinks that the dried fruit will be more profitable and be in more demand than canned fruit. If the orchardists this year do not hold out for too high prices they will receive a good return and make money.

Code, Elfelt & Co. say they could not now fill a large order for any one variety of canned fruit. Last year they packed over 60,000 cases; this year they will pack much more. Within a few days peaches have advanced from \$1.15 to \$1.50 a dozen, and other goods in proportion. They will probably go still higher. Orders are still pouring in from the East for peaches, pears, plums. Last week they were unable to fill an order for 7000 cases. If orchardists do not get their ideas too high this year and hold out for prices that the packers cannot pay they will make lots of money.

The King-Morse Company say their stock of fruit is practically cleaned out. In the last month the failure of the Eastern crop from frost has made a boom in California prices, and Eastern orders have been piling in. New York, Delaware, New Jersey, Maryland, Michigan, Tennessee, Kentucky, Missouri—in fact, in all the States where fruit is grown to any large extent late frosts have played havoc in the orchards. It is estimated that the East will not pro-

duce one-tenth of an average crop this year. California has got to supply the deficiency. She is able to do it, and the thousands of acres of trees that will come into bearing this year will increase very materially the amount of our fruit over that grown in former years. Both orchardists and packers ought to be satisfied this year, and unless the two get to quarreling over prices all hands will make money.

Porter Brothers deal exclusively in dried fruits. They say that prices in this commodity have advanced, all varieties considered, at least 25 per cent, while pitted plums, peaches and nectarines have advanced at least 50 per cent in the last 60 days. The top notch has not been reached yet. The advance will continue until the present stock has been entirely exhausted. In five years there has not been a time when the stock of dried fruit on hand was as light as it is at present. Prices opened very low, then came the Eastern frosts, and when it was discovered what a small stock of fruit California had on hand—presto! the condition of things changed immediately, and prices went up with a rush. Even raisins have advanced 25 per cent. The crop of California fruit will be large this year. Of course the frost has done us some injury, especially in the San Joaquin. For instance about Hanford the peaches and apricots got nipped considerably. A day or two ago we had a telephone from Fresno that many of the vineyards about there had been injured very severely by cutworms that have taken off every leaf and bud, and made the vineyards look as bare as they did in January. Of course they will sprout out again, but still the mischief has been done. Still, this will not interfere with the total amount of the crop. If prices go up to any considerable extent it will greatly lessen the demand for our fruit. The main consumers of our fruit have been the poorer classes in the East. They control the demand. As long as the price of fruit is low they use it, but the minute it gets beyond a certain figure it is beyond their reach. Our fruit for a year has been very low. Yet this is the reason it has met with such a sale, and this explains why now there is so little of it left. Two weeks or perhaps a week more will absolutely clean us out. Consequently, if the price of fruit advances much higher it is a question whether in the end our fruitmen will reap as large a profit on account of decreased sales as they would if prices remained a little lower, and fruit could be sold at a figure that placed it within the means of the laboring and poorer classes.

A Leading Dealer's Views

Washington Porter of Chicago, the well-known dealer in California fruits, is in the city. He says the outlook is very gratifying for large sales of our fruits in the East this season at good prices.

He reports that a very large percentage of the peach crop of New Jersey, Delaware and Maryland has been killed by frost. In southern Illinois the pear crop has been pretty seriously injured. There are almost no pears, or peaches either. Illinois has not been doing well on pears for several years.

The improved fruit-train service to Chicago this season will be a great help to California growers and shippers, as it will effect a long-desired reduction in time of transportation and insure regularity in the arrival of the fruit at its destination.

Trains of ventilated fruit cars will be made up at Sacramento and will go through to Chicago in 120 hours, or five days. The rate of \$1.20 per 100 pounds remains unchanged.

Refrigerator cars may be loaded at any shipping point, and trains of such cars will be made up at Truckee, where ice will be supplied. These trains will go through to Chicago in about seven days. The cost for icing is additional to the regular fruit-train freight rate. This is paid to the Refrigerator Car Company and is from \$125 a car upward, according to the length of the journey and the location of the shipping point.

Another Statement About Freight Service.

The Southern Pacific officials in the freight department are sanguine that the fruit shipments this year, from present indications, will exceed those of any previous season, and they estimate the probable crop at 20,000 carloads.

Rates for the coming season will be as follows:

For deciduous fruits in carloads of a minimum weight of ten tons to a car, from San Jose, Sacramento, San Francisco and Sixteenth street, Oakland, in ventilated cars, freight train service, \$1.25 per 100 pounds. For refrigerator cars, passenger service, with a minimum of twelve tons to a car, it is expected that the rates for the cars will be about \$125 to \$175 each, according to the place of shipment.

The Southern Pacific is also perfecting arrangements to secure rapid transit from California to Chicago, and it is expected that it will be able to make the run with the passenger service in 120 hours and with the freight service in 192 hours, and possibly in 168. The estimate is from Sacramento.

Sacramento Will Join the State Exchange.

A general meeting of fruit-growers of Sacramento county held at Sacramento on Friday, adopted the following resolution:

"Resolved, That the fruit-growers of Sacramento county recognize the fact that the present methods of marketing fruit, whether fresh or dried, are needlessly uncertain and expensive, inadequate to properly handle our increasing product economically, and unsatisfactory to all.

"That existing abuses can only be remedied by such organization of the growers as will make them financially independent, place the direction of sales and the collection of proceeds in the hands of immediate local representatives

of growers, and matters affecting our general policy in those of a State organization representing all branches of the industry.

"That the California Fruit Exchange, as the regularly authorized representative of all branches of the fruit industry, is entitled to and must have our moral and material support. It must be supplied with the necessary capital and the necessary income, and it is our duty and our interest to provide our part of both, and we will do so.

"That this convention will appoint a permanent committee of five, with power to add to this number, whose duty it shall be to promote and secure the establishment of as many local organizations as may be necessary and convenient in this county, all working together under the leadership of the State Exchange, and to procure from the growers of the county our proper share of subscriptions to the capital stock of the State Exchange."

The chair appointed one from each section represented in the meeting, as follows: W. H. Nelms of Elk Grove; C. Taylor of Florin; A. B. Murphy, Perkins; Joseph Studarus, Mayhews, and E. Booth, Cosumnes.

Vacaville Will Co-operate.

A mass meeting of the fruit-growers of Vaca valley was held at Vacaville on Saturday, April 28th, and was addressed by B. F. Walton, president, and E. F. Adams, manager, of the California Fruit Exchange, after which the following resolutions were unanimously adopted:

1. That this meeting endorse the plans of organization proposed by the California Fruit Exchange, and pledge it our support, to which end we will ask those present to subscribe to its capital stock in accordance with their ability and interests.

2. That an incorporated company be formed to prepare for market and sell upon a co-operative basis the dried fruit of this vicinity, working in connection with the State Exchange.

3. That five growers be selected by this meeting to serve as directors of such association, who shall determine the amount of capital stock required, organize the company, sell the stock, and take charge, as directors, of the business of the company for the first year.

In accordance with the resolutions, the following directors were elected for the ensuing year: W. J. Dobbins, H. E. Jewett, Wash. Tucker, H. A. Loud, S. Ashley.

The fruit-growers of Vaca valley are enthusiastic in support of the movement, and will subscribe liberally to the maintenance of the State and local Exchange.

Vacaville, May 2, 1894

FLORIST AND GARDENER.

Celery Growing in the Cotton States.

An account by Dr. J. S. Newman of Georgia, in the *American Agriculturist*, of celery growing at the South can easily be adapted to California conditions. We quote as follows:

An erroneous impression prevails as to the practicability and profit of growing celery in the Southern States. Among my early and pleasant recollections in connection with the home garden in Virginia was the delicious celery served throughout the winter. I well remember that celery invariably followed English peas as a second crop. The plants were grown in the tobacco bed, of which they were the exclusive occupants after the tobacco plants were drawn for transplanting. As I remember, no difficulty was experienced in securing plants from the tobacco bed, because the latter was prepared by burning a moist plot of virgin soil. The seeds grown with the tobacco seed were simply pressed into the soil, without being covered with any implement.

So common has been the impression that plants cannot be grown in the South that celery is rarely seen in a Southern garden. Indeed, very few avail themselves of our superior climatic conditions, and have winter gardens. From the latitude of Atlanta south the garden should be a source of daily supply of vegetables, which should include a bed of choice celery. For the last two winters my garden has furnished a continuous supply of celery, such as would put that shipped from Kalamazoo to the blush. Indeed all who ate it admitted that they had never before tasted any so crisp and delicately flavored.

For an early spring crop the seed may be sown in the fall and transplanted in February. The plant is perfectly hardy in this latitude. Indeed it resisted a temperature of two degrees below zero without protection in January, 1893. Where the seed plants stood last summer there are thousands of volunteer plants ready for transplanting. Seed for the fall and winter crop may be sown at intervals from February to May, in moist and partly shaded situations. Pulverize the surface thoroughly, sow the seed in drills and either cover by sifting fine dark mold over them, or, better, pass a heavy roller over the seed rows without covering. Neither moist land nor irrigation is necessary for success in celery culture in the South. Any fertile soil well supplied with humus will grow good celery. Moist land and irrigation are desirable, but not necessary. The cultivators of dry, sandy soils in the cotton States plant their corn in the "water-furrow" to increase its drought and heat-resisting power. A similar practice renders celery culture upon uplands, without irrigation, practicable and profitable.

In garden culture, trench a spade's depth and mix well-rotted manure and a complete commercial fertilizer, applied at the rate of a thousand pounds per acre, with the soil and subsoil in the bottom of the trench without filling it. Do this two weeks before setting the plants. Draw the plants carefully from the seed-bed, with as much soil adhering to the fibrous roots as possible, cut off the large leaves just above the end of the bud leaf, and transplant into the trenches, placing the plants six inches apart in the drill,

in single row. If the soil is very strong, plant two rows in each trench, placing the plants in one row, opposite the spaces between those in the other, the rows four to six inches apart. This reduces the cost of blanching. If the plants become crowded in the seed-bed, thin them, and either plant in permanent rows or transplant to other beds, giving each plant four square inches of surface. This will cause a stocky growth and increase the root surface, very much improving the plants for the final transplanting into the fields. The transplanting for the winter crop may be done from June to August whenever there is a suitable season, or by watering in the plants if the soil is dry. If the weather is very dry and warm after transplanting, a light covering of leafy branches, laid across the trenches, will afford temporary protection, and will gradually admit the sun by the shrinking of the leaves of the bush until the plants are sufficiently established to dispense with protection. In transplanting and cultivating, care must be exercised to prevent covering the bed with soil. The cultivation consists in keeping the surface of the soil between the rows (which should be five feet apart) and around the plants thoroughly pulverized, until the weather becomes sufficiently cool to commence handling preparatory to earthing up for blanching.

A crop of bunch beans may be grown between the rows of celery—one row in the center—which will repay the cost of cultivation. Preparatory to handling, loosen the soil between the rows, in order that it may be readily drawn against the plants by hand, the first step in earthing up. The stems are straightened up and held in that position by pressing the soil against them on all sides. The subsequent work of earthing up is done with the plow, and should be done at intervals until the entire plant is covered before severe freezing weather. The most desirable varieties of celery for the South are Half Dwarf for fall and early winter use and the Giant Pascal for late winter and early spring.

THE STOCK YARD.

The Gain from a Pure-Bred Sire.

As pure blood was never cheaper than now it seems timely to urge again the advantage of possessing and using it. The following from a Farmers' Institute address by Prof. Thomas Shaw of Minnesota conveys the advantages of good blood in a plain, straightforward and striking manner:

The use of a pure-bred sire that is also good individually secures transmission to the progeny of a desirable form, of good digestive and assimilative properties and of quality, and it enables the individual to transform animals of common or mixed breeding (or that may be said to be possessed of no breeding) into animals that are just as good for all practical uses as though they were pure bred and recorded in a herd book, a flock book or a stud book. And this transformation can be made in four or five generations where a careful choice of sires is made and the feeding and care are what they ought to be.

The use of a well-chosen pure-bred sire will secure the transmission of desirable forms to the progeny. Take for illustration the typical beef-producing sire. He should be compact in form, broad and level and well fleshed on the back, roundly and deeply sprung in the ribs, broad and full and deep in the chest, wide at the withers, full in the crops and in both fore and hind flanks. He should possess large heart girths, a wide and level loin, a long and broad and deep quarter, a full twist and thigh, and should stand firmly on short legs of medium bone. His head should be medium in size, since by what is known as the law of correlation the parts of the system that we do not see may be judged by those that we do see. Hence if the head were unduly coarse or strong we have an indication of undue strength of bone. Choose a sire of such a form and purely bred for generations and we will assuredly get an approximation in form in the progeny, no matter what the nature of the dam, if of common stock or mixed breeding.

But digestion and assimilation of a certain kind are just as certainly transmitted as form, though this fact is too little recognized by those who keep stock. The power in pure-bred sires to transmit the qualities just named is at least equally important with the power which they possess to transmit properties which relate to form. That such properties are transmitted may easily be illustrated in the following manner: Take a pure-bred Hereford calf individually good in form, and put him in a box-stall at the day of birth and keep him there until twelve months old. Take an animal of common or mixed breeding, equal in age and typical of the class from which he has been chosen. Put him also in a box-stall alongside of the former, and keep him there until twelve months old. Feed both calves liberally and on the same kinds of food, and weigh them at the end of the year. It will be found that the Hereford has quite left the common calf in the race. It could not be otherwise. The Hereford came of an ancestry which possessed those digestive and assimilative properties which enabled him to so digest food that he turned it into meat; hence he grew rapidly and matured early. The other calf came of an ancestry that did not grow so rapidly nor mature so early because they possessed digestion of another character. In both instances digestive properties were inherited by the calves in consonance with those possessed by the parents; hence the difference in the results.

Now suppose the manner of feeding were reversed. Put both calves on a half ration from the first. The common calf would by the end of one year have left the other in the race. Why? Because the Hereford came of an ancestry with tendencies to mature early, but on the condition that food be plentifully supplied. These tendencies of the system were inherited in the calf. When the supplies of food were withheld the equilibrium of the system

became so disturbed that the Hereford calf could not accommodate itself to these changed conditions, and so did badly. On the other hand the common calf inherited from its ancestors the ability to stand privation and to live on short supplies. There was less disturbance therefore to the system of the common calf by being put upon the short rations; hence he would lead in the race at the end of twelve months. In this we have an explanation of much of the ill-doing of pure-breds when taken into common herds and subjected to like treatment with the ill-cared-for stock that is kept upon these farms. It is therefore apparent that pure-bred sires will work harm rather than good in such herds and flocks unless the care and food given to the progeny are in consonance with the laws of their being which they have inherited through the changed conditions of breeding.

By the use of a pure-bred sire of good individuality quality will be secured in the progeny. Quality may be defined as the capacity to do well. Its presence is indicated by certain "handling" properties, as they are termed. These handling properties are indicative of digestion and assimilation of a high order when they are present in a marked degree. Their presence is cognizant to the sense of touch more than to that of sight. Place the tips of the fingers on any part covered with flesh, and press gently. The flesh will yield softly to the sense of touch and its elasticity will spring it back again to its normal condition when the fingers are removed, if quality is present. Place the front of the hand flat upon the ribs and move it back and forth, up or down, and the skin will sway gently and readily beneath such a movement, if quality is there. So, too, where it is present the hand can easily fill itself by grasping the hide over the ribs; the hair will be plentiful and it will be soft and mossy to the sense of touch. Where quality is absent the covering of the body will be more or less bare, the skin will elude the grasp of the hand over the ribs by clinging closely to them, and it will not readily vibrate or tremble in response to lateral pressure. The hair will be harsh and coarse and it will have a dry appearance, the opposite to what is meant by looking sleek and glossy. These indications of quality are to some extent modified by the food given and the season of the year, but they are sufficiently marked to enable a good judge to know when quality is present or absent. Quality is the outcome of good digestion. Good digestion insures good circulation. Good circulation nourishes the parts of the system farthest from the centers of digestion, and in this way we have the guarantee that the parts of the system nearer to the centers of digestion are well nourished; that is to say, we have the guarantee that all parts of the system are well sustained.

The presence of quality, therefore, is a sure indication of ability to turn to good account the food fed. An animal which does not possess it is not possessed of the ability to make the best use of the food given; hence it will make an unprofitable feeder. The farmer, therefore, who does not understand quality in a pure-bred male for beef uses is not yet fitted to choose one. Nor is any one not skilled in this direction able to choose animals for feeding to the best advantage. In choosing a sire for meat-making purposes it is exceedingly important that he should be possessed of quality.

By judiciously using a pure-bred sire common animals can be made as good in a few generations as though purely bred and recorded. How can this be? The pure-bred sire is capable of transmitting qualities such as he possesses himself in a much greater degree than the animal with which he is mated. He is prepotent, for the reason principally that he is purely bred, and the dam is not prepotent because she is of mixed breeding. His prepotency will be strong as he is purely bred, and her prepotency will be weak in proportion as her breeding is mixed. Mixed breeding, therefore, on the part of the dam is no barrier in the way of improvement.

Practical men have noticed that the progeny of the first cross from a pure-bred sire and a common dam bears a much closer resemblance in all properties to the sire than to the dam. It could not be otherwise. The sire is potent to effect change because of his breeding. The dam is not potent to resist change because of her lack of breeding. Let the difference in blood properties between the sire and dam be represented by 100. The progeny will not possess simply 50 per cent of the blood properties of the sire and 50 per cent of the blood properties of the dam, but they will possess as many more than 50 per cent of the blood properties of the sire as his power to effect change exceeds the power of the dam to resist change. Suppose that the progeny had inherited 75 per cent of the properties from the sire and 25 per cent of these from the dam; in this we find the explanation why the progeny so much more nearly resemble the sire than the dam. Let a pure-bred sire be chosen again from the same breed. There is now a difference in blood properties of only 25 per cent to bridge over, whereas in the former instance there was a difference of 100 per cent in the blood properties.

The improvement in the second instance cannot, therefore, be so great as in the first instance, but the preponderance of resemblance in all points will be again in favor of the sire. Continue to choose good sires from the same breed and in a few generations of such breeding we will have animals practically as good as though purely bred.

Dishorning Not Cruelty.

A correspondent of the *Country Gentleman* gives the following brisk account of the way a suit against a dishorner went through a New York court:

I have been in receipt of several dozen letters from all parts of the country, and written by men prominent in dairying and agriculture, many of them from men of national fame, and all, with one exception, gave in no unmeasured terms their entire approval of dishorning, and several voluntarily offered to come a long distance to give their testimony as to its advantages. Fortunately, however, I found in Dutchess county men enough who had

practiced dishorning themselves to answer all purposes for the defense, and long before the defense had commenced to examine our witnesses it was evident that the case was won.

The S. P. C. A. had a veterinarian from Brooklyn, who deliberately disregarded truth, and to such an extent as to be hooted out of the court room—a proceeding in which the jury participated—and every other witness brought out for the plaintiff gave in testimony of great value to the defense, and to the discomfiture of the prosecuting attorney. The people produced seven or eight witnesses, two of them veterinarians, others stock drovers, and two were former employees of the defendant, while the defense swore some fifteen, all farmers except two, who were veterinarians, and two or three ex-drovers, all having had more or less experience in dishorning, and all, without exception, advocated the practice as humane to the animals, insuring greater safety to attendants in charge of stock, greater immunity from abortion and less bloody milk. In fact, no one could find any reason for horns, but every reason against them. Less than one-third of the witnesses for the defense were sworn, and nearly 40 were present ready to give their testimony; and every witness came voluntarily, not one having been subpoenaed. Great interest was manifest throughout the trial, there being a large number of representative farmers present, among them several ladies.

The lawyer for the prosecution, in summing up, told the jury that all they need do would be to render the verdict, as the judge knew his business and would give the prisoner at the bar the punishment he deserved, at which one of the jurors spoke out excitedly: "Not by a — sight! The jury will take care of that."

Upon the announcement of the verdict the crowd gave cheer after cheer, and gazed the plaintiff's lawyer until he was glad to get away—not until he had received an invitation, however, from the defendant to come out to the farm on Monday and assist in dishorning some 50 more cows.

Inasmuch as the State of New York employs men, experts, who advocate dishorning from the platforms at institutes and fairs, through the public press, and even issue bulletins on the subject, all paid for by the State, it would seem no more than right that the State should protect the men who follow these teachings.

As the law stands, the S. P. C. A. have it all in their power, and they can trump up a charge of cruelty against some poor unprotected farmer and scare him into paying a heavy fine, where, if the man stood his ground, they would be beaten. Why not agitate this matter thoroughly in the papers and get some action through the legislature?

POULTRY YARD.

My Poultry-Runs.

TO THE EDITOR:—Although at the present time profits from the chicken business are reduced by circumstances until they are almost, if not quite, nil, still I do not think it will be so long. I believe, as I always have, that with care and attention to details we can raise hens with profit, and it was with this belief that, a few weeks ago, I built another small place in which to hatch chickens and to keep them in, for a few months. As my next-door neighbor was so pleased with my arrangement that he has just built a similar and somewhat more extensive place, and as others have said they intended to do likewise, I will describe it.

I first built a platform 30 feet long by 18 inches wide, using some boards I had on hand. At the back I put two 6-inch boards on edge, nailing them to the posts of a fence to support the roof, which was made of a quantity of pear-box covers, short pieces 1x2 inches even used, and a strip 1x2 inches was nailed along the top. I divided the platform into eight small divisions, which gave a space about 3 feet 9 inches by 18 inches for each drove of chickens. Doors were made for each division out of pear-box covers, and a pane of glass 8x10 inches was inserted in each door. I then bought two rolls of wire netting, one of 1-inch netting 2 feet wide (for the bottom) and one of 2-inch mesh 3 feet wide. Part of this I cut into strips 8 feet long, for the division between the runs. Seven-foot posts set 1½ foot in the ground, 8 feet from the platform, supplied the needed support for a top piece 1x4 inches running from these posts to similar ones close to the platform, and a 6-inch strip was put on the ground, to nail the netting to.

On the top of these 1x4 cross pieces I put a strip 1x3, to strengthen the whole, and a similar piece at the rear of the posts. From this last piece to that in front of the "houses" I nailed laths 2½ inches apart, to prevent the hens from flying out. Doors to the runs (which also, of course, had a 6-inch board in front to correspond to the 6-inch board between the divisions) I made of strips 1x2 inches, braced with a similar piece, and covered with netting. Small steel hinges allowed the door to swing. On top of the runs I stretched what remained of the netting and finished with laths. This was done because, although the tops of the fences were 5½ feet from the ground, former experience had proved to me that the hens would fly over. As it is now, no hen or chicken can get out, and no rat or cat can get in.

When all was ready I put two boxes in each little house, just large enough to take a sitting hen comfortably, and I placed my hens there, with one dozen eggs each. More than 12 eggs to the hen I do not approve of. My first intention was to have but one hen sit in each place, but I thought I would try two. As it proved, they gave me very little trouble. When they came off, of course I doubled them up, giving all the chickens hatched by the two hens to one.

Both the houses and the runs are a little small. I should advise that they be made larger by any one who should adopt the general idea.

As a protection from the hot sun I have sewed two

gunny sacks together and shall attach them to the door of each post. A long string of sacks, or, rather, two strings, are laid on top, and I can assure any man that on a hot day these make a very-much-needed protection.

SUGGESTIONS.—Let me add a few general notes. For drinking and feed cups, for sitting hens, I use two tin cans, such as fruit is put up in for sale, fastening them together by a little frame made of four strips of wood; one can is for water, the other is for feed. The advantage of having them fastened together is, that they are not so easily overturned.

For the chickens' water cups I use large tin cans, cut off about 2½ inches from the bottom, with a smaller can just inside, the inner can being filled with sand. By the arrangement they cannot defile the water nor get into it, and, as a matter of fact, it serves the purpose perfectly, just as well as a 75-cent drinking fountain.

Bubach will not kill the larger of the parasites which live on the heads of chickens. Use warm grease, putting three or four drops on the head and neck, not more than that, or it will hurt the chickens.

For the first two days after chickens are hatched, rolled soda crackers, with a little fine sand mixed in, are excellent. They need something to assist in grinding up the food at that early age as well as later. I commence feeding chopped grass when they are about four days old. The first feeding may not be readily eaten, but the second is pounced upon eagerly. Green food is a hen's natural food and they must have it very early in life.

I should have said that that long platform I built rests on common redwood posts laid flat on the ground, and the front is boarded up so that they cannot run underneath. Haywards, Cal. CHAS. P. NETTLETON.

Secure Yards for Chickens.

After trying various kinds of fencing for a yard that will keep in the chicks and keep out everything else, I have settled on poultry netting as combining all the desirable qualities, with few drawbacks. My yard, in which I had as many as 337 chicks of various ages at one time, was 60 feet long by 15 feet wide. It is best to have a foot-wide plank at the bottom all around, as small-sized chicks can get through two-inch poultry netting. Last winter I had no divisions in my yard, so to prevent little chickens from being crowded out and run over by big chicks I had to resort to various devices—small netting runs in front of coops, and some other things. Last winter I had this big yard subdivided into ten yards by fences of cheesecloth tacked to a wide plank at the bottom and to a two-inch wide strip at the top, with a gate made of the cheesecloth tacked on a frame in each division, so that I can easily pass from one to the other. This dividing of broods does away with all necessity of wire-covered runs in front of coops to keep the big chicks from trampling the others, and when chicks get large and the mother hen is taken from them, will prevent overcrowding and consequent smothering. Each small yard is six feet wide by 15 feet long, which is a very good-sized run for from 30 to 40 chicks. Wherever there are chickens there are hawks, and when they catch even one fowl a day they diminish the profits considerably, as the early chickens net me over 50 cents each; so, to prevent their ravages, I had poles about nine feet high from the surface of the ground planted all along through the middle of the yard lengthwise, and strips nailed from one pole to another at the top. Over this ridge I threw twine, which I tied to the top of the netting fence on each side, the twine being about six inches apart, thus forming a kind of netting of twine, shaped like the roof of a house. Of course this did not obstruct the sunshine, but it kept off all hawks. I saw one make two attempts one evening, darting down to catch a chicken, but it struck the twine each time, and I was not again troubled. For a permanent yard one might use light wire. My yard is on the sunny side of a hill, which is all right in dry weather, but when it is wet it is very slippery; so I shall lay a plank walk to my yard, and also a walk in front of each coop, extending the whole length of the yard, being made in short lengths to fit each small yard. The gates, of course, must be opposite each other, so that one can step from one walk to another. These walks not only prevent one from slipping, but keep the feet dry while walking.—Cor. American Agriculturist.

TRACK AND HARM.

A New Turn at Palo Alto.

Had Senator Stanford lived, says the *Breeders' Gazette*, it is doubtful if Dexter Prince would have been taken back to Palo Alto, from which place he was sent several years ago when the Electioneer boom was on. The Senator was a pretty stubborn man when it came to matters connected with the breeding of trotters, as witness his persistence in breeding Thoroughbred mares to Electioneer when it had been fully demonstrated that a much larger percentage of trotters, and of a better quality, were secured when Electioneer was mated with trotting-bred matrons.

With the Senator's death, however, his prejudices lost their potency so far as the management of the breeding farm was concerned, and no better evidence of this could be adduced than the securing of Dexter Prince to take the place of Electioneer. It means also a return to trotting blood and the gradual abandonment of running blood as a factor in the pedigrees of Palo Alto-bred horses. This has been the course pursued on every farm where the Thoroughbred idea at one time had sway and where success has been attained. In its early days Woodburn used the blood of the runner freely in the attempt to breed trotters, but the intelligent management of that farm soon saw that the Thoroughbred road was the wrong one on which to look for trotters, and for the last decade or so

every move has been in the direction of piling up the trotting crosses in the pedigrees of animals bred and getting away from the running strains, which naturally can produce nothing in the way of gait or disposition that is not harmful in the make-up of a trotter. Dexter Prince has in his veins the blood that produced Dexter, Dictator and a host of wonderfully good trotters that have sprung from the last named horse, chief among them being Phallas, Jay-eye-see, Dictator, Direct, Directum, et al.

All the mares with records, and that are by Electioneer, now owned at Palo Alto will be bred to him, which means that such celebrities as Manzanita, 2:16, four-year-old champion of her day and already the producer of 2:30 speed; Ladywell, 2:15; Coral, 2:18½; Hinda Rose, 2:19½; Wildflower, 2:21; Helena, 2:21; Malden, 2:23; Gertrude Russell, 2:23½; Peko, 2:24; Carrie C., 2:24; Aldeana, 2:25; Colma, 2:25½; Memento, 2:25½; Athena, 2:25½; Sweet Rose, 2:25½; Lucynear, 2:27; Emaline, 2:27½; Idlemay, 2:27½; Slight, 2:28; Sonoma, 2:28; Tiny, 2:28½, and half a dozen others in the 2:30 list will do their part toward enhancing the reputation of Dexter Prince as a sire. Of course these mares would make a name for any horse that was not an absolute plug, and in the case of so highly-bred and successful a speed-begetter as Kentucky Prince they will simply add to his renown. It should be remembered that in the above list of Electioneer mares are contained the yearling champion of her day, Hinda Rose, who afterward held the three-year-old record; Wildflower, two-year-old champion; a sister to Palo Alto, champion trotting stallion of his time, and others with credit marks of no mean proportions on the books, so that no matter how great Kentucky Prince is, he is to be afforded a chance such as no other stallion ever had, as the Electioneer mares have already proved themselves producers of trotting speed, and in the case of those with records they are certain to produce the champions of the days to come, provided only that they are bred to at stallion that has speed and the power to transmit it. Both these qualities are possessed by Dexter Prince, and the combination of his blood with that of the developed daughters of Electioneer cannot but be productive of the best results.

SWINE YARD.

The Condition of the Hog Industry.

In view of the improved aspect of the hog business, the following facts, just issued by the Statistician of the Department of Agriculture, are of wide interest:

The percentage of losses of swine is 4.9, against 6.3 per cent last year, and is lower than for any year in ten. This is a significant fact, if taken in connection with its logical cause. Correspondents make frequent mention of the increased care given hogs, resultant from the high ruling price of pork and the low price of grain. Many farmers have turned to the production of pork as the only means of realizing profit on their cereals.

In last year's April report mention was made of feeding wheat to hogs, and there are frequent allusions to this practice in the surplus-wheat States in the present returns. It is probable that this use of wheat has been more generally resorted to than ever before. According to the statement of the Department's agent in Washington, not only is the feeding of wheat a fact, but pork from wheat-fed hogs has a recognized superior quality and brings a better price in the markets of the State.

The following table shows the rates of losses by States:

STATEMENT SHOWING NUMBER OF SWINE IN THE STATES AND TERRITORIES, AND LOSSES FROM DISEASE.

STATES AND TERRITORIES.	Number.	Losses.
		<i>P'ct</i>
Maine.....	79,995	0.8
New Hampshire.....	51,058	3.4
Vermont.....	76,268	1.5
Massachusetts.....	63,895	2.0
Rhode Island.....	15,481	2.7
Connecticut.....	53,736	4.7
New York.....	658,605	2.8
New Jersey.....	182,830	1.4
Pennsylvania.....	1,033,517	2.1
Delaware.....	52,167	1.2
Maryland.....	328,732	2.8
Virginia.....	920,228	3.0
North Carolina.....	1,394,966	6.1
South Carolina.....	767,621	8.5
Georgia.....	1,791,567	7.6
Florida.....	388,074	8.1
Alabama.....	1,514,249	6.9
Mississippi.....	1,577,208	5.8
Louisiana.....	806,168	6.2
Texas.....	2,555,459	4.7
Arkansas.....	1,547,689	8.3
Tennessee.....	1,930,049	7.1
West Virginia.....	407,344	2.2
Kentucky.....	1,794,349	6.9
Ohio.....	2,350,338	3.3
Michigan.....	720,776	1.7
Indiana.....	1,815,638	3.0
Illinois.....	3,422,454	3.9
Wisconsin.....	930,228	3.2
Minnesota.....	668,967	2.0
Iowa.....	5,995,179	4.2
Missouri.....	3,709,517	5.8
Kansas.....	2,249,714	4.5
Nebraska.....	2,089,564	5.6
South Dakota.....	241,643	4.0
North Dakota.....	99,276	1.2
Montana.....	39,388	1.4
Wyoming.....	15,834	1.0
Colorado.....	26,021	1.5
New Mexico.....	27,521	1.0
Arizona.....	19,536	.....
Utah.....	51,850	1.1
Nevada.....	11,590	8.0
Idaho.....	58,725	.....
Washington.....	162,977	2.4
Oregon.....	210,747	1.0
California.....	435,668	1.8
Oklahoma.....	24,158	.....
Total.....	45,206,498	4.9

Brood Sows.—Returns in April, 1893, showed a scarcity of brood sows then on hand. Farmers had sold their

stocks very close to realize the good prices, which in some sections was coupled with a scarcity of corn, making the disposal of stock even more urgent. The price of pork, too, had risen suddenly a short time prior to the time of the report above referred to, and farmers had had no time to prepare for the advance or to recover from its effect. Prices having ruled high since that time, and opportunity having been afforded for the increase of stock, the returns recently made to this office showing such an increase, are in perfect harmony with the natural law of supply and demand. The increase seems to be quite evenly distributed throughout the country, and in only a few sections is there evidence of less than a normal proportion of breeders.

THE FIELD.

United States Farms and Factories.

The inventive genius of America, with its thousands of labor-saving mechanical contrivances, its railroad building, and its marvelous development of electricity, prevent surprise at the fact that the Eleventh Census finds that the factories have more than doubled their capital during the last decade, while the capital invested in farms has increased scarcely one-third. This marked tendency towards more varied industries, and consequently improved home markets, is full of hope for the farmer. There is a further prospect of a reduced agricultural competition in the statement, that while the number of persons directly dependent upon farms for their living has increased only 14 per cent, the aggregate number of employes of factories has increased over 65 per cent, as will be seen below:

TABLE I.—COMPARATIVE GROWTH OF MANUFACTURES. (Dollars and Employes in round millions.)

United States—	1870.	1880.	1890.	1900.	1910.
Factories.....	355,401	253,852	262,148	140,433	123,026
Capital.....	\$6,254	\$2,791	\$2,118	\$1,009	\$633
Employes.....	4	2	2	1	—1
Wages.....	\$2,282	\$947	\$775	\$378	\$236
Materials.....	5,168	3,896	2,488	1,031	655
Products.....	9,370	6,369	4,232	1,835	1,019

The detailed statements concerning the conditions of farming in the last and preceding decades have already been published in these pages, but the items which correspond to those in the table of the comparative growth of manufactures are here produced for comparison by the reader. The statistics in both tables have been compiled by the *American Agriculturist* from the United States census returns:

TABLE II.—COMPARATIVE GROWTH OF AGRICULTURE. (In round millions.)

United States—	1870.	1880.	1890.	1900.	1910.
Farms.....	4.6	4	2	2	1
Capital.....	\$16,979	\$12,104	\$9,096	\$7,104	\$3,639
Persons.....	25	22	15	8	5
Real Estate.....	\$13,276	\$10,197	\$9,262	\$6,645	\$3,271
Machinery.....	494	406	336	246	151
Live Stock.....	2,208	1,500	398	213	111
Products.....	2,460	2,212	2,447	1,500	1,299

It will be noticed that the number of factories was nearly doubled from 1860 to 1870, but that there was practically no increase from 1870 to 1880. During the latter period the number of farms, which had remained nearly stationary during the decade of the Civil War, was doubled, owing to the rapid settlement of the great plains, consequent upon the building of the transcontinental railways. From 1880 to 1890 the number of factories has again rapidly increased, while the number of farms has increased only 14 per cent. The rapid improvements in transportation during the seventies, both on sea and land, led to the settlement and development of vast areas of agricultural lands, not only in the United States, but all over the world. The sudden increase in the farms and farmers since that time is no small factor in the present overproduction of staple grains and the consequent low prices of farm products. As such a one-sided agricultural development is now being counteracted by an increase in other industries, it is to be hoped that the price of factory and farm products to the consumer will more nearly approach the price of factory and farm labor. A better distribution of the benefits of machinery, steam and electric power is needed before agriculture will rise from its depression.

In the census of 1880, the statistics of a number of manufacturing industries were not collected, so that for a proper comparison of 1890 with 1880, these industries should be deducted from the returns for 1890, as they are in the following table, which shows, in round millions, the increase in manufactures and the percentage of increase as given by the Commission of Labor in charge of the completion of the Eleventh Census. These statistics do not include those of mining and quarrying.

TABLE III.—INCREASE OF MANUFACTURES, 1880 TO 1890. (Dollars in round millions. Only industries of 1880 included.)

United States—	1880.	1890.	Increase.
Factories.....	322,624	262,148	27 per cent.
Capital.....	\$6,134	\$2,790	120 "
Employes.....	4,476,091	2,700,732	65 "
Wages.....	\$2,171	\$939	131 "
Materials.....	5,018	3,895	47 "
Products.....	9,014	5,349	69 "

The finished products of the factories are thus seen to be four times as valuable as the raw materials produced by the farms. The raw materials, when they reach the factories, cost twice as much as the raw materials produced on the farms. The products of mines and quarries are also used by the factories, and these, with cost of transportation charges, partly manufactured materials and imports, make up the difference. If the products of the factories are worth four times the products of the farms, very much labor must have been expended on the raw materials, and the farmers will gladly feed more such laborers, if the prices of farm products will warrant the use of more factory products. None of our farmers are living so luxuriously that they will be displeased at a growth of manufacturing industry, which should bring them more of such home comforts as are made in factories.—*American Agriculturist*.

HORTICULTURE.

Santa Clara Fruit Exchange.

Full Accounts of the Year's Work.

In some lines a pioneer effort in co-operative fruit marketing and generally cited as an example for efforts in that direction, stands the Santa Clara Fruit Exchange. In view of this fact, and because so many fruit regions are contemplating similar undertakings, we shall give space to a full report of the annual meeting, which was held May 5th in the big warehouse owned by the Exchange in San Jose. Philo Hersey, president of the Exchange, occupied the chair and presented the following annual report:

To the Stockholders of the Santa Clara County Fruit Exchange: GENTLEMEN—Immediately following the last annual meeting, the Board of Directors resolved upon the erection of a warehouse. You convene to-day in the structure which is the result of their decision. It is of brick, two stories, 14-inch wall, 16x60 feet. An annex of iron, 30x40, two stories, for pressing and packing, was added. Machinery and furniture were supplied, the total cost being as follows:

Four and seven-eighths acres of land, \$5779.75; building, annex, tank house, well and pump, \$8891.23; machinery, tools, scales, boxes and fixtures, \$2343.21; furniture, safe, etc., \$457.20; side track from railroad, \$360.35. Total, \$17,831.74; previously expended in organization, etc., \$1496.20. Total expenditures from beginning, \$19,237.94.

To meet this expenditure there is a stock subscription of 2006 shares, of the par value of \$20,060, on which \$16,537.50 has been paid, leaving an unpaid balance on stock of \$3522.50. This leaves an unpaid indebtedness of \$2700.44, which it is expected to liquidate from the unpaid subscriptions of stock.

The volume of business done during the season is \$415,024.55.

FRUIT RECEIPTS.

Prunes received in warehouse, 4,605,808 lbs.; apricots, 683,622 lbs.; peaches, unpeeled, 473,990 lbs.; peaches, peeled, 19,412 lbs.; Silver prunes, 179,574 lbs.; Egg plums, 35,886 lbs.; pitted plums, 6632 lbs.; German prunes, 46,931 lbs.; Hungarian prunes, 8780 lbs.; plums, mixed, 29,601 lbs.; nectarines, 3576 lbs.; pears, 24,283 lbs.; apples, 2410 lbs.; cherries, 1328 lbs.; raisins, 10,540 lbs.; almonds, 5200 lbs. Total, 6,137,485 lbs.

This fruit has all been sold and shipped. There has also been sold fruit not delivered in warehouse for Campbell Fruit Union: prunes, 855,804 lbs.; apricots, 316,401 lbs.; peaches, 229,922 lbs. For West Side Fruit Association: prunes, 181,216 lbs.; making a total of 7,720,828 lbs.

A fixed charge of \$1.50 per ton on peaches and apricots and \$2 on prunes, for receiving, storing, sacking, grading and shipping, was made, and a charge of 5 per cent for selling. This latter charge covers eastern brokerage, telegraphing, express, telephone, stationery, office expenses, such as salaries, etc. The total of these charges are: warehouse, \$5828.91; commission, \$20,350.87; storage of fruit, \$35. Total, \$26,214.78. Commission and brokerage paid, \$13,310.50. Total, \$12,904.28.

This leaves a balance of \$12,904.28 to meet the pay roll and expenses in and about the warehouse, office expenses, etc.

EXPENSES.

Warehouse pay roll, \$5222.49; fuel, \$260.75; salary of president and manager, \$750; traveling expenses, \$20.85; salary of book-keeper, \$600; salary of E. F. Adams, \$538; salary of C. A. Hall, \$150; expense, publishing and forwarding bulletins, \$577.59; stationery, \$190.90; telegraph and telephone, \$456.50; insurance on stock, 298 50. Total, \$9065.58.

PRICES.

In the beginning of the season apricots sought buyers in vain at 7½ cents for No. 4s, 8 cents No. 3s, 9 cents No. 2s, and 10 cents No. 1s, owing to the fact that Vacaville and Fresno 'cots of No. 4 grade were selling at 6 to 7 cents. These latter being sold, No. 4s sold readily at 7½ to 7½ cents, till all were gone. The better grades then sold freely at their respective prices till the bulk of the product was gone, when prices advanced to 9 to 12 cents, and the crop was closed out at these prices.

The early market for choice peaches was 5½ cents. They soon advanced to 6 cents and later to 7 cents, and finally closed at 8 cents. Peeled peaches sold generally for 12 cents. Pears varied in price from 4 to 6½ cents. Silver prunes varied in price, according to quality, both in size and color, from 4 to 6½ cents. Egg plums, always an unsatisfactory commodity to deal in, sold from 2 to 4 cents. Fallenburg prunes, 3 to 4 cents. Pitted plums averaged 6 cents. Almonds, 9 to 10½ cents. Cherries were without value.

The prune, our chief product and that on which we mainly depend and have greatest need for a steady, reliable market, early became a gamble. It is said that while dealers and speculators who had none to sell, and no other purpose than speculation or depression, were manipulating the market, a few were sold at prices varying from 6 to 4½ cents. The market settled upon 5 cents for the four sizes, and while it did not go above that price, it did not go below 4½ cents on the coast till after the middle of November, when the market became blocked with consigned goods. From that time the principal business of the Exchange and dealers here was answering dispatches calling for quotations. It is currently reported that over 400 carloads were consigned from the coast, arriving in the market at a time when the jobbers and retailers had a full supply from previous shipments. For four months there was no satisfactory condition of the market or activity in the coast trade. The Exchange, however, sold out its entire receipts, in-

cluding 756,796 lbs. of 120s and upwards for 4.7 cents average for all sizes. Deducting the 120s, which are "out" product, and the average for all sizes is 5.1 cents. This to your manager seems a very satisfactory result when considering the general conditions of the market. If we were possessed of foresight we could at all times be intelligently on guard; but experience is our only as well as our best teacher, and in the fruit business it does not make a reliable prophet.

LOSSES.

With one exception we have met with no loss. W. F. Beck & Co., with whom we had a mutual account aggregating \$19,153.70, failed in our debt \$4,481.64, on which we may expect but a small, if any, percentage. This account is charged to profit and loss, and will so reduce the profits from warehouse and selling charges that no rebate from these sources can at present be made, if ever. No other losses have occurred except such as sometimes occur from claims arising from shrinkage, which have been next to nothing.

CONSIGNMENTS.

At the time of our greatest pressure for room two cars of prunes and one car of peaches were forwarded with orders to sell in transit. They were not sold till arrival, and then at prices less than obtainable here by at least half a cent. Of mixed goods of different kinds and qualities, nine cars were consigned. Some of these cars contained 60 lots to the car, and sale in any other way seemed impossible. Five of these cars sold satisfactorily, and parts of others fairly well, and some of the lots very unsatisfactorily. Consigning is contrary to our business policy. The great bulk of all business done in this way will result in disappointment, dissatisfaction and loss. Charges of cartage, insurance, storage, interest on freight and advances, extra shrinkage, weighing, etc., increase the cost of selling from two to four per cent, and not one instance in ten will the goods net a price that can be obtained here. These goods are sold for what they will bring, whether there is a demand or not. The seller is only part owner, and is always sure of his part, while the grower or consignor takes what is left. Four hundred carloads of prunes were consigned from this coast, nearly all after November 10th, when the market had been filled by f. o. b. sales. It is entirely safe to say that these consignments brought \$60,000 less than they would if held and sold before shipment, and forced an equal loss on goods held here. But few consign the second time. Still about an equal number each year try the gamble. If no existing organization can be trusted, and buyers now here cannot save you and us from this annual loss, let us make an organization or introduce buyers that will. If your Exchange had been perfection in this its first year, it would have been a miracle by accident and not divine inspiration. It is not perfect, but with experience no greater than it now has, it can be of the greatest utility and benefit. With generous and hearty support it will grow in advantage till it becomes your strength and salvation. It has done your business without capital. It could not make promised advances. It has, however, established the fact that we can get along without help, even in the most trying financial conditions. After having distributed nearly \$400,000, we have now to our credit in bank \$19,885.88, which will be paid to you as fast as balances can be made and checks drawn.

Wisdom and unity of action will alone insure our common benefit in this common industry. No man is big enough to continue alone without being weak and weakening others. We must pull together and make our work so strong, extensive and complete as to have the greatest and best institution of its kind in existence, being always just to others as well as faithful to ourselves.

We have now a State organization known as the California Fruit Exchange. This organization is working in the interest of all parts of the State and in all lines of its fruit production. It will save individual organizations, in its line of work, much annual expenditure, and deserves, and I trust will receive, the hearty support and co-operation of all local organizations and individual producers. Such action should be taken by this meeting as to place in the board of directors the proper authority to effect such relations and grant such support as in their judgment it shall need and deserve. The bulletins furnished by the Exchange last year will be prepared by the State Exchange this year.

PHILO HERSEY, President.

TREASURER'S REPORT.

Antonio Friant, cashier of the Union Savings Bank, reports that the institution as treasurer had received during the year \$16,436.65, and there had been drawn out \$15,360.47, leaving a balance on hand of \$1076.18.

Colonel Hersey called attention to the fact that \$1375 covered the entire incidental expenses of the Exchange for one year—\$600 for a bookkeeper, \$750 for expenses of manager and \$25 for trips to and from San Francisco. Colonel Hersey also stated that he had never been at a meeting in his life but what the railroad generally got the worst of it, and generally very justly. He wished to say, however, that during the past year the company had been uniformly courteous, had rebated every cent charged for switching freight from depot to depot, virtually amounting to a contribution of \$600.

Manager Adams suggested that a committee of six be appointed by the chair to confer with a committee from the State Fruit Exchange regarding the drawing up of a form of contract acceptable to all minor exchanges.

The following named were placed in nomination for directors: F. M. Righter, C. A. Bean, H. G. Keesling, C. F. Wyman, Philo Hersey, M. W. Dixon, C. P. Bailey, Noah Rogers, Captain Dunne, A. Maguire, J. Z. Zuck, N. C. Curtis, S. P. Saunders, D. C. Vestal, W. H. Wright, E. L. Dawson, J. P. Grant and J. E. Gordon.

The afternoon session was devoted to election of directors, and resulted as follows: Philo Hersey, F. M. Righter, C. A. Bean, H. G. Keesling, C. F. Wyman, Noah Rogers, W. H. Wright, E. L. Dawson and H. C. Morrill.

What a Prominent Hotel Steward Says of the Olive-Oil Problem.

James J. N. Heeane, chief steward of the Palmer House, Chicago, has written the following letter to E. E. Goodrich, the well-known olive producer of El Quito, Santa Clara county. It will interest all who are studying the pure olive-oil question:

Your letter of March 28th received; also, later on, the samples of olive oil mentioned. Referring to your letter, I desire to say that it is my belief that California oil can not just yet compete in prices with such oils as are imported by New York houses at the present date. The imported oils are notoriously adulterated. Labor in the oil-producing districts of the European continent is fully two-thirds less expensive than in America.

Those who handle olive oils in New York and Chicago look for a 33 per cent profit on a case of oil, and are not satisfied with less. The manipulators in Europe know this, and prepare an oil by more or less copious adulteration to suit the views of the dealers on this side. The evidence of absolute purity of the olive oil made in California is overwhelming. You gentlemen in California must ever remember that you are not competing with a pure olive oil, but with a so-called pure (?) olive oil. It follows that our people must be educated to realize the great difference between pure oil from the olive plants' fruit and the spurious oil so generally found on sale in Chicago and New York before much can be accomplished in breaking down the difficulties in the way of successfully placing the California olive oil where it should be—in the first rank and the peer of any. Legislation is urgently needed in this special instance. Until some action of a character prohibiting the delivery of an adulterated article of olive oil is taken by the Federal Government we will be almost powerless to break down the trade in this article, as in all others of a like character.

The prices you quote for your product, with freight added, are unquestionably such as, in the present education of consumers and dealers, are prohibitory. I do not think the prices high, understanding thoroughly the cultivation of olive trees, the great variety of them, the process of extraction of the oil from the berries, the care, cleanliness and expensive character of modern machinery applied in the California mills, the patience needed in waiting for realization of efforts made, and the extreme youth of the industry. I am more than satisfied that the day is not far distant when, all difficulties being surmounted, the olive-growing industry of California will stand out a Hercules in a land of Herculean relatives, the strongest brother of the family.

The samples you sent me have been closely examined, and shown by me to interested and intelligent men in the hotel trade, all of whom agree that they have never before seen anything equal to them in the markets. All the samples are fine oils. Some one or two possess extremely delicate and wonderfully fine character. The peculiar sweetness of pure olive oil is well marked in all. The oil from the "Corregiole" seems to obtain my favor, and I can not say why. The oil from the Grossage stands nearest to Corregiole, I think, while the samples from the Mission olive are much the same in general character, and show, I believe, a tendency to average equally. There is a slight difference in the shades of color present, no doubt owing to the degree of ripening attained before gathering the crop.

Referring to the statement that a pure olive oil is put on the Chicago and New York markets at \$6.50 per case, I would, if told this by a representative, be strongly disinclined to believe it. Grades of imported oils, so-called "Pure (?) Olive Oil," are laid down in New York at \$8 and \$8.50 per case, but are sold at different prices. If they are imported by wine merchants with their lots of wine from France, Spain, or other wine-growing countries, they are generally imported at the lowest figure, and, if sold to the large purchasers of wine, are shaded considerably. The price to a customer is \$9.50 to \$10.50; to a non-customer, \$12. What the customer saves on a few cases of oil he no doubt pays on his wines. The freight per 100 pounds from New York to Chicago is 75 or 98 cents a case; 3½ cents per bottle, if quarts. That oils are laid down at low prices is in evidence from several wholesale grocers' lists now before me, but only one out of ten firms use the word pure. That one is S. Rae & Co., Lehigh, whose oil is now quoted in Chicago at \$2.40 and \$2.50 per gallon, in bulk, in two-gallon cans or five-gallon cans; 24 pints by Motlet are quoted at \$9.59 a case. In every other instance the words "fine olive oil," "finest olive oil," "fine sublime olive oil," "finest sublime olive oil," are used, but "pure olive oil," never. Here is a list by Dumounon, who uses "the finest" as a title:

Cases, quarts (12), in Chicago	\$8.50
" pints (24), "	9.50
" half-pints (24), "	5.90
5-gallon tins, per gallon	2.75
3-gallon " "	2.80
1-gallon " "	2.85

These prices include bottles, corks, labels, cases, tins, wrappings, freight, etc. Now if a merchant wants 33 per cent profit on the cash price, or about \$2.75, how much did the oil cost to produce, how much for case, bottles, labels, corks, etc.?

Oil, "Pure Olive Oil," cannot be made in the Mediterranean at a lower figure, I am informed, than \$1.75 per gallon. Can the low price be accounted for in any other way than by adulteration? I think not. It is therefore clearly impossible to lay down pure olive oil in New York or Chicago at \$6.50 per case of 24 pints.

I do not consider that you have troubled me; rather added to my zeal and interest in the subject of olives and olive oil than anything else. If I can be of any use to you or the gentlemen composing the Olive-Growers' Association, it will give me pleasure to find it out.

FRIENDS who ask how to kill "squash bugs" should give us a little description or a specimen of the pest. The insect may be a biter or a sucker, and the remedy should be "accordin'."

SUMMER CROPS.

Corn Growing Under Arid Conditions.

TO THE EDITOR:—While the description of success in the Scioto valley of Ohio might prove interesting, I think the system as followed in southwest Kansas, at an altitude of 2000 feet and over above sea level, would be more applicable to present requirements. I will contrast the methods and results of several parties.

The father of the B.'s had much experience in Kansas, and so had F., while V. had several times "gone through drouth" in an adjacent State. All of them, with their eyes open, settled in southwest Kansas. V. and F. turned sod to a depth of three inches, because it was said to be sufficient. So did the B.'s; but, mind you, right after the first plow followed a second, turning as much more. This they called "subsoiling." They were the only newcomers taking so much pains, and while that season (a most bountiful one) rewarded F. and V. and others with good sod corn, sorghum and millet, as much and more was the share of the B.'s, who also had much of other good things, such as sweet potatoes, rating 400 bushels to the acre.

Coming late, I put up with planting sorghum, to the end as described in my last letter, which was sent you before I saw your own article and the University's account of sorghum experiments. I would call special attention to the relative showing of Early Amber when cut in the dough, as set forth in University trial described in the RURAL of April 28th.

The following season I turned my former cane patch into a garden, and successfully so, too. Having rented F.'s "breaking," which had been given ordinary plowing, simply the turning back of sod, nicely pulverized but shallow (something done by V. and others), I decided to break it to a depth of six to eight inches. I turned up virgin soil, dry since the season before. It came up cloddy, unpromising, inviting the "guying" which came from several passing by who had already done their planting and at leisure. Every few furrows I harrowed and dragged, pulverizing it more readily than I thought possible at first sight. The observant must have noted that clods brought up, though apparently dry, immediately upon being exposed to air are disposed to "slack" and crumble, but if allowed to dry are made hard. Having finished, harrowed and dragged till level, I took the team and same plow, laid off the rows, going once around, left a dead furrow, so to speak; another round in same, the plow went deeper than the original plowing, the loose dirt falling back, of course, running up the middle of said furrow, having the corn drilled (say two grains to every 16 inches to insure a stand), I dropped by hand right after me in the fresh, loose earth. Turning, I covered by turning from each side (the two rounds having provided such, see?), formed a wee ridge over the corn, and that, too, below general surface. Taking a light drag, something narrow, dragging it lengthwise of furrow, I smoothed directly over seed planted (no danger of unduly packing dry ground), for had I dragged the whole surface instead of pressing such, the result would have been to leave it loose and to fill in above with clods gathered and drawn in from each side of furrow. Remember I laid off, re-plowed, planted, covered, pressed and finished each row before beginning another, and had put two grains in a hill 16 inches apart, in rows 3½ feet apart. Having so planted the whole and dragged all over, as you must have divined already, the seed was in deep, the pulverized ground rose, not in narrow or sharp, loose ridges, easily dried out, but rounding between rows and thoroughly harrowed and packed down by dragging. It was planted so deep it was slow in coming up, and I thinned out one-third of it. I harrowed and cultivated, in the evening and morning, of course, working down the said rounding ridges. All was brought to a level, still leaving the corn's roots uniformly deep and mulching about the stalk. During hot winds the blades twisted up like whip-lashes, but came out all right.

The B.'s had their land in thorough tilths, and though not going to the trouble I did in planting, they gave it diligent culture, made corn and to sell. V.'s corn had dried up and vanished with the hot winds, at which time I could not pull up a hill of mine, so deeply rooted was it (8 to 10 inches), but digging it up I could "ball" the dirt at its roots, which could not have been done with same dirt at time of planting. The few showers had evaporated, or at any rate had not wet to any considerable debt. It weathered the season, made fair corn, demonstrating what could be done. So, too, with my melons, similarly planted.

In planting and caring for a young orchard, I would act accordingly, and why not? The land I have just spoken of was rolling and drier than the average of red or mulatto soils thereabouts. I believe the same amount of labor and care would produce equal or even better results in portions of this State.

Campbell, Cal.

PRIVATE FRY.

Melon Growing with Irrigation.

The interviewer of the *Ranch* gives us a chapter on melon growing in the arid region of Washington which may be suggestive to some of our beginners. The grower is Capt. W. Stevens, and the following is the narrative:

Mr. Stevens, when do you plow your land for the melon crop? Was the first question direct. Always early in the spring. I do not like fall plowing on this land; it becomes too compact for my purpose.

How deep do you plow? I aim to get down about eight inches. Then I harrow well and mark off for the irrigating laterals.

How far apart do you make these ditches? Ten feet for both kinds of melons.

When do you turn on the water? As soon as the ditches are laid off.

How near to the ditches do you place your rows of

melons? I plant two feet from either side of the ditches. This gives me two rows four feet apart, while between the laterals they are six feet apart. Sometimes I mark off the laterals a little nearer to each other for the small melons.

You plant in hills, I suppose? Yes, but I do not find it necessary to mark for them, as it makes no particular difference if the hills are not uniform as to distance. I intend to have them five to six feet apart.

How many seeds do you plant in a hill? Oh, I put in six to ten seeds and then thin to one plant to the hill. I have tried all sorts of numbers of plants, and have concluded that I get more weight and better melons if only one plant is allowed to grow. I consider this a very important point in growing first-class melons.

How soon after planting do you again irrigate? I watch the growing plants closely. They show when they need water. As long as they are of good color and growing vigorously I let them alone. But at the first indication of thirst I let them have a drink. I let the water run from two to twelve hours, according to the condition of the soil. I want to impress upon melon-growers that too much water is just as bad as too little. You know how it is in a country where rain sometimes falls every day; everything looks well for awhile, but finally growth is interfered with and there is a failure of the crop. While in a season of comparative drouth, when the farmers begin to shake their heads and say, "We are done up for this year; there is no possibility of over half a crop," just then comes along a good, heavy rain and the weak-looking plants revive and grow astonishingly, and in the fall there is an excellent harvest. So it is in the irrigating business. Too much water spoils the crop. Better a little the appearance of a drouth.

As a general rule, how often do you find it best to irrigate? Sometimes once a week; again twice a week. If growing well and ground is moist, do not irrigate; if dry and the plants look thirsty, turn on the water. No rigid rule can be given. The grower must be governed by his own judgment. I did, on one or two occasions, irrigate every day for a while just for the experiment, but the results were unsatisfactory and I got down to once in three days as a general thing. I found that too frequent watering produced the bulk of the roots too near the surface; then when the soil became dry the roots suffered and the crop was light. Still, if I find that by my first day's irrigation I did not get the ground moist enough, the water is again turned on the following day.

When do you plant? From the 20th of April to the 10th of May is about the range of season here. I do not put in my whole crop at once, but aim a little at succession, and I plant by hand, covering with a hoe.

When do you begin cultivating? As a general thing, I do not cultivate at all. Unless ground is grassy or weedy, cultivation is not necessary. I sometimes go over the ground with a hoe and cut out the few weeds that appear, but as yet they cause me little work. The plants will go along all right without the work of cultivating.

Will you tell me something about varieties? I am not posted regarding the many new sorts that the seedsmen advertise. Have found the best watermelon for main crop to be the Johnson's Dixie. Cuban Queen is good also; for early, Ferry's Peerless. These three sorts do me very well. If I want a succession beyond this I get it by planting at different times. The Georgia Rattlesnake I have tried and found it very good. The Cuban is a handsome melon and an excellent shipper, but is hardly as fine as the Peerless or the Dixie. The Rattlesnake is a good shipper also. For cantaloupes I prefer Minnesota Perfection, Jenny Lind and Hackensack. In field culture there is really very little difference in time of ripening, though the catalogues will tell you that there is.

Do you fertilize? So far I have not found it necessary, but I have never attempted more than two successive crops upon the same land.

How do you find the yield? First-class. I have grown twelve tons of marketable watermelons per acre and five tons of small and unsalable melons besides, for hog and cow feed. I lariat my cows in the field and let them help themselves to the unmarketable melons after the best have been taken off. The yield of muskmelons is not so great, but it is enormous.

You have grown some very profitable crops of melons then? Yes; I have realized \$150 per acre, net profit. But I did not do it last year, and do not know that I ever shall again.

AGRICULTURAL ENGINEER.

How To Get Good Roads.

For the last 25 years our National and State Legislatures have been passing special laws in the interest of our so-called "infant industries," but have had but little thought of helping the overburdened farmer.

Whenever a bill for the improvement of our highways has been introduced our capitalists and large property-owners claiming to represent the farmers send petition after petition to the Legislature, begging it not to pass such a bill and burden the overtaxed, hard-working farmer any more. They never mention what a benefit good roads are to the entire State, and especially to the farmers.

In this way they have succeeded from year to year in preventing the passage of the most necessary law.

But, my fellow-farmers may ask me, how can we get those good roads? My answer is, very easy, if only we get the proper legislation.

Another question I may be asked, How can we get the desired legislation? I can only answer, By fighting with words and votes. You may be an advocate of good roads, but you may find the most bitter foe of road improvement in your neighborhood is your life-long friend, your brother or father. They all fear heavy taxation, and tell you the farmers can't afford good roads. They are saving one way and losing twice as much in another. Try to enlist these

neighbors and friends of yours for the cause of highway improvement and a start will be made.

Another foe you will find in the "kickers," the drawbacks and the obstructionists.

All this has got to be overcome before the bright days of prosperity and good roads will dawn upon the great old State of Virginia. The counties must have aid from the State to borrow money at a low rate of interest for a long number of years, or the work cannot be done. Help from the State we shall not get from a Legislature composed as at present. We shall need a majority of devoted friends of the farmer as law-makers, and fewer representatives of money-bags and lawyers.

Now, you farmers' clubs and influential men start the stone rolling before next election day. You will undoubtedly get support from every true friend of agriculture. Don't give up if you are detected at first; you are fighting for the best interest of the farmers and the State, and you will certainly be victorious some day.

That good roads will induce farmers to settle and capitalists to invest can plainly be seen in the valley of Virginia, where the fathers of the nation built that grand boulevard, which still remains a monument to their wisdom and a pattern to the existing generation. If we had good roads, millions would be saved for the farmers and the immigration question would be solved.—Jerome J. Herdt of Virginia, in Good Roads.

CORRESPONDENCE.

Is the Nationalization of Railroads Desirable?

MONTEREY, Cal., May 3, 1894.

TO THE EDITOR:—The possibility of profitable Government ownership of railroads was amply proved in my letter published in your issue of 24th of February. Permit me again a little space to give some of the reasons why such ownership is *desirable* as well as possible. It is desirable, in the first place, because communication between the members of a civilized nation should be as easy and cheap as possible, and not monopolized for private profit.

2d. Because it is a prime function of government to provide such easy and cheap means of communication. The excellence of the old Roman roads, for example, is monumental.

3d. Because to insure this desired end our present system of competition among railroads has proved a failure. Consolidation and unification of management are necessary to economical railroading. If three roads are built to compete for the business one road could carry, the waste of capital, land and labor is immense, and the traffic must ultimately pay all the bill. One road doing the whole business could reduce the rates by nearly two-thirds. Not only is the loss incurred in building and stocking the two superfluous roads a direct waste, but there is also the continuous loss in managing and operating these needless roads, which also must ultimately be borne by the public who patronize the roads. Moreover, trains carrying their full complement of freight or passengers costs very little more than those running with a third thereof. One depot and clerical staff and no advertising bureau would suffice where these two needless roads now require the maintenance of three of each.

4th. Because it is admitted by railroad men that the only remedy for these and kindred evils is in centralization or "pooling." This of course means, in other words, the formation of the most gigantic monopoly the world has ever seen, and such a monopoly is only permissible in the hands of the people's government, to be utilized for the mutual benefit of all, and not for the satisfaction of private greed and rapacity.

5th. Because it is an acknowledged fact that the net returns to a railroad are much the same whether freights and fares are high or low. With very low rates the stimulus to travel and business is so great that the increased traffic about compensates for the reduced rates, while higher rates operate to curtail business. Did Government own the railroads, they would of course run at lowest rates. The latest working example is in the Hungarian zone system, which has proved an eminent success.

6th. Because our present system is utterly un-American in its tendency to build up an oligarchy within this republic—an oligarchy which defies our laws, debauches our politics and derides our institutions, while it encourages the ostentatious luxury and the overbearing insolence of the pampered Dives.

7th. Because the ability of this nation to conduct its own business has been proved in our postal department, where exceedingly low rates have been attained by economical management. When Sir Rowland Hill suggested the reduction of rates in England from an average of 6d to 1d per letter, he was met by the same sneers and ridicule that are showered to-day on the proposal to reduce railroad rates by nationalizing the railroads. Though the English Government experienced a loss for two or three years, the result was that the gross postal revenue *doubled*, while the net revenue remained fully as large.

8th. Because it is more desirable for this Government to own the railroads than for the railroads to own the American Government.

Lastly, co-operation is the idea on which friends of humanity base their hope of progress. The president of the S. P. R. R. left his millions to found a university to promulgate this idea. The nationalization of railroads is simply the realization of this idea on a grand scale.

EDWARD BERWICK.

THE Sonoma *Tribune* says: The vineyardists living near Litton Springs sorely feel the need of a winery in that neighborhood, and they are offering liberal inducements to anyone who is willing to build and operate a wine-cellar in close proximity of their farms and alongside the railroad.

THE HOME CIRCLE.

The Glove and the Lions.

King Francis was a hearty King and lov'd a royal sport,
And one day as his lions fought sat looking on the court.
The nobles filled the benches round the ladies by their side,
And 'mongst them sat the Count de Lorge, with one for whom he sigh'd;
And truly 'twas a gallant thing to see that crowning show,
Valor and love, and a king above, and the royal beasts below.

Ramp'd and roar'd the lions, with horrid, laughing jaws;
They bit, they glared, gave blows like beams, a wind went with their paws,
With wallowing might and stifled roar they roll'd on one another,
Till all the pit, with sand and mane, was in a thunderous smother;
The bloody foam above the bars came whizzing through the air,
Said Francis then: "Faith, gentlemen, we're better here than there."

De Lorge's love o'erheard the King, a beauteous, lively dame,
With smiling lips and sharp bright eyes, which always seem'd the same;
She thought, "The Count, my lover, is brave as brave can be—
He surely would do wondrous things to show his love of me;
King, ladies, lovers, all look on; the occasion is divine—
I'll drop my glove to prove his love; great glory will be mine."

She dropped her glove to prove his love, then look'd at him and smiled;
He bowed, and in a moment leaped among the lions wild;
The leap was quick, return was quick, he has regain'd the place,
And threw the glove, but not with love, right in the lady's face.
"My God!" cried Francis, "rightly done!" and he rose from where he sat;
"No love," quoth he, "but vanity sets love a task like that!"
—Leigh Hunt.

A Test of Manhood.

THE only child of a poor widow, whose sole support was derived from washing, sewing and mending for the people of the Western town in which she lived, was Henry Gilbert. He was a bright, useful boy of fourteen, and always ready to do whatever he could to add to their puny household revenues.

Sometimes Henry found a job at gardening, or feeding and caring for horses, cows and poultry, or running on various errands, for which the neighbors willingly paid him small sums.

The time for attending to these various employments was usually before or after Henry's school hours, for, poor though she was, Mrs. Gilbert was desirous that her boy should secure as good an education as the wealthiest merchant's son in the town.

Often when Mrs. Gilbert had taken in an unusually large washing, he would rise very early, make the fire, then carry all the water needed, after which he would rub out many of the heaviest clothes, that his mother might not find it so hard. All this he frequently performed before the first bell rang for school. To his schoolmates, the idea of a boy of past fourteen, staying out of school (as he sometimes did) to help his mother wash, seemed simply ridiculous.

So in many ways they began to annoy him; and, without realizing it, they made school quite unpleasant to Henry. Sometimes in school hours they would slyly caricature him on their slates as "girl-boy," in big aprons and huge bonnets. Henry was too much of a man at heart to inform his teacher of their rude treatment, and resolved to bear it all in silence. And he did not wish to worry his mother by telling her, although he longed for her sympathy.

Henry's chief tormentor was Fred Wilcox, the son of the leading banker in the town.

Fred was the exact age of Henry, and, being smart and good-looking, was very popular with the girls and boys of the school. His father's high standing helped him, too, and gave him great precedence with his schoolmates.

One day, at the noon recess, Fred Wilcox stepped up to Henry, as he was preparing to leave the room, and, with a significant wink at his allies, laid a small package in his hand.

"There, Bridget," he said, addressing Henry with a sneer, "is a present for you."

The boys and girls who had not yet run home for their dinners crowded around Henry, their faces full of curiosity.

"Open it and let us see what it is, Biddy," cried Fred's principal auxiliary.

But, without a word, Henry laid the package down unopened on one of the desks,

and tried to escape from the crowd that hemmed him in.

"Hold, fair Bridget! You must appear in the togs suitable to your worthy office!" cried Fred. And Fred's word was law with his school-fellows.

"Boys," Henry cried, pleadingly, "let me go home. I never harmed any of you."

"Bridget wants to get home to her washing," mocked Ned Dolliver, with a rude laugh.

While four boys held Henry firmly on the floor, Fred took from the package a tiny calico apron which he pinned to the front of the captive's coat. Then he tied a child's calico bonnet on Henry's head.

When Henry struggled to his feet, he presented a ludicrous spectacle, and the boys circled around him, laughing rudely and cheering loudly.

With flashing eyes and anger-flushed face, Henry tore the things off and flung them from him, saying:

"You are no gentleman, Fred Wilcox, and I hope to see the day when you'll be sorry for this. I don't think your father and mother would be proud of you now. A boy in your position could use his spare time in doing better things than making fun of somebody who happens to be poor." Then he rushed out of the schoolroom and ran toward home.

One cloudy Saturday, Henry, by his mother's permission, was fishing in a goodly-sized stream about a mile outside the town, when, on looking around a bend, he saw Fred Wilcox, Ned Dolliver and two other boys of their set swimming in the creek.

"Hello!" cried the auxiliary, catching sight of Henry, "if there isn't Bridget fishing!"

"Let's go down and duck Biddy," suggested Dave Traylor. "That'll be fun."

"What do you say, Fred?" asked Ned, waiting for his leader's approval.

Now if Fred had acted out the dictates of his heart, he would have said: "No, boys. Let Henry alone. We've mistreated him long enough." But he refused to utter the words. He was afraid of losing his popularity with the boys.

"Let's not bother ducking him," said Fred, "but let's swim around the bend and scare the fi h away."

"A'l right," approved the auxiliary. "Come on, boys!"

And down the creek they swam, shouting and plunging through the water, creating enough confusion to frighten the finny tribe into the deepest holes that they could find.

Henry's face flushed with indignation, but he did not reply to one of the taunts which they flung at him. Instead, he drew in his line and hook and prepared to leave the spot.

Then the boys derided his skill as a fisherman. "Why don't you catch more fish, Bridget?" shouted Ned Dolliver.

Before Henry could get his line untangled from the scraggy branch of a tree, where it had caught, his tormentors began to fling water upon him, and when at last the unruly line was freed from its entanglement, his clothes and face were wet with the muddy water.

Then, with a shower of rude words, the boys started to swim up the creek in the direction which Henry was going. It was their purpose not to give him a chance to fish again that morning.

The current became deeper and swifter as they proceeded, and one by one they all swam back except Fred. "Come on; don't be afraid!" he called to his retreating companions. But they did not obey him.

The next second he uttered a cry of fear and pain.

"Help, boys! Quick! My legs are cramping!"

"They heard, but not one moved to Fred's rescue. They gazed helplessly back with white, terror-stricken faces as they saw their friend being drawn down with the current and under the deep water of the creek.

"Help! Help!" came another faint call from the drowning boy. But, led by Ned Dolliver, the boys made a dash for shore, abandoning him to his fate.

Fred's white face had appeared above the water for the second time, when the strong, active arms of Henry Gilbert caught him, and after a hard struggle bore him safe to the bank.

When Fred opened his eyes it was not his auxiliary whom he saw rolling him over the ground to restore him, but the boy whom he had so thoughtlessly ridiculed.

Then Ned Dolliver and the others came back. They had Fred's clothes, but were ashamed to face either their friend or his deliverer.

"Boys," Fred said, rather weakly, as Henry assisted to dress him, "it's all right, you're not coming to help me. I'm not going to hold it against you. But from now on I want you to know that Henry Gilbert is the most manly boy in our school,

and, if he'll let me, I'm going to be his friend."

And that is the way Fred apologized to Henry before his associates for his past rudeness.

Three weeks after this incident at the creek the school closed for the summer.

"Fred," said Mr. Wilcox one morning at the breakfast table, "we need a trusty boy in the bank to run errands, carry messages, etc. The pay is good, but he must be strictly honest and not afraid to work. Do you know a boy in town who you think will suit me and suit the place?"

"I do, father," returned Fred quickly.

"His name is Ned, and I call him your 'auxiliary,'" guessed the banker, smiling.

"No." Then suddenly: "An auxiliary is something that helps, isn't it, father?"

"I believe so. Isn't Ned always at your heels to assist you in all your plans?"

"Yes; but the boy I know for the place is a more trusty auxiliary than Ned. He will help when a fellow needs help," said Fred warmly.

"Who is he?"

"Henry Gilbert."

"I don't know him. What claim has he for recognition for this position?"

Fred was confused at first. He had never told his parents how near he had come to losing his life in the creek that day.

But here was a chance to reward Henry, so he related his adventure at the creek, and freely confessed how rudely he had acted toward his brave rescuer.

Mr. and Mrs. Wilcox went that very morning to call on Mrs. Gilbert. Of course Henry secured the position immediately, which enabled his mother to quit washing. He and Fred are both honorable young men now, and are warm friends. Through honesty and real ability Henry has reached the position of cashier of Mr. Wilcox's big bank.

Greeley In Good Society.

When Horace Greeley visited Paris in 1855, he was the victim of a mistake that caused him to spend a night behind the bars of the debtors' prison of the Rue de Clichy. A French sculptor had sent a statue for exhibition to the World's Fair at New York, of which Mr. Greeley was one of the managers; the statue had been returned in an injured condition, and the sculptor took the method of causing Mr. Greeley's arrest to recover damages. A friend of Mr. Greeley, Mr. Field, went to the prison the next morning. When he entered the large common room in which the prisoners and their friends were assembled, the *Youth's Companion* says, he saw a singular scene. In one corner squatted a laboring man in his blouse, surrounded by his wife and children, who had brought him some delicacies for his Sunday dinner. In another corner lounged a fashionably dressed young gentleman. The room was filled with the most strangely contrasted groups.

"Standing in the middle of it," says Mr. Field, "wearing his old white overcoat, and with his hat on the back of his head, his countenance wreathed in smiles, flanked on either side by a United States minister, stood Horace Greeley. To refrain from laughing was impossible.

"Field," he exclaimed, "this has been one of the most fortunate incidents in my life! Without it I doubt if I ever should have had the opportunity to see good society. You know I know nothing about it at home. I have never associated with the people who compose it there. I dare say they are very good people, but they are not my people. Last evening we had a prince at the head of the table, and I was flanked on one side by a count and on the other side by a baron. If I only remain here long enough, I shall not only learn the French language, but good manners into the bargain."

Of course, when the case came up for trial, Mr. Greeley was released.

Mrs. Merrill's Speech.

At the recent Sorosis breakfast in New York Mrs. Estelle Merrill of Boston gave a little talk. "You have heard," she said, "of the man who said that it was so much pleasanter to be riding in a cab and thinking how much pleasanter it was to be riding in a cab than it was to be walking, and thinking how much pleasanter it was to be riding in a cab and thinking how much pleasanter it was to be riding in a cab than it was to be walking." Then Mrs. Merrill took a long breath. "Now I ask your sympathy to-day," she went on, "because it is so much pleasanter to be sitting in a chair and thinking how much pleasanter it is to be sitting in a chair than it is to be making a speech, than it is to be making a speech and thinking."

By this time everybody was laughing so heartily that Mrs. Merrill finished with a hopeless gesture.

When Father Wore Store Clothes.

My father was a son of toil,
He worked both long and late,
From sunrise in the summer time,
Until the clock struck eight,
And evening drew her curtains round,
And dropped her fragrant calm
Upon the hills and meadow lands
Of that New England farm.

He struggled with the balky horse,
Hitched to the stubborn plow;
He drove the pigs and fed the hens,
And milked the kicking cow;
He drained the swamp, and built stone walls,
And chopped the forest trees,
And led the surly bull a-field,
And hived the swarming bees.

And from his patient lips complaint
I never chanced to hear;
Whate'er befall, his motto was
To hope and persevere;
But all we children slunk away
Before the tide of woes
That swept o'er that New England home,
When father wore store clothes.

'Tis true those times were very rare,
On March town-meeting day,
And when the yearly muster came
Along the first of May,
When he was drawn for jury-man;
On Sundays when 'twas fair,
And when a neighbor's funeral bell
Pealed out upon the air.

His brow would wrinkle up in dread,
His bosom heave with sighs,
And drops of moisture hung forlorn
In his distracted eyes.
He sadly gazed upon the coat,
And rubbed his Roman nose,
And all the household sat in woe
When father wore store clothes.

Evil prognostications fell
In torrents from his tongue;
He should get cold, he'd get a pain
Within his heart or lung;
Those pantaloons were rather thin,
That coat was scant of skirt,
And ice was warm when 't was compared
To that stiff-bosomed shirt.

And how he groaned about the "stock,"
And struggled with the vest,
And "meeting boots," he kicked them on,
Were a confounded pest!
His bell-crowned hat the climax capped
Of all his earthly woes,
And all the household sat in gloom
When father wore store clothes.

George W. Childs to Young Men.

"I have always believed that it is possible to unite success in business with strict moral integrity. I am aware that many people think that the ethics of business or of politics are quite distinct, and that a man may do things in his public employment which he will not think it right to do in his domestic or private life. I do not agree with this view, and if the record of my life has any value, it is in showing that at least it is not necessary to success in business that a man should indulge in 'sharp' practice. But even if it were necessary, still it would not follow that it is worth while. We cannot afford to do or say a mean thing. There are higher satisfactions than the mere getting of money, and riches cannot compensate a man for the consciousness of having lived a dishonorable and selfish life.

"Speaking of selfishness leads one to speak of generosity. I think the habit of generosity may be cultivated, like other habits. And I have felt that it is a great mistake to put off being generous until you are dead. In the first place, you lose the pleasure of witnessing the good that you may do; and, again, no one can administer your gifts for you as well as you can do it for yourself. It is a great pleasure to be brought into personal relations of that kind, and to make people feel that you are not a philanthropist in the abstract, but that you are interested in them personally, and care for their welfare. In that way you benefit them not merely in a natural way, but you make them feel that men are really brothers, and that they were made to help one another. Not only is that feeling agreeable in itself, but it will be apt to prompt them to carry out the principle themselves. Put yourself into all you do and let others feel that you are there. Do not only contribute to a charitable object, but go yourself and help. It may seem an inconvenience at first, but soon you will come to consider it worth any inconvenience.

"I cannot lay too great a stress on the matter of strict temperance. Drinking beer, wine or spirits is a useless and dangerous habit. It does no good, and if the habit is continued it is almost sure to lead to destruction and death. Taste not. Touch not. Handle not. You should have courage to say 'No,' if you are asked to drink. In looking back over my life I can recall many of the best and most promising of my companions who were ruined by the habit of drinking—not one of whom ever imagined that he would be wrecked in mind and body, and eventually fill a drunkard's grave.

There is not safety in moderate drinking; every one who touches it at all is in danger.

"Perhaps I ought to say a word about the companions a young man should choose for himself in life. You should try to make companions of the best people you can become acquainted with. In order to do this you should have something in yourself that may be a return to them for what they give you. It is not necessary for this purpose to be a genius, or to have a remarkable intellect or extraordinary erudition. But be yourself, and be a man, and learn to think of others before yourself, and you will have friends enough and of the best. To be intimate with the magnanimous and the noble aids to form those qualities in one's self. A man is known by the company he keeps, and those who know what friends you have will be able to form a very correct idea of what you yourself are. You should see to it that this estimate be as high as your opportunities may secure.

"But perhaps I cannot better sum up my advice to young people than to say that I have derived and still find the greatest pleasure in my life from doing good to others. Do good constantly, patiently and wisely, and you will never have cause to say that your life was not worth living."

Daughters of England.

English society is just now greatly agitated over a problem that is for the first time vexing its conservative mind. It is no more nor less than a protest from the daughters against the existing state of things.

The English girl has been growing and has become very weary of being in leading strings. She does not see why she cannot have some of the opportunities that the George and Arthur and her other boy relatives are having, and why, as long as she is the youngest child, she may not have the privilege of doing something for herself.

She expresses herself as sick and tired of waiting, simply hanging by the eye-lids as it were, for some one to come and marry her. She prefers independence, and rather than live as a sort of tag on the family garments, she may strike out and make a career for herself. That there is method in her reasoning is, to an extent, admitted; but the English matron, who would rather die than do anything contrary to usage and tradition, is horror-stricken at the idea of her daughters doing anything whatever that would look like a career. But all the same, the daughters are going to win the day. They are acquiring a little smattering of the spirit of American girls and can see no reason why they should be so kept under. As a rule, the English girl, until she marries and comes into society a full-fledged matron, is the shyest, most timid in many cases, most awkward creature that one could well picture. But her shyness rapidly wears off, and then when she has daughters of her own she puts them through the same course of treatment that she always was subjected to, and they are getting so they don't like it. Higher education, quantities of literature, the prevailing spirit of the age and the rapid and healthy growth of common sense among women is doing its work in England as well as in America. These girls argue, and with good show of reason, that they cannot see why they should be harnessed to old forms and held back by traditions, when everything else in the nation is progressing and moving out of old-time environment. They claim that they have a right to grow as well as their brothers. And these girls are right to an extent. Tradition and usage have caused women to sacrifice their children any a time and oft, and there is little wonder that these girls are restive and rebellious under what they can clearly see is merely the domination of a time-worn custom.

Thought To Be Funny.

Small Son—Us boys is gettin' up a dog now, an' I bet our Fido will take the prize. Father—Fido has no pedigree.

Small Son—This isn't any European aristocracy affair. This is an American dog now.—Street & Smith's Good News.

Housekeeper—Those eggs you sold me were stale, and I asked you for fresh-laid eggs.

Dealer (patronizingly)—Those eggs are fresh, madam, not salted, and they are laid, manufactured. Had you desired eggs recently taken from the nest, you should have asked for freshly laid eggs.—New York Weekly.

"What is that dog good for, anyhow?" asked Cynicus, pointing to Canis's St. Bernard, lying near by looking dignified. "Good for!" retorted Canis; "that dog is a perfect gentleman. He's not supposed to be good for anything."—Puck.

It Was the Whale.

In the RURAL of March 17th there was printed the following puzzle with the request that answers should be sent to the editor:

Adam, God made out of dust,
But thought best to make me first;
So I was made before the man
To answer God's most holy plan.

My body God did make complete,
But without arms or legs or feet;
My ways and acts He did control,
But to my body gave no soul.

A living being I became,
And Adam gave to me a name;
I from his presence then withdrew,
And more of Adam never knew.

I did my Maker's law obey
Nor from it ever went astray;
Thousands of miles I go in fear,
But seldom on the earth appear.

For purpose wise which God did see,
He put a living soul in me;
A soul from me my God did claim,
And took from me that soul again.

For when from me the soul had fled,
I was the same as when first made;
And without hands or feet or soul,
I traveled on from pole to pole.

I labor hard by day and night,
To fallen man I give great light;
Thousands of people young and old
Will by my death great light behold.

No right nor wrong can I conceive,
The Scriptures I cannot believe;
Although my name therein is found,
They are to me an empty sound.

No fear of death doth trouble me,
And happiness I ne'er shall see;
To heaven I cannot ever go,
Or to the grave or hell below.

Now when these lines you slowly read,
Go search your Bible with full speed,
For that my name's recorded there,
I honestly to you declare.

From the time of publication until now answers have come in, the whole number aggregating 87 and ranging from the Man-in-the-Moon to The Serpent. The correct answer, The Whale, was given by ten persons; namely, Mrs. Belle W. Cook of Long Beach, Cal.; E. L. C., Alameda, Cal.; Mrs. John Marden, Estrella, Cal.; C. V. Wagen-sellin, Ukiah, Cal.; Mrs. Thos. Corbett, Albany, Oregon; Mrs. M. B. Hook, Red Bluff, Cal.; Wm. Dwinelle, Phoenix, Arizona; Clarence W. Whitehead, Honolulu, H. I.; M. E. Darling, Sunnyside, San Diego, Co., Cal.; and Mrs. Belle Adams of Box Elder Co., Utah.

In the Country are the True Americans.

Great cities, among us, are typical of the Republic as a whole, but the citizens of our great cities have their nationality brushed off at their elbows. In the country there are still purely American communities, whose fathers and grandfathers were American before them. Moreover, in the country the foreigner becomes more quickly Americanized. In New York he hardly pays us the compliment of learning our language.

And it is not strange that the few foreigners who have either the wit or the good fortune to penetrate into what they call the "provinces," are our kindest judges; for they have seen the American at his best. They have touched both the picturesque and the gentle side of our national character. It is not in the great cities but in the little cities and the villages that one sees the class that Emerson loved, the plain livers and high thinkers, or another class, not so plain in its living, not so high in its thinking in one way; but practical followers of righteousness and exceedingly pleasant people to meet. Many of them have what counted for wealth in a simpler generation; all of them have education and a generous habit of mind. They love their country, but they are a little shy of politics; nevertheless they furnish the pith of the Republic. They are the silent Warwick that make and unmake party kings, asking and expecting no reward, and only half conscious of their own power. Most of the women treasure up, somewhere, an old sword or a pair of tarnished shoulder straps, belonging, it may be to a gray, it may be to a blue uniform, but worn by equally honest and gallant fellows. The men are in touch with the present, but they keep the sturdy virtues taught them by their fathers, and, God be thanked, they will transmit them to their sons.—Octave Thanet, in the May Scribner.

Once Dr. McCosh visited the class-room of the late Noah Porter at Yale college and noticed his method of conducting a recitation. When the two were left alone he said to him: "Why, Dr. Porter, half the men had their books open behind the seats!" "Oh, well," was the answer, "I am glad to get them to open their books on any terms."

YOUNG HOBBS' COLUMN.

Karl and His Hawks.

Karl is a boy, not a big boy, hardly a full-size boy—well, just a boy. He manages to climb large oak trees. One spring he found the nest of a sparrow hawk with two young ones in it. The young birds were not feathered out, but he brought them to the house and put them in a box with slats in front of it, and when they were hungry they would call loudly and then Karl would feed them with meat. The old hawks would come near when the young ones would call, and two or three times they pulled a slat off the box and let the young ones out.

When they could fly well Karl would let them out because the weather was very hot and the box was not a comfortable place for them to stay in. As soon as they were at liberty they would fly away and would hardly be seen for the balance of the day. By the next morning they would be hungry and would call from the trees or light on the fence near by, and when Karl would take a piece of meat and hold it out in his hand so they could see it, they were glad enough to fly to him and light upon his head or hand and be caught and taken to their box and be fed.

As they were let out from time to time they would gradually stay away longer, until finally they did not come back. They probably found something to eat and learned to catch their own meat.

Karl was sorry, then, that he did not sew a piece of red flannel around one of the legs of each one so that he could tell them if he should see them afterward. He thought he saw them several times, but could not be sure of it.

She Walks in Beauty.

She walks in beauty like the night
Of cloudless climes and starry skies;
And all that's best of dark and bright
Meet in her aspect and her eyes;
Thus mellowed to that tender light
Which heaven to gaudy day denies.
One shade the more, one shade the less,
Had half impaired the nameless grace
Which waves in every raven tress,
Or softly lightens o'er the face,
Where thoughts serenely sweet express
How pure, how dear their dwelling place.
And on that cheek, and o'er that brow,
So soft, so calm, yet eloquent,
The smiles that win, the tints that glow,
But tell of days in goodness spent,
A mind at peace with all below,
A heart whose love is innocent.

—Lord Byron.

The Burial of the Living.

From evidence that it seems difficult to dispute, it appears that, in the Celestial Empire, old, incurably diseased and hopelessly depraved persons are frequently burned alive in order to rid the community of the burden and responsibility of their care-taking. This arrangement is the result of a mutual understanding, the victims assenting to and sometimes assisting in the preliminary ceremonies. The usage seems to have been recognized by the highest authorities, and the burials have certainly been conducted with the sanction of the ruling powers. Great preparations are made and there is much ado, and sometimes a show of grief, but a great deal of the latter is evidently perfunctory, as there is an all-around feeling of satisfaction on the part of the spectators and more or less complacency on the mind of the victim, who is comforted by the assurance that he is fulfilling a tradition and will earn the respect of his ancestors and gone-befores. This custom is scarcely more strange and barbarous than the Japanese practice of compelling a man for certain crimes or calamities to commit suicide. It would, at least, have its compensations in that the criminal could be made to take himself off, and thus leave no unpleasant reflections upon the mind of hangman or executioner.

DOMESTIC ECONOMY.

Some Chicken Recipes.

CHICKEN DUMPLINGS.—Take meat from cold chickens, mince and put with seasoning and one-half cup of liquor from boiled chickens (or stock) into a saucepan. Heat to a gentle boil. Stir in one teaspoonful of flour wet in a little cold water, and afterward the beaten yolks of three eggs. Stir till it thickens; pour out and let it get cold. Flour your hands and make into balls. Roll in cracker dust, dip into a batter made of one egg, a half cup of milk and a little flour; dip again in crumbs and fry in hot lard.

CHICKEN FRITTERS.—Cold chicken, salt and pepper, lemon juice, batter. Cut the cold chicken into small pieces, season with salt, pepper and juice of a lemon. Let stand one hour. Make a batter of two eggs to a pint of milk, a little salt, and flour enough to make a batter not too stiff. Stir the chicken in this and drop it by spoonfuls in boiling fat. Fry brown, drain and serve. Any kind of tender cold meat can be used in this way.

JELLIED CHICKEN.—Boil thoroughly, so that the bones will readily drop away from the meat; then return it to the water and keep there over night. Next morning chop the chicken into very fine pieces and to it add salt and pepper, with a little butter, if needed. Mix thoroughly and put in molds to turn out after it has cooled and hardened.

CHICKEN CROQUETTES.—One cup of finely-chopped chicken, one of sifted bread crumbs, salt, pepper, half a cup of stock or gravy. Heat altogether and stir in a beaten egg. When cold form into croquettes, roll in crumbs, then in egg and then in crumbs again. Lift carefully into frying-basket and plunge into boiling lard for a minute or two.

GRATED APPLE PUDDING.—One pint of grated apple, one pint of cream, four eggs, sweeten and flavor to taste.

Cut cold meats and bread in the thinnest slices. In making sandwiches, butter the bread before cutting.

Gems of Thought.

In character, in manner, in style, in all things, the supreme excellence is simplicity. Longfellow.

Keep your hearts warm by feeling for others, and your powers active by work done in earnest.—Hall.

The most modest little pond can reflect a picture of the sun if it is absolutely at rest in itself.—Carlyle.

As we must render an account of every idle word, so must we likewise of our idle silence.—Cranmer.

Every evil to which we do not succumb is a benefactor. . . . We gain the strength of the temptation we resist.—Emerson.

What must be, shall be; and that which is necessity to him that struggles is little more than a choice to him that is willing.—Seneca.

I have four good reasons for being an abstainer—my head is clearer, my health is better, my heart is lighter and my purse is heavier.—Guthrie.

Religion is the basis upon which all true civil government rests; from which power derives its authority, laws their efficacy and both their sanction.—Webster.

It is not without reason that fame is awarded only after death. The cloud-dust of notoriety which follows and envelops the men who drive with the wind bewilders contemporary judgment.—Lowell.

Every man deems that he has precisely the trials and temptations which are the hardest of all for him to bear; but they are so, because they are the very ones he needs. Richter.

"I don't like to appear vain," said the wall to the picture, "but you'll be stuck on me pretty soon." "I'll be hanged if I do," retorted the picture.—Philadelphia Record.

Highest of all in Leavening Power.—Latest U. S. Gov't Report.

Royal Baking Powder
ABSOLUTELY PURE

PATRONS OF HUSBANDRY.

Random Thoughts.

By A. P. ROACHE, W. M. S. G. of California.

'Mid orange bloom and azure sky,
With hope and zeal our cause we ply.

The Florin meeting was well attended, and with visitors from Elk Grove, Sacramento and other points, the number which attacked the fine feast was far from small; and after a warm though enjoyable session, Worthy Master Reece saw us to the train in proper condition to arrive at Lodi. Here we were met by Bro. J. D. Huffman, who next morning escorted us to the Clements picnic, where the youth and beauty of the entire region had assembled to participate in many pleasing features, not the least of which was a regular old-time barbecue. District Attorney Nutter opened the programme with a fine speech. Bro. Messer gave them a splendid address, and with fun and frolic on every hand, the affair was voted a success. After spending a most enjoyable evening with Bro. Huffman and his interesting family, the early morning found us en route for Roseville, where Worthy Master Pilcher, the secretary and several members of the grange met us, and we beg to assure them that of all the pleasures received at their hands, the most pleasing was the sight of their blue badges. This was the first instance in which we have been met by members in regalia. This has been an exceedingly good meeting; and as Bro. and Sister Pilcher are extensive farmers of the true mettle, we soon hope to hear of the rapid advancement of this grange. At Wheatland, Bros. Walton, Ohleyer, Ostrom, Frisbie and Berry welcomed us; and as our train arrived much later than schedule time, we were only permitted to speak a few cheering words, and after many claps of strong, honest hands and much regret at the briefness of our stay, boarded the train for the ancient town of Marysville. Bro. Messer and the writer were hospitably entertained by Bros. Ohleyer and Walton, and next morning, in company with Bro. Frisbie, Bro. Walton landed us at the Grimes picnic, 25 miles distant, at 10 o'clock A. M.

Owing to the efforts of Worthy Master Strothers and others of the live members, the picnic, though not large, was a quiet, pleasant affair largely dominated by the local Sunday-school, whose exercises were pleasing and beautiful. A delightful evening spent with Bro. and Sister Kilgore prepared us for the largest gathering we have yet met. Marysville turned out in all her glory and beauty, and brains, nature, art, climate and environments conspired to make this a grand occasion, and our reception was not only very cordial, but exceedingly warm. We are now en route for our last engagement in Grass Valley, after which more time can be devoted to RURAL notes.

The Secretary's Column.

This office has very little grange news to report this week. The meeting at Petaluma on the 27th was a grand success. W. D. Houx of Two Rock Grange delivered an address of welcome which was ably responded to by Hon. E. W. Davis of Santa Rosa. The remarks of Bros. Messer and Roache were well received and greatly appreciated by those present.

Bros. Messer and Roache spent a pleasant evening with Past Master Coulter and family on the 27th, leaving early Sunday morning for Sacramento.

This office acknowledges receipt of letters from some of our representatives in Congress, in relation to resolutions adopted by the executive committee April 3, 1894, regarding the agricultural experiment stations in this State stating that the matter would receive their careful consideration.

Send us a postal card with a bit of news from your grange. Anything that will interest you will interest other patrons.

The Grange Visitor, published at Lansing, Mich., says that in spite of the depressed times the grange is marching on and is winning its way as it deserves. Let us get encouragement from these signs of life, for a better day is dawning.

One of the definite purposes of the grange is to make farmers more intelligent, self-respecting, successful, influential men. Will you not add your intelligence and counsel to the movement?

Bro. Alpha Messer says the grange cause is a noble one, and the influence of the grange is uplifting in all its tendencies.

The farmers need the grange and the grange needs all the farmers and their families. We want the best men in the grange to assist in developing and making proper use

of the social and educational features of the order, for the benefit of the rural population of our State. Our farming population should use every opportunity within their reach to properly develop the social element in their natures, and to educate themselves, not only in the various lines which relate to farm work and farm production, but also in those lines of education which relate to their duties and responsibilities as citizens. A united movement all along the line cannot fail of good results. Let us labor together for this end.

Address all communications for State Grange to Don Mills, Santa Rosa, Cal.

Mr. Messer at Yuba City.

Yuba City's greeting to Mr. Messer took the form of a picnic in which the grange and the general public participated. It was held in the spacious warehouse of the Farmers' Union, which easily accommodated the throng of two thousand or more persons who came from many miles around to join in the pleasures of the day. Besides Mr. Messer there were present Mr. A. P. Roache, Worthy Master of the California State Grange, Mr. A. D. Logan, of the Grangers' Bank of San Francisco, Senator D. A. Ostrom, of Wheatland, and many others from granges near at hand.

The place of meeting had been fitted up with careful preparation. A wealth of flowers and the taste of their arrangement bore witness to the part borne by the ladies in the work.

After a few words of welcome to the visitors, Mr. George Ohleyer, Jr., Master of Yuba City Grange, introduced Mr. Roache. After a few pleasant words about the beauty of the county and the civility of its people, he referred to the organization of the Grangers' movement about twenty-seven years ago. At first it was intended to be confined to men, but soon after woman was admitted to full membership, and it was then that the grange began to flourish. Its first mission was to heal the old sores and to unite once more the people of the north and south after the late war; its next mission was to unite its members on business affairs. They favor the election of United States Senators by the people; on the question of tariff they favor equal justice to all, the farmers as well as the trades people. In a word—"Tariff for all or tariff for none." The grange favors all these reforms, and some have resulted through its efforts. The middleman was not so much to blame as the man who remains out of this farmers' organization.

This, of course, is but the briefest outline of an address which occupied 30 minutes in the speaking. Mr. Roache was heard with close attention and was warmly applauded.

Mr. Messer's address, which was, of course, the feature of the day, came after dinner and was delivered to an audience of at least 2000 persons. We copy the following synopsis of Mr. Messer's remarks from the report of the Marysville Appeal:

He stated that he was most happy to meet them. He had come from the Green Mountain State to talk over questions of interest with the farmers. They were not only the bone and sinew of the nation, but must be numbered among the most intelligent. Ex-Governor Long, of Massachusetts, said a short time ago "that the rulers of Massachusetts had been taken from the common people." Abraham Lincoln said, "The common people must be the most intelligent, because God had made more of them." He then spoke of the farmers' league and other rural organizations, which in his section had disappeared, and the members had returned to the grange. The grange in New England was in a most flourishing condition, there being more than 60,000 members in New England alone. The chief object of the grange was to elevate the farmers. As a diamond is and needs to be polished, so is the farmer polished by friction with each other and by sociability. It is not enough to graduate from the institutions of learning, for education proceeds from experience in life. The education of the present and recent educational efforts have been directed toward the practical—the practical to go with the theoretical in education, the theoretical giving way to some extent to the practical. The grange took up the agricultural colleges and segregated the teachings and created agricultural colleges exclusively. He wished that California would segregate the colleges. The reason why they did not prosper was because they did not hold up their heads high enough. All the great men sprang from the lower classes. We improve with and by association with each other. The property of the farmers is always in sight and pays more than his proportion of the taxes of the county. In the State of Pennsylvania the grange has reduced the tax four millions annually by placing it as a corporation tax; the same has been done in Vermont. During the past few years 6,000,000 people have come to our shores from Europe; fully 25 per cent were from the slums. The country is looking to the farming population to correct this evil.

Mr. Messer's manner of speech is in harmony with the clearness and dignity of his ideas. He spoke easily and eloquently and made a profound impression upon his hearers. Old granges were encouraged in their work, discouraged granges were made

hopeful, and to outsiders there was opened an aspect of the grange which will give it new respect and consideration as an organization.

Following Mr. Messer, there was an address by Judge Wilkinson of Live Oak.

In connection with these exercises, there was rendered a miscellaneous programme of musical and elocutionary numbers in which the wealth of local talent in Yuba City was displayed; and in the evening there was a drill of young ladies in costume followed by a social dance.

The affair, viewed as a whole, was a large event in the social life of the grange and of the community. It was one of those wholesome occasions where instruction and entertainment were worthily combined, and therefore a truly characteristic grange affair.

From Tulare.

TO THE EDITOR:—Tulare Grange held its bi-monthly meeting in its hall on Saturday afternoon. One applicant for the degrees was elected.

Tulare county having been reduced in population and size by the organization of Kings county, the subject of reclassifying the county so as to reduce county expenses was discussed and considered, and Bro. E. C. Shoemaker was appointed to interview the supervisors and urge the reclassification of the county.

The secretary read a communication from the secretary of the State Grange, submitting to the subordinate granges the consideration of Mr. David Lubin's plan of Governmental protection and encouragement to all farming industries, the same having been approved by a special committee appointed by the State Grange Executive Committee.

On the third Saturday of this month the third and fourth degrees will be conferred on a class of three, at which occasion a lunch will be had in the hall.

Bro. Shoemaker informed the grange that Selma Grange invited Tulare Grange to a joint picnic. Owing to previous arrangements the grange is unable to join Selma Grange in the picnic.

The lecturer submitted the following list of subjects for grange discussion. The first Saturday of each month was set for consideration of the several subjects in the order of their number, it being agreed the consideration of Mr. Lubin's plan shall be in open grange, and all desiring to participate in the same being invited to do so:

1st. District agricultural associations to set apart a percentage of their State appropriations for farmers' institutes under grange management.

2nd. Mr. David Lubin's proposal to have the Government carry all farming products at such rates as will encourage and protect agricultural industry. Set for first Saturday in July.

3rd. The arrangement of educational work in the public schools so as to provide for instruction in industrial pursuits.

4th. Postal savings banks the safest and best; alike advantageous to the Government and depositors.

5th. The Australian law of registry of land titles.

The lecturer suggested a sixth subject: The State to provide a policy of insurance or insurance contract, alike equitable to the insurance company and the insured, and require all insurance companies doing business in this State to use the same.

The last called forth many expressions of experience on the working effects of the present system of insurance and settlement of losses by the Insurance Union, the crying abuses of the companies, the necessity of State interference to prevent a continuance, or the assumption of all insurance business, fire and life, by the State as the true and correct solution of the trouble.

It appeared to be the prevailing opinion that the Insurance Union of the Pacific coast has heretofore, by the corrupting use of money, prevented any legislation tending to interfere with its present system of doing business.

The grange adjourned to give the use of its hall to a fruit-growers' association. T.

—Kings county agriculturists have decided to pay \$12.50 per month for ordinary farm hands, and for teamsters and skilled farm labor from \$15 to \$17.50 per month, board included. A cut in the wages of school teachers in that county, for the coming school year, has also been decided upon. Dry weather and hard times have been the cause of these reductions in wages and salaries.

—Taking it year in and year out, the coldest hour of each twenty-four is 5 o'clock in the morning.

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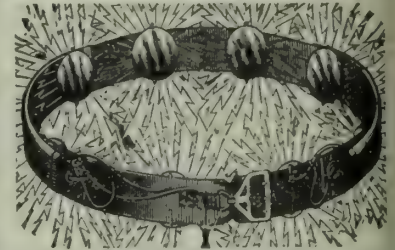
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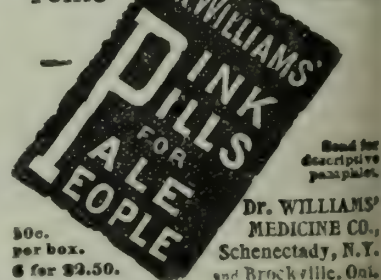
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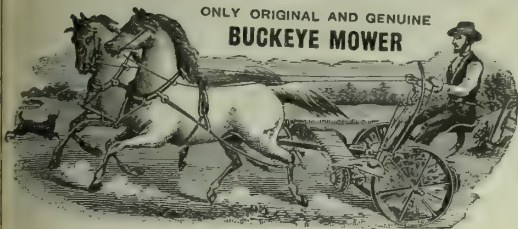
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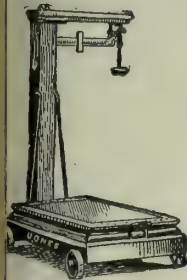
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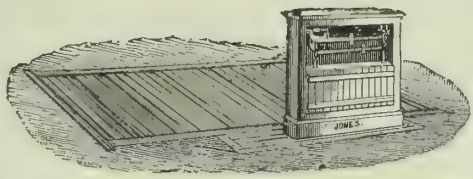
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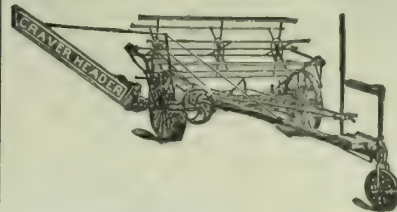
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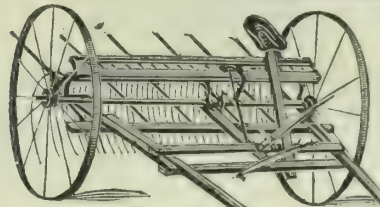


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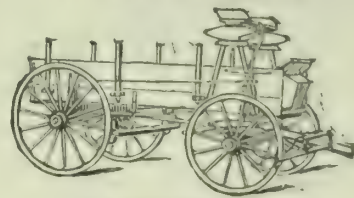
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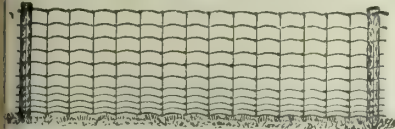
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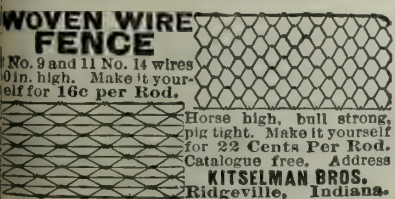
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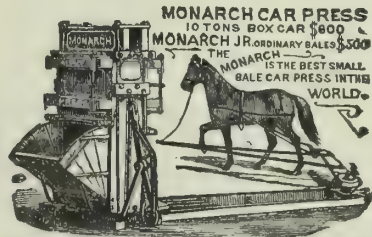


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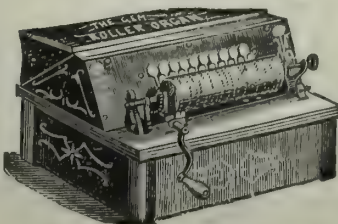
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AGRICULTURAL NOTES.

CALIFORNIA.

Fresno.

Expositor: One does not hear the howl of "We're ruined!" from the Fresno county farmer that is arising in other parts of the State because of the lack of rain. Ten years ago Fresno would have been in the same deplorable state as her sister counties. To-day she is saved by her marvelous irrigation facilities. On the west side, in the vicinity of Dos Palos, there are many beautiful fields of wheat. These had been checked up and were irrigated several times. Where there was no irrigation the late-sown grain is an utter failure. This does not mean ruin, though. The farmers here have a second resource. If rain refuses to come and make their crops, they turn on the water themselves and insure a harvest. Plows are busy all over the country preparing the ground for Egyptian corn. Many fields of stunted grain are being turned over. The new crop will furnish fodder for the animals and also give the farmer something to take to town to sell. It is one of the easiest crops to raise, and, if there is plenty of water, is a sure thing. Fulton G. Berry has put out a heavy acreage to Egyptian corn. He is not only planting his own land, but has leased 80 acres in addition. "Why should a Fresnoan put on a poor mouth?" demanded Mr. Berry. "Our county is better off than any other part of the State. Down south and along the coast you hear of them shooting cattle because there is nothing to feed them. The colts are taken from their mothers and killed to save the dam's strength. Sheep are slaughtered because they can't be kept. You don't hear anything of that sort in Fresno."

Kern.

Echo: We hear of an offer of \$5 a ton for alfalfa standing in the field, the purchaser to have as many crops as he can cut during the season. That means \$25 or \$30 an acre if the stand of alfalfa is good—a pretty handsome rental. Loose alfalfa hay is worth from \$9 to \$10 delivered in Bakersfield. Grain hay brings from \$12 to \$14 baled. It will probably be the case that all of the grain sown in the county will be cut for hay when the growth of stalk and leaf will warrant it.

Kings.

Hanford Journal: Some of the farmers in the Lucerne colony, east of Hanford, have been having a time with squirrels. These pests seem to have taken especial fancy to young prune trees, as they did not bother any other variety of fruit trees. They ate off the leaves and green sprouts on the prune trees at Mr. Ludlow's place and started in on Joe Williams', but he killed them off with squirrel poison. Mr. Williams thinks that a day should be set for a squirrel-killing bee among the farmers; then, if all would put out poison on that day for the pests, they could be almost exterminated. It is a good suggestion and the Horticultural Society should consider and act on it.

Hanford Journal: Large numbers of sheep have been and are still being shipped from Kings county to Nevada, owing to the scarcity of feed here consequent on the dry year. Last Saturday 60 carloads of sheep, or 6500 head, were shipped to Nevada from Hanford, and to-morrow 22 carloads are expected to leave here for the same destination. From Lillis, just across the river from Lemoore, 75 carloads have been shipped. John A. Wilson has furnished us an item which will be of interest to sheep men who intend driving their herds across the Sierras, to wit: Five cents per head will be charged them for driving their sheep through either Mono or Inyo counties. Wool is coming into the Hanford depot in considerable quantities. About seven carloads were shipped yesterday.

Hanford Journal: D. C. Hayward has a dozen soft-shell walnut trees on his farm in Excelsior district. They are eight years old, are hardy and grow well without irrigation. They bore a considerable crop last year and this year they are bearing more. Mr. Hayward does not know the name of the variety, but they were introduced into this State by Colonel Hollister. The walnut is a tree of slow maturity, but it yields a crop which can be kept a long time and be marketed at any season of the year. There are, no doubt, certain varieties of the soft-shell walnut which would grow well and bear well in Kings county, and there is money in it here or anywhere else in this State where the nut can be successfully grown.

Los Angeles.

Pomona letter: There are many farmers in Pomona valley who believe the price of hay here will not go above \$18 per ton at any time during the summer season, notwithstanding this will probably be the driest year for farming known in California since 1876. There have been some people who believe that hay might go to \$30 per ton before the season is over, but the opinion seems to obtain that there is so much hay left over from previous years, so many immense barns hereabouts are stocked with baled hay, and there are so many acres of alfalfa in and about Pomona that the value of hay will not rise to anywhere near \$30 a ton. One or two men in this locality who invested several thousand dollars each in barley and alfalfa hay as a speculation last November, and have kept their product until now, will realize from 100 to 150 per cent on their outlay.

The orange crop of the valley, says a Pomona correspondent, will be entirely shipped in about three weeks. Several large seedling orchards are yet to be picked and packed, and there are several carloads of fine Mediterranean Sweet that are to be sent eastward. The San Antonio Orange-Growers' Association is getting excellent prices for its product, and the orange orchardists are the happiest men we have here now. The only regret is that we did not have the association of orange-growers two or three years ago, and thus have prevented the slaughter of our citrus fruits in the commission and other houses in the East. The association here is stronger than ever, and the officers say they will have every orange-grower enrolled in its organization before the next shipping season opens. The prospects for very large yields of prunes and peaches in Pomona valley are still bright, but there will not be quite so large a yield of these fruits as was promised at the blossoming two weeks ago. There has

been a slight falling off of green apricots this week.

The Los Angeles Times thus sums up the situation in southern California: The few light showers which fell in this section last week did little if any good. In the first place, there was scarcely enough moisture to thoroughly wet the surface of the ground, and then the showers were followed by high and dry winds, which soon removed all traces of moisture from the soil. Haying has begun in some localities with a yield that will fall far short of the promises of the early part of the season. Light frost, which formed Friday morning of last week in a number of places caused slight injury to tender vegetation, but no reports were received indicating damage to the fruit buds, except that cool nights and the lack of rain are causing the young fruit to drop some, which, in view of the very heavy bloom, will be beneficial as tending to increase the size and quality of the remaining fruit.

Marin.

San Rafael Tocsin: Mr. L. Tomasini, manager of the Dairymen's Union, has recently returned from Humboldt county, where he has been in the interest of the institution that he represents. He reports that there is a strong probability of the big creameries there joining forces with the Union, which would mean giving it the absolute control of the market.

Napa.

The fruit-growers of Napa have decided to sell all their cherries here f. o. b., and they appointed Messrs. Tool, Searby and Evans a committee to confer with the packing companies in regard to handling the crop.

Orange.

Santa Ana letter: The fact that orange-growing in this county is one of the most profitable of industries is emphasized by the recent sale of A. D. Bishop's crop off of about 15 acres of land. Mr. Bishop sold his crop to a Los Angeles firm for \$3800, or an average of over \$250 per acre. When these figures are compared with the amounts received per acre in the East from grain or fruit crops, the difference is so great that Eastern people are at once inclined to vow that the California liar has again broke loose and is playing havoc with truth and veracity, generally.

San Benito.

Hollister Advance: Near Rio Bravo, Kern county, a patch of ground with so much alkali that a man would sink to his shoe tops while on it was irrigated and sowed with corn and grain. The rankest growth followed, and after three years of irrigation and cropping there is no trace of the alkali except on the tops of the checks, while just over the line, on unimproved land, the ground is as white as a bank of beautiful snow. There was no drainage; nothing except what has been related was done to improve the soil.

Advance: Crops in Bear valley are reported greatly above the average throughout the county. There will be a good crop of barley, which is heading out nicely. About an inch of rain fell in the southern part of the county during the showers last week.

San Joaquin.

Lodi Review: George Fox of Angels Camp, Calaveras county, has a two-year-old colt which is to a certain extent a natural curiosity. For some months past the colt has had a tender spot near its right ear, and recently it resulted in an open wound. After trying in vain to heal it, its owner decided to take the animal to a doctor of Stockton to have the wound treated. The doctor, after a careful examination, made an incision with his scalpel, and, taking a pair of strong forceps in his hand, he drew from the place a well-formed molar tooth, in form, shape and color exactly like those in the colt's mouth. The colt improved at once and the wound is healing.

Stockton Mail: In connection with the present low price of wheat, and the good price paid for hay because of its scarcity, the question has been asked whether or not it would pay the farmers to turn their wheat crops into hay. Inquiry along the water front to-day resulted in a general opinion being obtained to the effect that at the present prices of wheat and hay the proposition would be a paying one. Hay sold on the water front yesterday as high as \$13 a ton, and from \$15 to \$20 is predicted as the ruling price for the old crop. New hay, either loose or in bales, will range, according to the knowing ones, from \$10 to \$12 at the beginning of the season, advancing as the season progresses. There is little or no old hay now in store; and as the price of feed barley advances, more hay will be used, and the price will advance accordingly. It is stated, however, by those who profess to know that the island farmers are the only ones likely to cut grain for hay. As good a stand is required to make hay as to produce a full crop of the cereal; and, as one dealer put it, the upland farmers to make hay would have to "mow with a pair of sheep shears and rake it with a fine-tooth comb." One island farmer who was questioned on the subject said that he would not cut hay unless he secured a contract of sale first, for the reason that it costs twice as much to harvest hay as wheat, and if not sold, the latter can be stored in one-quarter the space.

Santa Barbara.

Santa Barbara letter: This county is suffering very badly from the lack of rain. Private letters from Lompoc valley state that crops are all looking bad, and that feed is so scarce that a great many cattle will have to be driven to other parts of the State. Some ranchers are killing their stock and opening markets to dispose of it. Many of the small farmers have been obliged to kill part of their horses, as there is no sale for them and they could not afford to feed them. Some very good horses have been killed; and unless it rains soon, many others will follow. The dry season is unparalleled in the history of Lompoc colony.

Santa Maria Times: All this talk about killing cattle to get rid of their amounts to nothing, only a damaging report. No cattle will be killed except old worn-out cows that should have been disposed of long ago. The carcasses will be fed to stock hogs, and the hogs when fattened next fall will bring more than they and the cows would both be worth in an ordinary season.

Santa Clara.

Saratoga Standard: Considerable complaining is being indulged in just now by some of our orchardists, because quite a considerable number of young apricots and prunes are falling off the trees, and some are prophesying a short crop. From personal investigation, we do not believe there is any cause for complaint or alarm.

Santa Cruz.

Pajaronian: The berry growers of the Pajaro valley are striking out for distant markets. They are trying new fields, and if the returns prove satisfactory the Pajaro strawberry may soon be found as far north as Victoria, British Columbia, and as far east as Denver. The first outside shipments were made Tuesday, direct to Tacoma and Seattle, Washington. They were sent by express, and will reach their destination this afternoon. The fruit is packed in small berry baskets, fifteen in a box. The boxes have slat sides, top and bottom, so that the berries have plenty of ventilation. The empty baskets and box weigh seven pounds, but it is intended to reduce this weight. The empty packages will not be returned.

Pajaronian: Fruit-packers have made a few purchases of cherry orchards, but they are feeling their way slowly. Unless canners make a rush for cherries the market for that fruit will be poor.

Solano.

Vacaville Reporter: Pinkham & McKevitt received a telegram yesterday announcing that their shipment of cherries to St. Paul brought \$8 per box. This shows the advantage of raising fruit in an early section. Growers at other points in the State will be willing to accept considerably less than a dollar when their fruit is ready for market and then think they are getting good prices.

Vacaville Reporter: The champion bunch of apricots for the season was brought to this office last Saturday from the Buckingham & Watson orchards. On a space of 8½ inches were, clustered as closely as they possibly could be, 36 apricots. The yield of apricots this year is very large and in many orchards fully one-half the crop has been thinned out, to save the trees and permit the balance to mature properly.

Sonoma.

Sonoma Tribune: The price of horseflesh in this valley still continues way down. A four-year-old filley from the Fair stock ranch, that would have been considered cheap at \$250 a couple of years ago, was offered for sale on our streets one day this week for \$50. The animal was a thoroughbred, well broken, gentle and perfectly sound.

It is reported that the Russian River and Magnolia canneries of Healdsburg will both be operated to their full capacity this season. They are said to have large contracts for extras of this year's production. The fruit-packing concerns of that town will employ 1000 people. The must factory there will use over 5000 tons of grapes to manufacture 3000 barrels of must concentrate for shipment abroad.

Petaluma Courier: The fruit outlook in Sonoma valley is good; the cherry and prune crop promise well in Yulupa valley. Prunes are reported as not setting well about Healdsburg; but prunes never fail there. Geyserville prunes and cherries promise a heavy yield. The buds on prunes, pears, apples, cherries and other trees here are in prime condition, and nothing but a frost can prevent our having a big crop.

Sutter.

Yuba City Farmer: The rain brightened everything up wonderfully, but it came too late to help some of the grain. Continued cool weather was hoped for, but a dry north wind set in the first of the week and blew steadily, drying the ground very much and hastening the grain into maturing too soon. On account of these unfavorable conditions the crop will not be large, especially in late-sown grain, which shows the effects of the drouth very badly. Summer-fallowed grain does not appear to be affected so much. It is to be hoped that good weather will prevail during the "filling" season. The fruit prospects remain about the same. Apricots and peaches give prospects for a big crop. Plums and prunes will be an average, while apples, pears and almonds are good.

Tulare.

West End letter to Visalia Delta: We are having high winds and sandstorms. It is almost impossible to do much work. At times, when the sand is blowing, it is so bad that teams in traveling cannot keep the road. In some places the sand has drifted three feet high. Several travelers have had sad experiences in being caught out in the storms. The Kettleman plains are nearly deserted. There will be but four families left on all the Kettleman plains, from the Fresno county line to several miles south of the Kings county line. The four families remaining will be Joe Shaw, John Lybeck, J. H. Thompson at Esperanza postoffice and E. D. Jones at the Dudley gypsum mill. There will be nothing raised in the valley this year. There is not a sprig of vegetation to be found in these parts.

Yolo.

The vineyards about Blacks have thus far escaped the cutworm. The grape crop promises well, but the grain and hay crops will be short.

Yolo Mail: The wall over the cutworm's visitation continues to be heard among the vineyardists. Otto Schluer says his fine vineyard of 30 acres has been completely stripped of leaves by the pests, and whatever crop he has it will be small in consequence. Other vineyardists report the damage to be as great. London purple is said to be a knock-em-out cure for the pest and it is being largely applied to vineyards in which the worms are beginning ravages.

Cacheville letter in Woodland Democrat: The orchardist and vineyardist in this vicinity are eagerly looking out for anything that will destroy the worms which play such havoc with the trees and vines.

G. W. Hincley of the Sky-High ranch, Winters, made his first shipment of Pringle apricots to San Francisco on Monday, April 30th.

Hyman Fairchild, who owns an orchard near Knight's Landing, reports to the Woodland Mail that much damage to prune trees has been done by the little insect pests known as thrips. These minute flies started to work on young trees planted

this spring as soon as the leaves began to show, and in many places completely denuded them of foliage. On older trees their devastation was confined to the fruit buds for the coming year. Mr. Fairchild says the damage has been quite general in prune orchards in his vicinity.

Davisville letter: Haying has already commenced on a few farms and it will become general by the latter part of this week or the first of next. Everybody seems to have settled down to the conviction that the crop will be short and the price high.

Winters letter in Dixon Tribune: I have made careful inquiry among the fruit-growers and feel that I am safe in saying that all white people who desire work can find it in the orchards this summer at a fair compensation. The fruit men seem disposed to be fair in the matter, and much of the adverse criticism heard both at home and abroad is unmerited.

Yuba.

G. W. Harney, Horticultural Commissioner of Yuba county, makes the following statement: "I find in isolated spots throughout Yuba and Sutter counties that the cutworm is doing considerable damage. I have been at work for four days and part of the nights in a vineyard about three miles north of Marysville, assisting the owner to get rid of the pest. The cutworm is really a noctuid caterpillar and is the larva of a small moth; it works at night, crawling up the trunk of the vine and devouring the new leaves and tender shoots, and hiding during the day in the clods and soft earth. From 10 to 50 worms can be found around each vine, and at the commencement of our operations I suggested hand-picking them, but this is very slow and would prove quite expensive. Then we tried tamping the earth with a heavy mallet or pounder for the purpose of crushing them into the earth, but this method was not thorough. Finally I hit on an idea that works like a charm. We banded the trunks of the vines with strips of hardware paper and painted a ring around the paper with a mixture similar to that used on sticky fly paper. This treatment has solved the problem and is cheaper and more speedy than any of the others. It is even better than spraying with an arsenical compound, which is apt to be quite as injurious to the young foliage of the vines as the worm itself.

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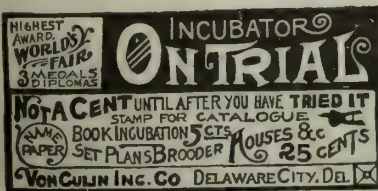


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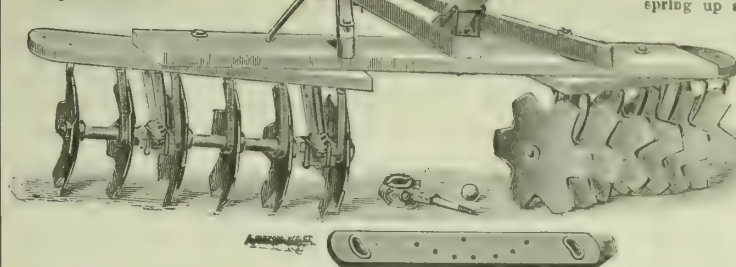
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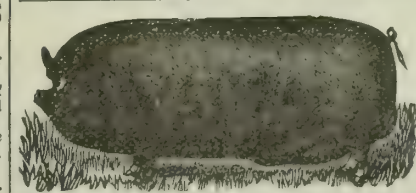
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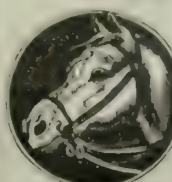
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—The Western Sugar Refinery has reduced prices of all grades $\frac{1}{8}$ c.

—The Nelson shingle mill at Anacortes, Wash., shipped 585,000 shingles East during March.

—About 200 Canadian Pacific employes have been laid off in the machine shops of the railroad at Vancouver, B. C.

—The reports of rainfall for the present season credit Auburn with 30.72 inches of rain and Newcastle with but 14.56 inches, though the two places are only four miles apart.

—Some weeks ago A. Lusk & Co., canners, were forced into insolvency. The assets were appraised at \$204,000, but the returns show that only \$784 was realized from their sale.

—Four cents is the ruling price for sheep-shearing in Grant county, Or., this season. It is "not wages," but has to be put up with, along with the reductions in other occupations.

—Out of 187 plans submitted for Washington's new State Capitol building the Commission has selected that of Ernest Flagg of New York. The building will cost \$1,000,000.

—There are now 15 oil wells flowing near Los Angeles. The yield is steadily increasing, as new wells are being bored all the time. The oil finds a ready market at \$1.50 to \$2 a barrel.

—The experiment of bringing crude oil from Peru is a success. The Bawnmore, chartered by J. W. Grace & Co., brings 840,000 gallons, which finds ready purchase by the San Francisco gas companies.

—The mills of Vancouver are exporting a good deal of lumber to Australia and Chili. The mills sell at \$7.50 per M. by the shipload, ordinary lumber, and the Tacoma Ledger says they take things easy all the while.

—The Gray's Harbor Commercial Company is filling an order for 50,000 feet of fir and spruce finish to go into a cruiser which the Cramps' shipyard at Chester, Pa., is getting ready. This is the first order from them.

—Trainloads of sheep and cattle are being moved from the San Joaquin and Salinas valleys to the stock ranges in Utah and Nevada, where the pasturage is uncommonly good this season. An emergency rate of from \$25 to \$60 a car has been made.

—The Inyo Register says: "It is to be hoped in the name of humanity that the newspapers on the other side will stop publishing the absolutely untrue story that men can obtain work on the 'Mt. Whitney canal' at big wages, and cash twice a month. So far they can get no cash at all—there has never yet been a pay-day. There is no certainty as to the time when there will be."

—The Truckee Republican says the mill-saws of the Truckee Lumber Company make welcome music in the air, announcing the opening of the lumber season. Both sides of the mill are running, and 70,000 feet per day are being turned out. Nearly 2,000,000 feet of logs are in the pond, and the Donner and Tahoe railroad will be ready to rush in 75,000 feet per day additional in a couple of weeks. The company intends to saw 10,000,000 feet of lumber this year, which will be the largest cut made in twenty years.

—Talking of the available rights of the South Yuba Water Co. and its value as a motor, Dr. Chas. Van Norden, the Auburn director of the company, says: "We could have 3000-horse power in Sacramento in a very short time. We have water enough at Newcastle for that amount now, and could get more very soon, as soon as it would be needed. We could furnish over 50,000-horse power; that is, by taking the water from our 42 canals, which aggregate 380 miles. Besides this, we are continually improving and adding others to our system. We have over \$1,500,000 of actual money in this work, and, counting what we inherited, it would bring up the actual cost of the plant to over \$3,000,000."

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and a circus on circus day are two kinds of a thing. The greatest circus is usually on the Bill-boards, and the circus on Circus Day is consequently a disappointment. There is, of course, the occasional exception which proves the rule. McCormick Binders and Mowers are an exception. Their promise on the "Bill-boards" is always fulfilled on "Circus Day." For years the makers of McCormick Grain and Grass Harvesters have been telling the World that they could and would at any time demonstrate the superiority of their machines in the actual competitive field test. The "Bill-boards" of other manufacturers have glaringly proclaimed that their machines are the best. But "Circus Day" came at length. The World's Fair urged all these manufacturers to take their machines into the field that the results might be compared. The McCormick was there; its show went on. It's promises to the World were carried out. But how about the other "great and only's"? They stayed at home consoling themselves with the reflection that "the people like to be humbugged," and their artists got up new pictures for the "Bill-boards." Before deciding about going into these field trials, the competitors of the McCormick went and examined the crops to be cut, and realizing the severity of the conditions, they said to themselves: "We don't propose to come here and compete with the McCormick;"—"a live coward is better than a dead hero;"—"a sucker is born every minute, and we'll catch some of 'em anyway." That policy may answer for the "Bill-board" sort of circus; it will not do for the McCormick. Promises must not be broken. If McCormick machines are not better than all others, they must not be so advertised. If they are so advertised, every Binder, every Reaper and every Mower must be ready at a moment's notice to go out into the field and show up. That's business. Write to the McCormick Harvesting Machine Co., Chicago;—or, better yet, call at once on your nearest McCormick agent.

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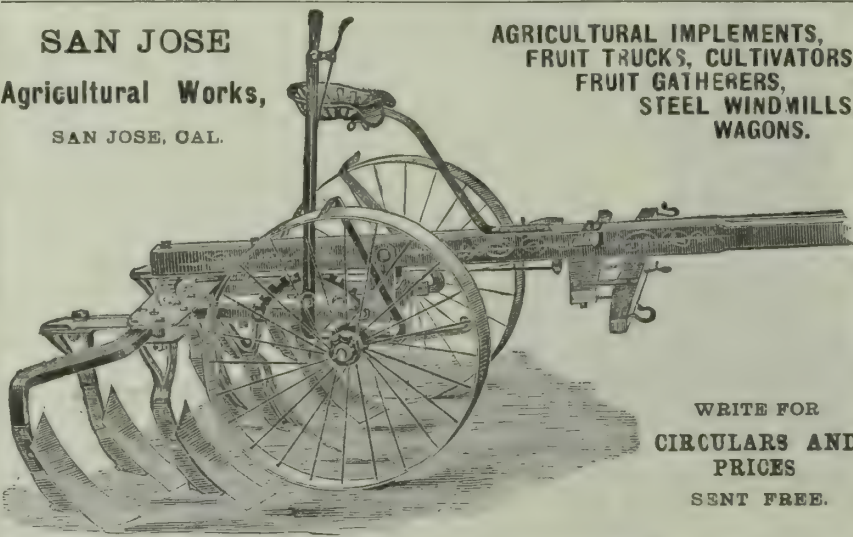
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Reserve Fund and Undivided Profits, 120,000
Dividends paid to Stockholders.... \$32,000

OFFICERS.

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I. O. STEELE.....Vice-President
ALBERT MONTPELLIER.....Cashier and Manager
FRANK McMULLEN.....Secretary

General Banking. Deposits received, Gold and Silver.
Bills of Exchange bought and sold.
Loans on wheat and country produce a specialty.
January 1, 1894. A. MONTPELLIER, Manager.

Deep Well Pumps.



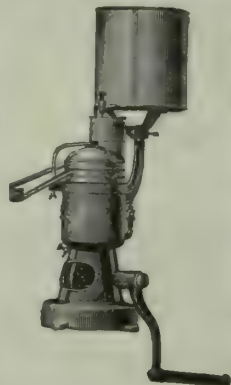
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S. H. MARKET REPORT

Market Review.

SAN FRANCISCO, May 9, 1894.

Wheat.

There is nothing doing in the export line, and very little just now on speculative account. For shipping purposes Wheat is not quotable over 90¢ 2½¢, while 95¢ per cbl. is obtainable for parcels that will pass inspection for Call Board uses. Milling Wheat is held at \$1.05 to \$1.10 per cbl.

Barley.

Prices continue stationary, with no heavy volume of trade in progress. Quotable at \$1.07½ to \$1.10 for good feed, and \$1.12½ for a choice, bright article. Brewing Barley, \$1.15 to \$1.20 per cbl.

Dried Fruits.

We quote as follows: Apples, 6½ to 7½¢ for quartered, 7 to 7½¢ for sliced, and 9 to 11¢ for evaporated; Pears, 6 to 8¢ per lb for bleached halves and 2 to 4¢ for quarters; bleached Peaches, 11 to 12½¢; sun-dried, Peaches, 8 to 9¢; Apricots, nominal; Prunes, 5½ to 6¢ for the four sizes, - for the five sizes and 4½ to 5½¢ for small; Plums, 5 to 6¢ for pitted, and 2 to 3¢ for unpitted; Figs, 3 to 4¢ for pressed and 1½ to 2¢ for unpressed; White Nectarines, - to -; Red Nectarines, - to - per lb.

Raisins.

London Layers, 60¢ to \$1; loose Muscatels, in boxes, 50 to 75¢; clusters, \$1.50 to \$1.75; loose Muscatels, in sacks, 2½ to 3¢ per lb for 3 crown and 2½ to 2½¢ for 2-crown; Dried Grapes, 1½ to 1½¢ per lb.

General Produce Market.

OATS—Prices show fair steadiness, being held in position more or less by sympathy with other articles used for feed purposes. Immediate receipts are quite equal to current wants, so that there is no marked diminution in the amount of stocks in warehouse. Strictly prime white oats are not plentiful. As a general remark it may be stated that the market is under good control and likely to be well handled in the interest of sellers. We quote prices as follows: Milling, \$1.22½ to \$1.32½; Surprise, \$1.37½ to \$1.42½; fancy feed, \$1.27½ to \$1.32½; good to choice, \$1.17½ to \$1.25; poor to fair, \$1.07½ to \$1.17½; Black, \$1.10 to \$1.22½; Red, nominal; Gray, \$1.12½ to \$1.22½ per cbl.

CORN—Is quiet at the moment, there being scarcely any inquiry, either for milling or shipping purposes. Quotable at \$1.20 to \$1.25 per cbl for Large Yellow, \$1.30 to \$1.35 for Small Yellow and \$1.25 to \$1.30 for White.

CRACKED CORN—Quotable at \$27.50 to \$28.50 per ton.

CORNMEAL—Millers quote feed at \$27.00 to \$28.00 per ton; fine kinds for the table, in large and small packages, 2½ to 3½¢ per pound.

OILCAKE MEAL—Quotable at \$37.50 per ton from the mill.

COTTONSEED OILCAKE—Quotable at \$32.50 per ton.

SEEDS—We quote: Mustard, brown, \$2.25 to \$2.50; Yellow, \$3 to \$3.50; Triese, \$2.50 to \$2.75; Canary, 3 to 4¢; Hemp, 3½ to 4½¢ per lb; Rape, 2 to 2½¢; Timothy, 6 to 6½¢ per lb; Alfalfa, 13 to 13½¢; Flax, 33 to 35¢ per cbl.

MIDDINGS—Quotable at \$19 to \$21 per ton.

BRAN—Quotable at \$17.50 to \$18 per ton.

HAY—The market is quiet and a trifle easier. More liberal arrivals of new crop can now be expected. Wire-bound Hay sells at \$1 per ton less than rope-bound hay. Following are wholesale city prices for rope-bound hay: Wheat, \$12.50 to \$17.50; Wheat and Oat, \$13 to \$17; Wild Oat, \$12 to \$15.50; Alfalfa, \$10 to \$12.50; Barley, \$11 to \$15.50; Compressed, \$12.50 to \$15.50; Stock, \$10 to \$12.50 per ton.

STRAW—Quotable at 75 to 85¢ per bale.

HOPS—Market in stagnant condition. Nominal at 14 to 16¢ per lb.

RYE—Quotable at \$1.17½ to \$1.20 per cbl.

BUCKWHEAT—Quotable at \$1 to \$1.15 per cbl.

GROUND BARLEY—Quotable at \$25 to \$26 per ton.

POTATOES—New Potatoes are increasing in supply, the receipts yesterday being nearly 900 sacks. Old are in free offering. We quote as follows: New Potatoes, ¾ to 1¢ per lb; Sweet, 75¢ to \$1.25 per cbl; Early Rose, 25 to 35¢; River Burbanks, 35 to 50¢; River Red, 20 to 30¢; Oregon Burbanks, 60 to 95¢.

ONIONS—Market not firm. We quote: New, 90¢ to \$1; Old, \$2 to \$2.25 per cbl.

DRIED PEAS—We quote: Green, \$1.50 to \$1.75; Blackeye, \$1.60 to \$1.65; Niles, \$1.50 to \$1.75 per cbl.

BEANS—The demand is light and there is no selling pressure, so that the market presents no specially interesting feature. We quote as follows: Bayos, \$2.50 to \$2.65; Butter, \$1.75 to \$1.80 for small and \$2 to \$2.10 for large; Pink, \$1.90 to \$2.05; Red, \$2 to \$2.25; Lima, - to -; Pea, \$2.35 to \$2.50; Small White, \$2.40 to \$2.65; Large White, \$2.40 to \$2.50 per cbl.

VEGETABLES—The market has attractive appearance just now, there being liberal displays of all seasonable varieties. Trade is good and general, but stocks are in excess of the demand, and consignments do not clean up readily, though dealers are willing to accommodate prices to suit the views of buyers. Canners help the situation by fair purchases, but they do not take all the surplus. Arrivals yesterday were 1440 boxes Asparagus, 520 boxes Rhubarb and 850 sacks Peas. We quote as follows: Cucumbers, 35 to 50¢ per dozen for common and 65¢ to \$1 for good to choice; Asparagus, 25¢ to 75¢ per box for the ordinary run and 90¢ to \$1 per box for choicer quality; Rhubarb, 25 to 50¢ per box; Green Peas, \$1 to \$1.25 per sk; Alameda do, 2 to 2½¢ per lb; Summer Squash, 8 to 10¢ per lb; String Beans, 5 to 6¢ per lb; Marrowfat Squash, - to -; Hubbard Squash, - to -; Green Peppers, - to - per lb; Tomatoes, \$1 to \$1.50 per box for poor to fair and \$2 to \$2.50 for good to choice; Turnips, 75¢ per cbl; Beets, 75¢ per sack; Parsnips, \$1.25 per cbl; Carrots, 35 to 40¢; Cabbage, 50 to 60¢; Garlic, 3 to 4¢ per lb; Cauliflower, 60 to 70¢ per dozen; Dry Peppers, 17½ to 20¢ per lb; Dry Okra, - to - per lb.

FRESH FRUIT—Berries are every day increasing in supply, the arrivals yesterday footing up 1100 boxes. Among the offerings was some poor stock which could not be sold for 10¢ per box and will probably have to be dumped. Choice and fancy

brands sell well. Apples are not in quick demand. We quote: Cherries, white, 25 to 60¢; black, 40¢ to \$1.25; Apples, \$1 to \$2 per box.

BERRIES—Raspberries come in slowly, only a few drawers arriving daily, with sales at 75¢ to \$1 per drawer. Gooseberries are not in favor. Receipts of Strawberries yesterday were 490 chests, quotable at \$4.50 to 7¢ per chest for Sharpless, and \$6 to 8¢ for Longworths in baskets and \$7 to 9¢ in drawers; Gooseberries, 25 to 40¢ per drawer.

CITRUS FRUIT—Oranges are cheapening, now that other fruits are coming in more freely. Limes and Lemons are in good demand. We quote: Fair to choice Navel Oranges, \$1.50 to \$2.50 per box; Seedlings, \$1 to \$1.50; Mexican Limes, \$4 to \$5 per box; Lemons, Sicily, \$4 to \$5; California Lemons, 75¢ to \$1 for common and \$1.25 to \$2 for good to choice; Bananas, \$1.50 to \$2.50 per bunch; Hawaiian Pineapples, \$2.50 to \$3; Mexican Pineapples, \$3 to \$3.50 per dozen.

NUTS—Activity is not a feature of the market. We quote: Chestnuts, 6 to 8¢ per lb; Walnuts, 6 to 7½¢ for hard shell, 8 to 9¢ for soft shell and 11 to 12½¢ for paper shell; California Almonds, 10 to 11¢ for soft shell, 6 to 7¢ for hard shell and 11 to 12½¢ for paper shell; Peanuts, 3 to 4¢; Hickory Nuts, 5 to 6¢; Filberts, 10 to 10½¢; Pecans, 5 to 8¢ for rough and 8 to 10¢ for polished; Brazil Nuts, 8 to 9¢; Cocoanuts, \$5 to \$5.50 per 100.

HONEY—Trade is light. Prices are fairly steady, more on account of light offerings than from any positive demand. Comb, 10½ to 11½¢ per lb for bright and 9 to 10¢ for dark to light amber; water white extracted, 5½¢; amber extracted, 5 to 5½¢; dark, 4 to 5¢ per lb.

BEEWAX—Quotable at 24 to 25¢ per lb.

BUTTER—Values show no strength, the tendency of the market being against sellers. The output for the season promises to be rather light in some of the bay counties and in the lower coast section, but this will be partly offset by increased production in the northern part of the State. Trade is of fairly active character, though some falling off in local consumption may be expected soon, on account of the summer vacation being at hand. We quote prices as follows: Fancy Creamery, 19 to 20¢; fancy dairy, 17 to 18¢; good to choice, 15 to 16¢; store lots, 12 to 14¢; pickled roll, new, 21 to 21½¢ per lb.

CHEESE—Moderate demand at steady prices. We quote as follows: Choice to fancy, 8½ to 9½¢; fair to good, 7 to 7½¢; Eastern, ordinary to fine, 14 to 15¢ per lb.

EGGS—Many ordinary store parcels are showing defects incident to the summer season, and ranch Eggs have the preference just now among buyers. Prices steady and likely to remain so for a time. We quote: California ranch, 15½ to 17½¢; store lots, 13 to 15¢ per dozen.

POULTRY—Old stock is plentiful, cheap and hard to sell. Young Poultry in good condition is in demand at full figures. We quote as follows: Live Turkeys—Gobblers, 8 to 10¢; Hens, 10 to 11¢; dressed Turkeys, 10¢ per lb for Gobblers and 10¢ for Hens; Roosters, \$3.25 to \$3.50 for old and \$7 to \$9 for young; Broilers, \$2 to \$3 for small and \$4.50 to \$5.50 for large; Fryers, \$5 to \$7; Hens, \$3 to \$4; Ducks, \$3 to \$4 for old and \$5 to \$7 for young; Geese, \$1 to \$1.25 for old and \$1.75 to \$2.25 for young; Pigeons, \$2 to \$2.50 per dozen.

GAME—Nominal.

PROVISIONS—The recent advance in many articles is well sustained. We quote: Eastern Sugar-cured Hams, 13 to 13½¢; California Hams, 12 to 12½¢; Bacon, Eastern, extra light, sugar-cured, 14¢; medium, 10¢; do, light, 10¢½; do, light, boneless, 12¢; light, medium, boneless, 11¢; Pork, extra clear, bbls, \$20; hf bbls, 10 to 10.50; clear, bbls, \$19; hf bbls, \$10; boneless Pig Pork, bbls, \$21.50; hf bbls, \$11; Pigs' Feet, hf bbls, \$4.75; Beef, mess, bbls, \$7.50 to \$8; do, extra mess, bbls, \$8.50 to \$9; do family, \$9.50 to \$10; extra do, \$11 to \$11.50 per bbl; do, smoked, 10¢; Pickled Tongues, hf bbls, \$8; Eastern lard, tierces, 7½ to 8¢; do prime steam, 10¢; Eastern pure, 10-lb pails, 10½¢; 5-lb pails, 10½¢; 3-lb pails, 10½¢; California, 10-lb tins, 9¢; do, 5-lb, 9½¢; do, kegs, 10½¢; do, 20-lb buckets, 10¢; compound, 7½¢ for tierces.

WOOL—There is no movement of magnitude, though stocks in local warehouses are large enough to admit of liberal operations. Prices remain steady at the old range. The weekly report of Thos. Denigan, Son & Co. says: "The trade for the past week has not been active in San Francisco, very few parcels having been sold. Considerable stock was sold in the country, however, say in Butte, Tehama, Colusa and other northern counties. These Wools brought on an average 10 to 11½¢, as compared with 13 to 15¢ in the spring of '93, and 18 to 19¢ in the spring of '92. For the past three or four days the feeling here and at the East, as to Wool, has been anything but satisfactory owing to reported prospects for the early passage of the new Tariff bill. After it is either passed or killed, the Wool trade must pick up at whatever prices are established. We quote spring: Year's fleece, ¾ lb., \$5 to 7¢; Six to eight months, San Joaquin, poor, 5 to 6¢; do fair, 7 to 9¢; Oregon and Washington: Heavy and dirty, 6 to 7¢; good to choice, 8 to 10¢; valley, 10 to 13¢. We quote fall: Northern defective, 5 to 6¢; Southern and San Joaquin, 3 to 4¢.

HIDES AND SKINS—Quotable as follows:

	Sound.	Culls.
Heavy Steers, 54 lbs up, ¾ lb.	4½ to 5¢	3½ to 4¢
Medium Steers, 48 to 56 lbs.	4 to 5¢	3 to 4¢
Light, 42 to 47 lbs.	3½ to 4¢	2½ to 3½¢
Cows, over 50 lbs.	3½ to 4¢	3 to 4¢
Light Cows, 30 to 50 lbs.	3½ to 4¢	2½ to 3½¢
Stags	3 to 4¢	2 to 3¢
Kips, 17 to 30 lbs.	4 to 5¢	3 to 4¢
Veal Skins, 10 to 17 lbs.	5 to 6¢	4 to 5¢
Calf Skins, 5 to 10 lbs.	7 to 8¢	6 to 7¢

Dry Hides, usual selection, 7¢; Dry Kips, 7¢; Calf Skins, do, 7¢; Cull Hides, Kip and Calf, 4¢; Pelts, Shearling, 10 to 20¢ each; do, short, 25 to 35¢ each; do, medium, 40 to 50¢ each; do, long wool, 50 to 75¢ each; Deer Skins, summer, 25¢; do, good medium, 15 to 20¢; do, winter, 5¢ per lb; Goat Skins, 25 to 40¢ apiece for prime to perfect, 10 to 20¢ for damaged, and 5 to 10¢ each for Kids.

TALLOW—We quote: Refined, 5½ to 5½¢; rendered, 4½ to 4½¢; country Tallow, 4 to 4½¢; Grease, 3 to 3½¢ per lb.

San Francisco Meat Market.

Beef is fairly steady in price, especially the more choice grades. Mutton is plentiful, with quotations

easy. Lamb sells at a wide range, there being much difference in the quality of offerings. The supply of calves is abundant, and sellers are at a disadvantage.

Following are the rates for whole carcasses from slaughterers to dealers:

BEEF—First quality, 5 to 6¢; second quality, 4 to 5¢; third quality, 3 to 4¢ per lb.
CALVES—Quotable at 3 to 5¢ per lb.
MUTTON—Quotable at 5 to 6¢ per lb.
LAMB—Spring, 6½ to 8¢ per lb.
PORK—Live Hogs, on foot, grain fed, heavy and medium, 4½¢; small Hogs, 4½¢; stock Hogs, 3½ to 3¾¢; dressed Hogs, 6 to 7¢ per lb.

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NOTICE is hereby given that at a meeting of the Directors of the Grangers' Business Association, held on the 11th day of April, 1894, an assessment of three dollars and seventy-five cents (\$3.75) per share was levied upon the capital stock of the Corporation, payable immediately to Charles Wood, the Secretary, at his office at 108 Davis street, San Francisco, California.

Any stock upon which this assessment shall remain unpaid on TUESDAY, the 15th day of May, 1894, will be delinquent and advertised for sale at public auction, and, unless payment is made before, will be sold on FRIDAY, June 15th, 1894, at two o'clock P. M. of said day, to pay the delinquent assessment, together with costs of advertising and expenses of sale.

CHARLES WOOD,

Secretary of Grangers' Business Association.
Office, 108 Davis street, San Francisco, Cal.

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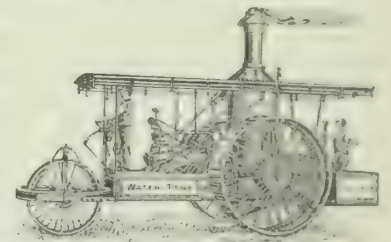
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Table of Contents.

The following brief abstract of the contents will give an idea of the branches of the subject treated:

General Plan; Discussion of the Principles of Hydraulics; Rules Deduced from Formulae; Examples and Calculations; Extensive Tables for Ready Reference; Fundamental Laws of Hydraulics Demonstrated and Expressed in Formulae and Rules; Flow of Water through Openings, Weirs, (Coefficient of Discharge, Triangular Weirs; Flow of Water over Quadrant Weirs (submerged); Application of Tables; Submerged Orifices; Flow through Orifices in Thin Partitions; Tables and Applications; Miners' Inches; Tables and Calculations; Flow of Water through Short Tubes and Compound Tubes; Flow of Water through Pipes, Tables of Velocities and Cubic Feet Flows for Given Fall per Mile and Diameter of Pipe; Coefficient for Bend—Circular and Angular; Flow through Nozzles; Inverted Siphons; Flow of Water in Open Channels; Extensive Tables; Rough and Ready Notes; Hints for Speedy and Approximate Estimates, etc.

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Usefulness of Tank Steamers.

About all the molasses which comes from Cuba to the United States is brought in the same tanks in steamships that are used to carry petroleum as a return cargo. The ship's tanks are about 16 feet deep and have a neck seven feet deep. They are pumped full of oil at Brooklyn or Philadelphia, then taken to Havana, and the oil is pumped out into the tanks of the refining plants there. Molasses is brought from the interior of the island in huge hogsheads, which are emptied into the storage tanks. A suction pump drawing about ten thousand gallons an hour fills each ship's tanks to within about two feet of the top, that amount of space being required for the expansion of the molasses. It might be supposed that the petroleum would have a bad effect on the molasses, but it has been shown that the contrary is the case; and as nearly one-half the importation is made into rum and the balance refined into sugar, a little oil is not much account. The tanks are cleaned after the molasses has been pumped out by turning in a powerful steam jet, which washes down the sides and liquefies whatever molasses may be left in the bottom of the tank, and the suction pump finishes the work. A cargo of molasses, which formerly required ten or twelve days, can now be unloaded in 48 hours, while the difference in the cost of handling, to say nothing of the saving of time, amounts to a large sum.

The Gulf Stream.

One of the natural phenomena of the earth that has been the subject of almost endless discussion is the Gulf Stream. Various theories have been advanced to account for its origin, but few of them have stood the test of investigation. One very plausible theory is that through volcanic action the basin of the sea has at some time cracked or broken, and that through these fissures water has penetrated the volcanic strata. Intensely heated by the subterranean fires, it rises to the top of the ocean and moves according to the natural law of circulatory currents. The process is as simple as the circulation in the kitchen-range boiler. The water enters the heated locality at one point, becomes hot and rushes out at another. With the extremely high temperature of volcanic matter, it is not difficult to see that there must be tremendous pressure, if the water is confined, and that an enormous quantity may be held in some cavernous basin. The illustration is easily made by the idea of dropping a V-shaped passage into the earth. The low portion is filled with hot water that pours in at one arm or end and out at the other. Given a large passageway, a suitable basin and a fairly active volcano, and a well-developed gulf stream becomes the simplest and most natural thing in the world.

The Torch Fish.

A deep-sea curiosity is the torch fish. This strange creature, with triangular jaws filled with long, slender teeth, a cartridge-shaped tongue and a body not unlike a dilapidated old shoe in shape, has upon the tip of its nose a slender stem bearing an egg-shaped object that may be illuminated at the owner's pleasure, and put out when he so pleases. The lantern does not serve as a guide to its wanderings, but is used as a trap to entice unwary and innocent food fishes. When *Linophyrne Lucifer* is hungry he lights his lamp, which is merely a phosphorescent lip to the egg-shaped body, opens his mouth, and waves before it a slender, cord-like appendage that grows beneath the lower jaw. The small fishes mistake the light for a phosphorescent insect and, in their scramble for this dainty, they sail into the capacious mouth that stands open to receive them. When he has dined to his satisfaction, he turns off the light, and goes about his business.

Conversational Sounds Among Ants.

It has been suspected that ants communicate with each other by sounds that the human ear cannot perceive. A French observer, M. C. Janet, has now succeeded in making some of their sounds audible, showing that certain species of ants—notably *Myrmica rubra* L. and *Tetramorium caespitum* L.—are in the habit of making a stridulating noise, probably by rubbing together rough parts of the body's surface. The demonstration is simple. A circle of putty is formed on a pane of glass, the ants are dropped into the center, and a glass cover is placed on the ring and pressed down until the ants have just room enough

to move about freely. Suitable air holes enable the prisoners to live in this place several days. When the glass box is held to the ear a faint murmur like the gentle boiling of a liquid in a closed vessel can be heard and then distinct stridulations in the midst of the murmuring. These sounds can be distinguished only when the ants are disturbed.

A Mile a Minute on the Sea.

A Welsh engineer has prepared designs for a vessel which he claims will attain a speed of 60 miles an hour. His proposed vessel is flat-bottomed, 550 feet long, 50 feet in width, wedge-shaped at each end for 100 feet of her length, with a displacement of some 14,600 tons. Such a vessel, fitted with 16 paddle wheels, driving at 170 revolutions a minute, this sanguine inventor believes would be propelled through the water at the rate of 60 miles an hour. This would be breaking the record with a vengeance, for the *Lucania*, which has just eclipsed all previous performances, averaged barely 22 miles an hour. The 16 paddle wheels of the proposed express passenger steamer would be placed eight on each side, one behind the other in a water channel running fore and aft just above the ship's bottom. They are of a peculiar construction, the paddle always maintaining a perpendicular position, and always entering and leaving the water at exactly the same point.

Speedy Engines.

For the past several years English and American locomotive builders have experimented on high-speed track engines, and a machine of 90 miles an hour is the best they can turn out. A Frenchman has succeeded in constructing an engine that by many tests shows a speed of 150 miles an hour. His engine does not turn the wheels, but works a dynamo, which generates a current, and this current is used to run a motor, and the motor is connected up to the wheels so that they can be revolved at any rate of speed desired, which steam in a cylinder cannot do. Of course the dynamo is located on the engine.

What Makes the Sky Blue?

If there was no dust haze above us the sky would be black. That is, we would be looking into the blackness of a limitless space. When in fine, clear weather we have a deep, rich blue above us it is caused by a haze. The particles in the haze of the heavens correspond with those of the tube in the kinoscope and the blue color is caused by the light shining through a depth of fine haze.—Science.

M. MAX SCHULER is said to have discovered, in the joints of persons attacked with chronic articular rheumatism, bacteria, which are always identical in like cases. These bacilli are short and thick, having at each end bright grains which aniline colors make still more evident. The discoverer has been able to cultivate these bacteria in bouillon, or gelatine, or on a piece of potato. Their culture requires a temperature of at least 25 degrees, and darkness is indispensable. When shall we have anti-rheumatic vaccination?

GREAT FALLS, MONT., is called the Electric City. A dam across the Missouri, at Black Eagle Falls, three miles above the town, furnishes the electric power for the street car line. Elevators, printing presses, cranes and all kinds of machinery are operated by it. Housewives cook and sew by it, merchants use it for various purposes and rock-crushers are operated by it.

A PRINTING PRESS is now building for a New York paper which will print a sheet in black ink, as usual, upon one side, while upon the other it prints four colors, and will do this at the rate of 20,000 four-page papers per hour. It not only prints, but also inserts the pages together properly, pastes them in place, and counts the papers in bundles of any desired number.

By the device of an Italian seismologist, an earthquake shock is made to light an electric lamp for a quarter of a second, causing the face of a chronometer to be photographed, and thus registering the precise time.

THE hottest place in the United States, according to the 1893 meteorological reports, is Bagdad, Arizona, where the mercury often stands as high as 140° in the shade for a week at a time.

Firing Guns at Sea.

To one unaccustomed to the experience, it is anything but pleasant to be on board a line-of-battle ship at sea when the big guns are being fired. Before they are discharged the decks are cleared for action, and all the chairs in the cabin are laid down and tied together, while every bit of movable furniture is secured. The doctor goes round and makes sure that every man has had his ears stopped with cotton wool. The concussion when the charges are fired is tremendous, and the iron-clad quivers from stem to stern with the vibrations; in fact, the shock of the explosion is so great that every pane of glass in the skylights is invariably shattered, and much of the ornamental woodwork is splintered. After a few hours of this rough play the carpenters have a busy time in making things look presentable once more, for the ship resembles a wreck when she has finished her practice. Nobody likes it. The sailors standing by the big guns sometimes find themselves thrown all in a heap across the deck, and after an hour or two officers and men become as black as sweeps. It is impossible to be well out of the way of the annoyance, though perhaps the one place in the vessel where the guns trouble the crew the least is down in the engine-room, which is below the level of the deck upon which most of the armament is put.

Electricity for Reporters.

A tiny electric light fastened to the end of a pencil is a recent invention to enable reporters to make notes in darkness, and to find the keyhole when they reach home. The latter feature of the invention is one which an experienced investigator says will be of use to every one except the man who stays down at the office so late balancing his books that on his arrival at his own door he sees double or treble. The sight of two or three illuminated keyholes would only complicate his difficulties and result in an immediate necessity for the erection of more insane asylums.

Patents Issued to Pacific Coast Inventors.

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FOR THE WEEK ENDING APRIL 24, 1894.
518,734.—GUN SIGHT—F. W. Dobbel, S. F.
518,690.—KILN—G. C. Firestone, Benicia, Cal.
518,838.—SHOULDER BRACKET—J. W. Flowers, Newport, Or.
518,839.—UNITING BALE WIRES—O. C. Frame, Pasadena, Cal.
518,690.—WATER WHEEL—A. J. Gould, Quincy, Cal.
518,755.—SWITCH—G. W. Hanner, Holbrook, A. T.
518,844.—METALLIC PACKING—F. A. Ives, Grant's Pass, Or.
518,743.—GATE—John Mason, Petaluma, Cal.
518,823.—LUBRICATOR—McIntyre & Sprague, Redlands, Cal.
518,656.—SAW HANDLE—A. B. Van Campen, Raymond, Cal.

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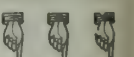
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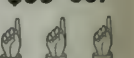
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For Sudden Toothaches.

Toothache is a little thing in the books, but many physicians would rather meet a burglar at the door on a dark night than a call to cure a bad toothache of several days' continuance. A hypodermic of morphine only postpones the evil day, and usually the patient is respectfully referred to the dentist. The tooth should not be extracted while the jaws and gums are inflamed and the latter swollen, and it is the physician's duty to treat the case until the above conditions are removed. Always keep a small vial containing the following mixture: Chloroform, gtt. x.; glycerine, gtt. x.; sat. sol. ac. carbol., gtt. x.; morphine, gr. j., with a small wad of absorbent cotton. If the offending tooth has a cavity or decayed surface saturate a small pellet of cotton with the above mixture and put into the cavity or against the decayed surface, as the case may be. Never pack the cotton in or the more is the trouble, but have the pellet small enough to enter without crowding. In most cases this will end the trouble.

When the gums are swollen and tender paint two or three times two minutes apart with a 4 per cent solution of cocaine. This time of year your patient may have been eating a good deal of fruit. The tongue and mucous membrane of the mouth are pale, he has a sour stomach, and next day the toothache will return. Give ten grains of subcarbonate of bismuth and ten grains of phenacetin at once and a smaller dose before each of the three following meals, with a laxative if needed, and stop all fruit for a few days and it will not return. The same powder every two hours, with cessation of fruit-eating, will stop the persistent, tormenting neuralgias so prevalent at this season.—Medical Record.

The Largest Map in the World.

The giant of the map family is now in course of preparation and construction at Washington, D. C. It was begun over 12 years ago under the supervision of the United States Geological Survey Corps, and it will not be more than half completed at the end of the present century. Some idea of the gigantic plans upon which this map is being constructed and of the magnitude of such an undertaking may be formed by considering the fact that the portion which delineates the little State of Connecticut and the northern tip of Long Island is six feet in length and nearly five feet wide. When this wonderful map is finished, it will indicate the exact location of every brook, creek, river, hillock, mountain, valley, farm, village, schoolhouse and city in the land, and will show every public and private road and highway as perfectly as the surveyor's map gives them in the townships. When completed, this map will cover almost an acre in superficial area. This being the case, it cannot be either hung up or spread out, and in order to make the information it contains available, it will be issued on the sectional plan.—St. Louis Republic.

Simple Cure for Hiccoughs.

"I was just about to send a cure for hiccoughs to a New York man whose case has been puzzling the doctors, when I read that he had been cured by laughing heartily. All you have to do is to lie down, stretch your head back as far as possible, open your mouth widely, then hold two fingers above the head, well back, so that you have to strain to see them, gaze intently upon them and take long, full breaths. In a short time you will be entirely relieved of the troublesome hiccoughs.

"Now, I have tried that sure cure on all sorts of cases, from the simple form to the chronic, and it works well with all. I remember it was given to a man on the way to New York to consult a specialist on his case—one of six months' standing—and it cured him in a few minutes. He turned around and said: 'What do you charge for that?' 'Nothing,' was the reply, 'except that you publish it to sufferers.'"—Pittsburg Physician.

The Earth Out of Repair.

Observations are to be made simultaneously at Washington and at Manila, in the Philippine islands, which is almost directly opposite Washington on the other side of the globe, to see what is the matter with the axis of our planet. Observations show that for some time the earth has not been revolving on that important, if imaginary support, as she has done for centuries, and scientists have decided that it is time to find out if possible what it all means. Those who have studied the subject declare that if the variations continue, in the course of some very

long and very indefinite period, we shall have an Arctic climate, and the latitude of every place on the globe will be changed, and our geographies will be useless.

An equatorial telescope has been finished and sent out to Manila, and before long, diligent inquiry will be made into the whys and wherefores of the peculiar performances of old Mother Earth. While one set of scientists is trying to find out about the axis, another party is endeavoring to find out why the magnetic needle varies so.

An Automatic Electrical Horse-Feeding Appliance.

An electric horse-feeder is a new invention for securing the regular feeding of horses during the absence from any cause of the stableman. The apparatus is very simple, the law of gravitation being depended upon to accomplish most of the work. The first requisite is an alarm clock, which should be good enough not to stop casually, but need not be expensive. The electrical plant is that needed for an ordinary electric bell, four cells of the Lelanche type of battery being sufficient for any distance up to 200 yards. The third portion of the apparatus is the feeder—that is to say, the vessel holding the grain. The clock, which is the prime mover of the whole concern, may be in the house, the harness room or anywhere, but if it be more than 200 yards away from the feeder a more powerful battery will be required.

To use the feeder, the first thing is to set the alarm of the clock at the hour at which it is desired that the horse should be fed. The food is then placed in a tin-like biscuit box, which is turned upside down and placed in the proper compartment of the shoot, when the lid of the box is drawn out; the grain then resting upon the floor of a trap-like arrangement, held in its place by a simple contrivance. When the alarm goes off a button is pressed, and the circuit is completed. A weight falls, the bottom of the feed box is released and the grain falls out into the manger.

Lives Sacrificed over Engineering Constructions.

According to M. Eiffel, the cost of any big engineering work in lives can be estimated with at least as much accuracy as the cost in money. "It has been ascertained," he said, "by statistical observation, that in engineering enterprises one man is killed for every million francs spent on the work. If you have to build a bridge at a cost of 100,000,000 francs, you know that you will kill 100 workmen." The argument, while rather an ingenious one, is not, we believe, borne out by facts. Take the Eiffel Tower, for example. Six and a half millions worth cost only four lives. The Forth Bridge, on the other hand, a contemporary points out, cost 45,000,000 francs, while the lives of 55 men were sacrificed in connection with its construction. Then in regard to the Manchester Ship Canal, only 130 lives have been lost against an expenditure of 325,000,000 francs.

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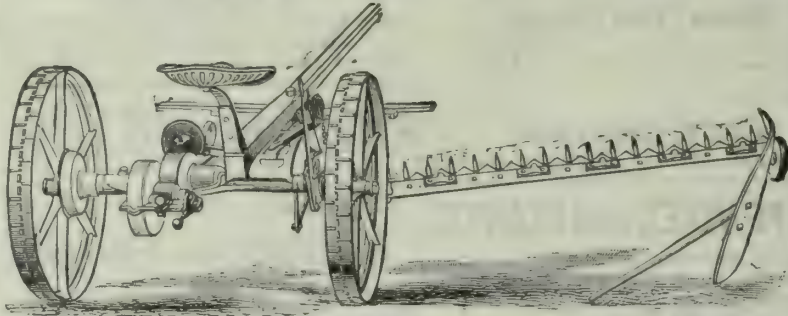
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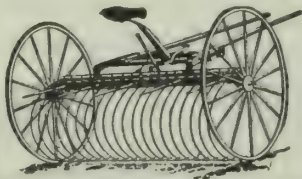
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The Situation as to Horse-Breeding.

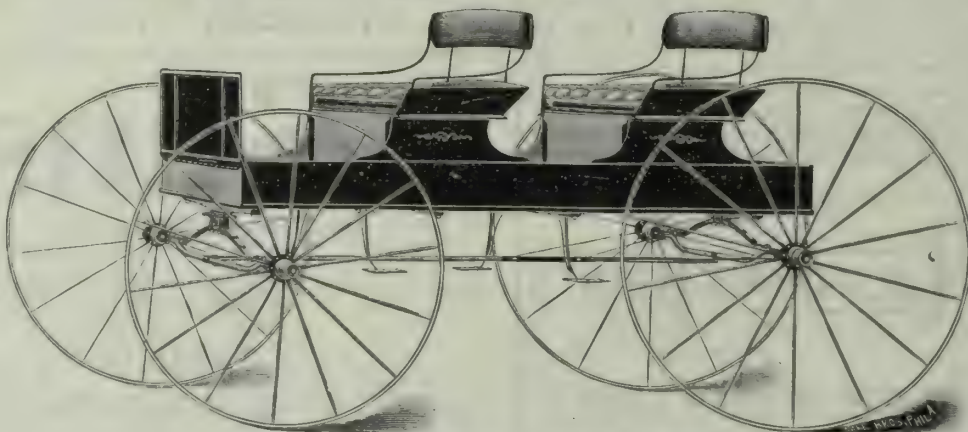
Before giving up the breeding of horses and declaring the business dead, will it not be well to take a candid practical view of the case, and before throwing away an advantage already gained, consider well what has brought on present conditions, whether the causes are likely to continue indefinitely, and if not, how best to take advantage of the change when it comes. Nearly every kind of business has had its boom and reaction during the last twenty years, and the horse business has been one of them. Its effects have been and are felt over a wider extent of country than almost any other business, because it is so intimately connected with every other. Many breeders attribute the present condition of the horse market to over-production, and the introduction of electricity. The over-production has been entirely of the cheaper grades, and this class is what is being displaced by electricity. Electricity can never take the place of the heavy draft or fine coach horse. General business depression has had more to do with the fall in the horse market than anything else. Nearly every one is economizing and doing without or making the best of what they have. That this condition will last long no one believes. A renewed demand is among the certainties of the future. When this fresh demand comes there will be a short supply to meet it, because of the falling off in breeding for the past three years and the probable continuance of it for a year or two to come. Horses, as a rule, are short-lived animals. The visible supply is being used up at a very rapid rate, and the fact that it takes five years to produce a horse ready for market is lost sight of by the croakers who are now and have been for three years crying the horse business down. Another fact is that the best time to engage in the production of any staple commodity is when it is down and not when it is booming. So many farmers have learned by sad experience that they cannot produce salable horses from ordinary stallions and have given up the attempt, that the chance for those who can and do raise first-class horses in the future will be greatly improved. Taking past experience and a candid view of the future of this country, it would seem that now is the right time for those farmers who are favorably situated to take hold of high-class horse breeding in earnest. They can now secure a choice selection of mares at moderate cost and buy first-class stallions at "rock-bottom" prices. The latter can now be bought cheaper than they are likely to be again for years, for the reason that this year will about use up the stock of imported stallions on hand and good ones cannot be imported to sell at prevailing prices. Think on these things. Should not, under the circumstances, the owners of mares be more particular than ever in their choice of stallions and breed more judiciously than ever for the inevitable future market? The present conditions are simply the result of bursting boom bubbles. This country is not going to destruction; business is settling down to a sound basis, and a healthy reaction is sure to follow. A revival in general business will bring a quick and strong demand for horses, and the man who then has good ones can name his own price for them. The main point in breeding is the choice of a stallion, and care should be taken to buy only the best and from a reputable importer.

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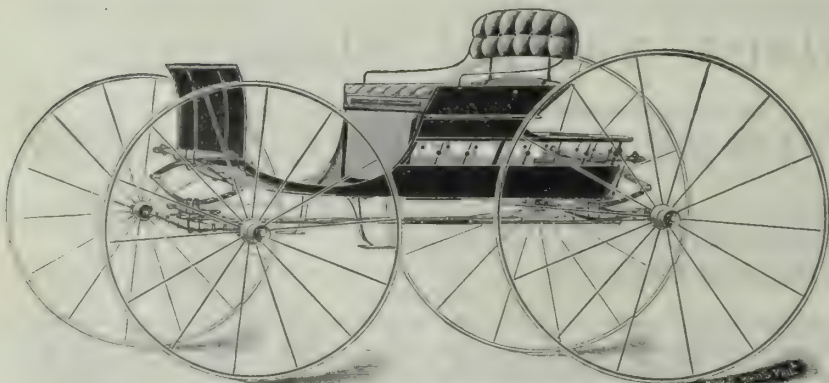
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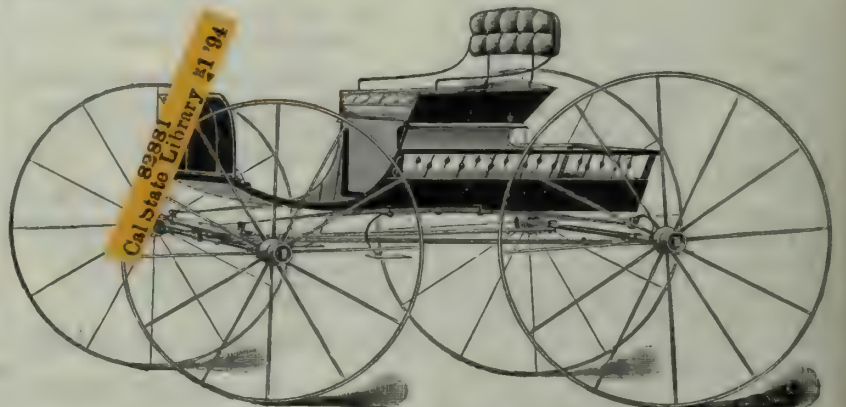


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The Italian-Swiss Agricultural Colony.

Colony enterprises properly conducted have contributed much to the development of California. There have been a few colony enterprises, the mainsprings of which have been ignorance and greed on the part of their projectors, and they have yielded only disappointment and chagrin. These are, however, fortunately the exception; the rule is, that colonies, honestly and intelligently administered, have grown into valuable producing districts, enclosing thriving towns and enjoying all the benefits of civilization and prosperity.

California colonies have often had a predominant social idea, as well as an industrial purpose. We have had successful colonies founded upon temperance, or, rather, upon total abstinence principles, and we have had colonies established upon the European idea of free production traffic and use of wine. These, too, have realized the ideals of their projectors, and have rivaled in their products the regions of historic fame whence the colonists have come to establish old cultures on new soil. Perhaps the best of this class of colony enterprises is that known as the Italian-Swiss Agricultural Colony at Asti, Sonoma county. It was organized in 1881 by A. Sbarboro and several practical viticulturists, with a capital of \$300,000. After the organization was effected a careful hunt was made for land, and finally a tract of 1500 acres in the Russian river valley, about four miles southeast of Cloverdale, was chosen. It is a very picturesque and beautiful region, with its rich valley land and its warm hillsides. Soon after improvements were begun a station was established on the line of the San Francisco and North Pacific railway, which crosses the property, and the station was named Asti—the name of the district in Italy where



SCENE AT THE ITALIAN-SWISS COLONY AT ASTI—THE OFFICERS' RESIDENCE AND SURROUNDINGS.

the finest wines are produced. The selection was made in northern Sonoma county because the climate and soil seemed to closely resemble those of the most favored parts of Italy and would favor the same line of productions.

The development of the property has been continuous and gratifying to its projectors. There are now about 1000 acres in choice foreign grape vines, 100 acres in orchard, including all fine fruits and nuts, and still new work is being done. More than 100 laborers and 50 teams are

constantly employed in clearing and making new plantations. The buildings at Asti are among the best of their class. There is a concrete winery with a capacity of over a million gallons, a brandy distillery and a full outfit of subsidiary buildings of all kinds, and a good equipment of machinery. The residence buildings are good, the officers' quarters being on a par with the finest country homes of Sonoma county.

Our engravings on this page show two scenes at

Asti. One is termed Mount Olivette and shows the vineyard in the foreground, below that the officers' residences, and beyond the roadway, on the valley floor, the thrifty young orchards of the colony. The picture reflects also the general picturesqueness of the region. The second picture shows the way the slopes are used for vines, the laborers being engaged on the winter plowing. The photograph shows that deep plowing is practiced in the center between the rows. This is not the only mark of good farming about the place. As a matter of fact, the visitor sees evidences of thrift and good work everywhere. All the work upon the vast plantations was done by experienced Italian viticulturists and horticulturists upon the same general lines they followed in the mother country. Many of the plants set out were imported direct from Italy and now the olive of Lucca and the Riviera, the Mediterranean orange, the figs of Naples, the Barbera and Nebbiolo vines of Asti thrive side by side in the colony as though they never had been disturbed from their original bed. Thus also is it with the colonists themselves; they thrive and multiply in their new homes, as is seen by the fact that the colony school upon the premises is well attended, and one family alone fills twelve sittings in the school-room.



PLOWING VINEYARD ON THE SLOPES OF THE COLONY AT ASTI.

PACIFIC RURAL PRESS.

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ALFRED HOLMAN.....Editor
E. J. WICKSON.....Special Contributor

San Francisco, May 19, 1894.

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The Week.

The rain is the main topic of conversation in all California circles this week. A downpour of such amount in the interior would have been worth millions perhaps a month ago. It will be worth less now, but is usually welcomed nevertheless. It will help all plants still in a growing stage and will facilitate orchard and vineyard cultivation notably. On another page current comments upon the storm are given in the form of local telegrams. Below we compile a table showing the rainfall figures at a number of points representing considerable areas of the State:

	May 14th.	Season to date.	Last season to date.
Stockton.....	1.14	14.33	16.22
Willows.....	.20	9.73	27.10
Orland.....	.20	10.79	24.05
Placerville.....	2.25	47.95	.....
Sacramento.....	.15	13.90	17.96
Livermore.....	.85	16.30	.....
Gilroy.....	1.00	.....	.....
Newcastle.....	.43	15.35	26.26
Marysville.....	.16	12.69	.....
Chico.....	.44	21.14	33.90
Red Bluff.....	.40	20.84	30.55
Tracy.....	1.38	.....	.....
Los Banos.....	.96	.....	.....
Turlock.....	1.10	.....	.....
Liverpool.....	1.41	.....	.....
Merced.....	1.85	9.72	.....
Fresno.....	1.02	7.04	.....
Porterville.....	.32	4.37	9.77
Selma.....	.22	5.00	.....
Hanford.....	.13	3.42	6.62
Tulare.....	.16	3.95	6.49
Bakersfield.....	.12	4.32	6.30
Caliente.....	.50	11.80	10.40
Lancaster.....	.14	3.30	4.82
Newhall.....	.41	6.94	23.14
San Fernando.....	.21	5.11	20.75
Santa Paula.....	.37	7.46	29.06
Santa Barbara.....	.51	6.75	27.18
Los Angeles.....	.10	6.82	28.66
Colton.....	.25	6.32	14.30
Anaheim.....	.10	6.02	17.97
Santa Ana.....	.13	5.93	13.95
Salinas.....	.70	.....	.....
Hollister.....	1.00	.....	.....
San Luis Obispo.....	1.00	.....	.....

The storm was of more than the usual May weight. It brought considerable snow to the mountains, which will swell the volume of the irrigation ditches by and by. On the whole, the storm brightens the outlook a little and more than compensates with its benefits for the injury it may work upon prostrate hay.

Our table serves not alone to show the weight of the last storm, but points out the grievous deficiency which some parts of the State have to endure this year.

THE STATE UNIVERSITY closes its year with the usual commencement exercises this week. The year has been a most successful one in all respects and the class graduating this year is, we believe, the largest in the history of the institution, as over 100 young men and women receive degrees. The relations between the University and the

secondary schools of the State were never so cordial and close as at present, and in other ways the University is gaining a closer hold upon popular esteem and interest. The coming class of intrants promises to be larger than any previous accession.

The Sparrow and the Thistle.

The heading is worthy of a fable or a poem, but it is merely an outcry of two grievous agricultural pests. Orchardists who find their twigs disbudged as far out as a bird can stand and pick have much of the injury to the fruit and leaf to charge up against the English sparrow, for he vies with the linnet as a disbudder. He does eat some scales, it is true, but his injury overbalances his benefits.

The work against the English sparrow is now being urged again by the Department of Agriculture at Washington. Dr. C. Hart Merriam, ornithologist of the department, says the sparrows are now spreading over the fruit-growing districts of California, where, if repressive measures are not quickly inaugurated, it is destined to levy a heavy tribute. The best way to fight the pests is by the destruction of the nests and the young. Ninety per cent of the nests may be reached by a long pole and hook. The strongholds of the sparrow in the city are the masses of Japanese and English ivy and Virginia creeper on the churches. Multitudes of young birds may be destroyed by dousing the vine with water at night.

It is doubtful whether the English sparrow will prove so great a pest in the large California orchards as it is in the small orchards and fruit gardens of the older countries. The sparrow enjoys the society of man and seeks human habitations and adjoining buildings for his resting places. In California it may be a mile across an orchard and the situation is apparently too lonely for the bird. This fact makes it possible to keep him in subjection, for destroying the nests in the vines around the houses and in the crevices of the buildings is much easier than to hunt him everywhere. We would like to hear from our readers if their observation as to the nesting of the bird agrees with this statement.

The thistle in this connection is fortunately not yet of California account. It is the Russian thistle of which frequent mention is made. The House of Representatives does not believe in Government issue with the weed. The Committee on Agriculture says the extermination of the thistle is certain if each farmer gives sufficient attention to the destruction of weeds before they mature, and the State and local authorities destroy them in the highways.

American Barley for Americans.

There is not much said of barley in the current notes on tariff discussions at Washington, and yet there is an issue in barley which is of much possible importance to California. As is generally known, Atlantic coast brewers draw their supply of barley from the great crops of Canada, and with a nominal duty the Eastern men have a prospect of commanding the brewery business of the country. But the Western interests, particularly those centered at Milwaukee, St. Louis and Cincinnati draw their supplies mainly from American farmers and can get along without the low duty on barleys of Canada. With the Canadian crop kept out by a high duty, the Westerners have a prospect of commanding the market. The Western men were well satisfied with the high rate of 40 per cent fixed in the Senate bill, but now the Eastern men are at work to bring the rate down, and they feel that they will succeed.

If the Western idea prevails, California will have a share of the stimulation of the Western brewing business. Our brewing barley is unexcelled, and whenever freight rates are decently low we can deliver it in St. Louis and make a profit. It is of considerable importance to us that this opportunity should not be closed. It is also possible, under favorable conditions, to deliver California barley in New York profitably. If the Nicaragua canal goes through, brewing barley for Eastern and European use will be a very important item of our exports. California is certainly vitally concerned in the protection of American barley.

REV. W. T. HUTCHINS, a distinguished Eastern authority on the sweet pea and author of a very able brochure entitled "All About Sweet Peas," is making a short visit to this coast. Last week he gave an informal talk at the meeting of the San Jose Floral Society on the sweet pea, illustrating with 50 varieties from the well-known seed farm of O. C. Morse & Co. of Santa Clara. On Friday of this week Mr. Hutchins visited the sweet-pea fields at Sherwood Hall, Menlo Park. We understand that Mr. Hutchins' plans are to return East quite soon, but we hope he may consent to remain longer and address other California floral societies on his favorite theme.

The Floral Element at the Midwinter Fair.

The Midwinter Fair managers are doing wisely to make as much use as possible of floral attractions in increasing their gate receipts. It is gratifying, indeed, that the love of floral beauty is so great and so general that shrewd business and show men rely strongly upon it. The gratification lies of course in the beneficent possibilities of a love of the beautiful which is thus made manifest. Let the Fair people take the money; the people generally should rejoice in the supremacy of such a wholesome sentiment.

The rose show of the State Floral Society was held at the Fair during the closing days of last week. By some it was considered the grandest display ever held in this city. Probably it was, in the line of cut flowers, far in advance of any previous exhibition, but in fine plants the Mechanics' Pavilion shows of the Floral Society have been superior. The rose show drew contributions from long distances, and there was such a wealth of bloom that the approaches to the hall, as well as its whole area, were needed to accommodate the display. It was hardly as systematically arranged and labeled as could be desired, but the visitors thought no less of it for that. They were entranced by the gorgeous displays of color, the rich perfumes, and to many it was really a revelation of beauties of which they, though living in this land of flowers, had never dreamed. To the visitor from distant parts it was an engrossing spectacle, and they lingered over it.

This week the fair managers propose to develop the spectacular features of floral display more elaborately. They have arranged to reproduce the Santa Barbara Flower Festival at the fair next Saturday, under the name of the Battle of Flowers. The fair management will erect four huge arches, one at each corner of the court, to be constructed of pampas plumes, cypress and palms. Each arch will be 25 feet high from the pavement to the top of the curve, 20 feet deep and 70 feet wide. Each arch will have 3000 plumes. There will also be a huge fishnet arch in front of the Administration building, filled with flowers.

The display is to be a competitive one, and 25 prizes aggregating \$2000 will be given, consisting of money, gold and silver medals, etc. There will be a large number of floats and other vehicles in the parade, which will pass before the judges, and no float or vehicle will be allowed in line unless decorated exclusively with natural flowers. The parade will take place at three o'clock Saturday afternoon, and will be repeated in the evening, on which occasion the Grand Court will be illuminated with fireworks. It is believed this will be the finest night display ever seen in San Francisco.

That Alleged Apricot Contest.

That Australian apricots, at any rate those grown at Mildura, are superior to Californian, has been proved by the best of all tests, for they have brought a higher price in the London market. Our dry climate, and the absence of dews at night during the harvest season, appears to be the main cause of the superiority of our fruit, which is dried twice as quick as the Californian, and has consequently a glazed appearance which the Californian cannot acquire. It appears, also, that the fierce sun heat develops the essential oils and juices of the fruit to perfection, so that it is very rich in flavor and aroma both dried and fresh.—Australian Rural Industries.

We are becoming weary of the "damnable reiteration" of this claim for superiority of Australian dried apricots. As we have previously stated, there is no evidence that the sample said to be Californian was a fair sample, nor did any one in the California interest submit it nor consent to the trial by sale in hand or market. So long as this is the case, what is the use of making such claims as our contemporary advances above? If they are to comfort local pride in the colonies they are most dangerous cordials, because they may result in incurable nausea when the best products of the two countries are really contrasted by a fair competition to which both agree.

The fact that Australian writers claim that they have advantage because of absence of dew and effects of fierce sun heat, shows that they know nothing of what they comment upon. California interior regions, where most dried apricots are produced, have dry air and hot sun than which the world has no better. The writers, who knew nothing of California or of California dried fruit, should write less about them, and when our apricots are to be sold at competitive sale in London, we should be allowed to assure ourselves that the fruit which is made to pose as ours is really a fair California product.

THOSE who desire fairs free from gambling will be interested in the statement that the New York Court of Common Pleas has handed down a decision which holds that a pool on a horse race is a lottery within the interdiction of the Constitution, and book making is illegal by the provisions of the Revised Statutes, which make unlawful all wagers, stakes or bets on a race or any unknown or contingent event whatever.

From an Independent Standpoint.

Another general overhauling of the pending tariff bill by the Democratic senatorial caucus has resulted in between five and six hundred changes; and it is claimed that in its new form it will command all the Democratic votes save only that of Senator Hill of New York. The new bill bears small resemblance to the original Wilson bill, and nothing at all is left of the philosophic theories upon which it was founded. The bill has been cut out and patched and widened and narrowed and stretched and compressed until it represents no principle or theory of tariff policy ever heard of. It is a patchwork of compromises so lacking in character and promise that no man will allow his name to be given to it. Nobody claims for it as it now stands that it is a scientific or practical adjustment of tariff policy; nobody pretends that it is more than an expedient, a mere makeshift, supported not because it is expected to accomplish any good, but because it is necessary to do something to answer the promise of the Chicago platform. Far from being urged as a settlement of our industrial troubles, it is distinctly asserted by its advocates that it is only a first step, a mere beginning in the business of tariff reform.

Of all the States having majority representation in the Senate, California alone finds no advantage in the new tariff bill as compared with the Wilson bill. In the revised edition, as in the original, our interests—fruit, wool, vineyard products, sugar, etc.—are left in the ditch. And it is impossible not to feel that Senator White is very largely to blame. If he had said to the caucus that unless the injustice to California were corrected he would vote against the bill, then our interests might have been regarded. Others—notably Messrs. Murphy of New York, Morgan of Alabama, Gorman of Maryland, Brice of Ohio and others—are said to have done this with success; but Mr. White contented himself with a spiritless "appeal," and so California got left. Now, as before, the bill stands a menace to great industries and interests in which the fortunes and hopes of California are bound up.

While the bill has been worked into shape to command the support of the majority, it has not yet come to a vote in the Senate and may not for weeks. It is in precisely the fix the Repeal bill was in last year, when the anti-repealers by all manner of dilatory tactics prevented the Senate from coming to a vote on it. If the opposition chooses, it can, under the rules of the Senate, delay it indefinitely; and they are tempted to do it by the facts that the majority is loosely organized upon half-hearted motives of expediency; that nobody is genuinely attached to the measure, and that time and the stress of a deadlock would probably smash its support into flinders. On the other hand, by a course of filibustering they would put themselves in the awkward position of practicing and upholding now what they denounced as illegitimate and immoral during the Repeal fight of last November. What the outcome will be nothing but time can tell.

If there were no other reason why the pending tariff bill should be voted down, it would be quite sufficient that it does not propose a permanent or even a quasi-permanent adjustment of tariff policy. The loudest advocates of the measure will not claim that it is more than "a beginning," which implies that the present job of tinkering is to be followed by still more tinkering. It does not need to be said that this is what the public most fears. In matters of this kind, as the country has good reason to know, uncertainty means paralysis. It means the shut-down of factories; it means stagnation in the markets for those staples which factories consume when in operation; it means enforced idleness for workmen; it means dull trade; it means universal hardship and poverty. Uncertainty is worse in its effects upon all industrial interests than the worst possible certainty could be.

Even more vehemently than it demands a just tariff, the country demands a permanent settlement of the tariff. No party has the right to impose upon the country a continuation of the confusion and paralysis which now affects our industrial system. In a situation like this, to propose a "first step" toward reform is to propose a continuance of the hardships under which the country is laboring. It is nothing less than a manifestation of business and political imbecility. The country needs, and needs badly, a fair adjustment of the tariff, but far more it needs a settlement of the matter one way or the other. Any measure which proposes less than this is an insult to the American people.

Every day brings the RURAL a half-score or more of letters commending recent suggestions for reform in our State fiscal policy. It is plain that the tax-payers are feeling sorely the weight of our costly State Government. Four millions and a half per year for the expenses of the State? Four or five or six millions more for the expenses

of county government! Three or four millions more for the expenses of municipal Government! Two or three millions more in the illegitimate form of fees to officials large and small! The aggregate is something prodigious and monstrous, and every dollar has to be earned by somebody. It was a severe tax in prosperous times; it is now a cruel hardship. It has always been a source of political corruption; it is now a source of social demoralization. The thing is intolerable, unbearable.

It is time some beginning were made to organize into a practical political force the sentiment for economic reform which seems universal. If the question of reducing expenses were put to the people in a direct and definite form it would carry ninety-nine to one. But economy is not in the interest of those who manage our political affairs; and the probability is that they will obscure the question and lead the attention of the public off to other matters—to the old and formal questions of politics. This is the usual way and there is small hope for a change now. We pay an enormous price for the luxury of standing with our several parties—no less a price than the surrender of our just purpose and genuine interests. Possibly in some future happy time people will grow so simply wise that those who think alike will vote together. But it will not be so long as each of us stupidly follows his own particular party bell-wether.

The Eastern industrial armies have been very quiet this past week. Coxey's men are in camp near Washington; Kelly's men are floating down the Des Moines river in barges; Frye's men have mostly dispersed, and nothing is heard from the New England contingent. The several Pacific coast armies still west of the Rocky mountains have broken up into mere bands of tramps and have exercised their energies chiefly in stealing trains and other lawless courses. At Rocklin, in Placer county, a crowd of Industrials undertook to rescue one of their number who had been arrested and their leader, "Col." Paisley, was killed by a constable in the scrimmage. At several points in the State of Washington there have been violent collisions between the Industrials and deputy marshals employed for the protection of trains, and several persons have been killed and wounded on both sides. So fierce is the lawless spirit at Seattle, where a gang of train-stealers is being tried, that a body of U. S. troops has been stationed there to protect the court and maintain its authority.

"Col." Paisley, the man killed at Rocklin, came from Oakland and his body was brought back for burial. An effort was made on the part of Coxey sympathizers to create a great public excitement, in which the dead man should figure as a martyr, but it failed miserably.

Interest in the movement is rapidly dying out, for upon sober second thought it is recognized, even by those who sympathize with the men, that the march to Washington is a foolish project. That the movement itself is an evidence of disease in our social and industrial system nobody denies, but it is a disease not to be cured by promoting and coddling its symptoms.

Proposed New System of Dried Fruit Grades.

A meeting of the directors of the State Fruit Exchange last week it was determined to make an effort to establish a uniform system of classification for California dried fruits. To this end the formulas printed below were prepared and will be submitted to fruit-growers generally for consideration. It is hoped that this plan or something better which it may call out will be adopted, thus doing away with the confusion of names and grades growing out of the present want of system.

In speaking of the matter Mr. John Markley, secretary of the Exchange, said that the directors hoped to make a California classification, striking out foreign terms as far as practicable. The object is to establish standards of quality for fruit in the same manner as the Produce Exchange establishes standards for cereals. The trade would perhaps not be disposed to take kindly to the new classification of our dried fruits, but the Fruit Exchange hopes to have the aid of the press in its effort. There is no reason, said Mr. Markley, why California raisins should be sold under Spanish names, or California prunes as French prunes. These products, he declared, have characteristics of their own, and it is due the State and also the interests of the growers that a proper California classification should be made and adhered to.

The proposed classification is as follows. It has been furnished to the RURAL by the president of the Exchange after careful revision:

RAISINS.

California Clusters, in place of Clusters, Spanish style or Spanish Clusters.

No. 1 California Layers, substituted for 4-crown London Layers.

No. 2 California Layers, in place of 3-crown London Layers.

No. 1 Loose, in place of 3-Crown Loose; No. 2 Loose, in place of 2-Crown Loose, and No. 3 Loose in place of 1-Crown Loose.

Seedless Muscatels: same as heretofore.

Thompson's Seedless, heretofore classified under this

name, to be classified as Thompson's Seedless Nos. 1 and 2; same with respect to Sultanias.

APRICOTS.

Large:—Made from fully ripened fruit $1\frac{1}{4}$ inches and upward in diameter to be classified as follows:

No. 1—*a*, bright in color; *b*, free from spots; *c*, rich in pulp.

No. 1 D—Same grade, slightly inferior in some point, *a*, *b* or *c*.

Medium:—Made from fully ripened fruit $1\frac{1}{2}$ inches in diameter to be classified as follows:

No. 1—*a*, bright in color; *b*, free from spots; *c*, richness of pulp.

No. 1 D—same grade, slightly inferior in points *a*, *b* or *c*.

Small:—Made from fully ripened fruit of lesser sizes than $1\frac{1}{2}$ inches in diameter.

Classifications No. 1 and No. 1 D same as above.

Ungraded:—This classification includes all merchantable fruit not fully meeting the requirements of above classifications.

PEACHES.

Large:—Made from fully ripened fruit two inches and upward in diameter:

No. 1—*a*, bright in color; *b*, free from spots; *c*, rich in pulp.

No. 1 D—Same grade, slightly inferior in above specified points.

Medium:—Made from fully ripened fruit from $1\frac{1}{2}$ to 2 inches in diameter:

No. 1 and No. 1 D, same as above.

Ungraded:—This classification includes all merchantable fruit not fully meeting the requirements of above classifications.

PRUNES.

All grades to be styled "California Prunes." Graded according to the number to the pound: 40 to 50, 50 to 60, 60 to 70, 70 to 80, 80 to 90, 90 to 100, 100 to 120, and above.

Silver prunes were classified as follows:

No. 1, bright in color; No. 1 D, brown in color; No. 2, bright; No. 2 D, brown.

Pears classified as follows:

No. 1, halves, large, bright and clean. All others by description on sample.

"D" indicates that the product is slightly off in some one of the three marked characteristics of the grade.

"Four Sizes" includes four classes, equal quantities of each: No. 1, 60 to 70; No. 2, 70 to 80; No. 3, 80 to 90; No. 4, 90 to 100.

A Cooling Chamber for Dairies.

In one of the bulletins published by the Agricultural Department of Victoria, Mr. A. N. Pearson, Agricultural Chemist, suggests the following method of cooling a dairy, which, "so far as I can see," he writes, "would meet all the requirements, would cost only £30 or £40, would be so simple that every farmer could construct it himself, and would have the advantage over machinery that it would not be liable to get out of order.

"The arrangement I propose is a small chamber six feet square and six feet high, having mud walls three feet thick, and a flat mud roof also three feet thick. There is a double door and a double window to this chamber. The chamber may be built inside a barn or shed, or it may be built outside and have a separate roof (thatch, shingle or bark) to protect it from the sun and rain. On a shelf inside the chamber are placed a few buckets having in them an ordinary freezing mixture. There are many kinds of freezing mixtures commonly used in laboratories. The following are two of the simplest:

1 part of crystallized nitrate of ammonia.
1 part of water—causes a fall of 46° Fah.

1 part of nitrate ammonia crystals.
1 part of carbonate of soda crystals.
1 part of water—causes a fall of 57° Fah.

All that is necessary is to place the crystals in the bucket, pour in the proper quantity of water, stir vigorously for a few minutes, when the temperature of the mixture will rapidly fall toward, or even below, freezing point. A few of these cold buckets placed inside the cooling chamber would soon reduce the temperature to about 50° Fah., which is as cool as is ever necessary. After the salts had once been used for cooling the resulting solution would have to be evaporated down in a copper pan (an ordinary copper boiler), so as again to re-crystallize the salts. In this way the salts would serve continuously. In very hot districts this evaporating could be done in shallow pans by the sun and hot winds. While the cream is being kept cool in the chamber the doors and windows should be kept closed, but immediately the cream cans are removed the chamber should be thrown open for ventilation, but not, however, left open so long as to admit of the walls becoming heated.

"The arrangement above suggested, of cooling buckets placed on shelves in the chamber, is the simplest; but the same principle can be applied in a different manner for larger dairies. There might, for instance, be galvanized iron trays or shelves, with salt spread over them, and a slow, continuous stream of water caused to flow over them, and so on.

"But my present aim is to devise something so simple that the selector could manage everything with his own hands and without any fear of going wrong."—Australasian.

A FRENCH ELECTRICIAN, M. Trouve, catches fish by sinking in the water a net with an incandescent lamp attached. The curious fish collect around the light, when a pneumatic tire around the edge of the net is silently inflated and rises to the surface, entrapping them without frightening them, and hence without destroying the spawn—a great drawback to ordinary net fishing.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, May 16, 1894, are from official sources, and are furnished by the U. S. Weather Bureau expressly for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total rainfall for the week.	Total seasonal rainfall to date.	Total seasonal rainfall last year to same date.	Average seasonal rainfall to date.	Maximum temperature for the week.	Minimum temperature for the week.
Yuma.....	2.16	1.65	8.16	100	60	
San Diego.....	.11	4.98	9.46	9.63	64	44
Los Angeles.....	.10	6.63	26.25	18.07	74	46
Fresno.....	.94	7.21	11.10	8.74	94	40
Sacramento.....	.34	14.53	23.73	18.35	82	40
San Francisco.....	.29	16.89	21.61	24.07	68	44
Red Bluff.....	.72	20.42	32.09	22.90	86	44
Eureka.....	.38	52.60	47.57	43.73	56	36

Crop Condition and Outlook.

Reports of the Recent Rains.

Following is a synopsis of the crop bulletin for the past week issued by Director Barwick, of the State Weather Service:

The average temperature for the week ending May 14th, compared with the normal, shows a heat deficiency over the immediate coast and adjoining counties of from three to six degrees, being deficient at San Francisco six degrees, Eureka five degrees, Los Angeles and San Diego three degrees each.

Over the upper end of the Sacramento valley there was a slight excess of heat, being one degree at Red Bluff, while at Sacramento the average was normal, but the San Joaquin valley, as judged by Fresno, had an excess of heat over normal of three degrees. This excess of heat over the interior valleys occurred during the fore part of the week, when dry northerly winds and hot weather prevailed. During the latter part of the week a deficiency of heat, as compared with the normal temperature, covered the entire State, accompanied by cool southerly and westerly winds, with night and morning fogs along the coast, the effects of which have been extremely beneficial to hay and late-sown grain, as well as fruits and berries, by retarding the rapid ripening of the two latter. Haying is in progress all over the State, and while the yield is far from being an average one, it is much better than was anticipated several weeks ago. A great deal of wheat is being cut for hay.

The rainfall during the week, which fell mostly on Sunday and Monday, as compared with the normal precipitation, shows an excess at San Francisco, Red Bluff and Fresno, and a deficiency at Eureka, Sacramento, Los Angeles and San Diego.

The prune crop is the only tree fruit that is reported deficient in yield. All the others, both fruit and berry, will give more than an average yield.

This late rain will do good to very late-sown grain, but it is feared the damage it will do to the fruit crop and the already short hay crop will be considerable if it continues. The highest temperature was 105° at Huron, Fresno county, and the lowest 28° at Yreka, Siskiyou county.

RAIN REPORTS.

As rain has fallen since correspondence to Sergt. Barwick was mailed, we omit his usual local summary and give the following dispatches:

STOCKTON, May 14.—The rainfall here for the present storm measures 1.14 inches, making for the season 14.33 inches, as against 16.22 inches last year. The rain has done a vast amount of good to the crops of this section and will largely increase the yield in all sections. Some of the heavy grain on the lowlands has been knocked down by the rain, and considerable hay has been cut; but, on the whole, the effect of the rain is of great benefit. The indications are that the storm is about over. Reports from all parts of the county are that the fall was more than an inch and that crop prospects are much improved.

SACRAMENTO, May 14.—Up to 5 P. M. to-day, .18 of an inch of rain fell here, and it has been raining lightly ever since. Some hay will suffer, but it is thought that the rain will greatly help late-sown grain. About the only fruit that can be damaged just now is cherries. The ripe ones will be likely to burst if hot weather follows the rain. The weather is quite cold, ranging to-day from 50 to 58 degrees.

CHICO, May 14.—The rain which fell last night came in good season, as haying would have commenced in many places to-day. As it is, no damage of any consequence has been done. Should the sun come out warm, the cherry crop, which, owing to the dry winds of the last three weeks is short and the fruit small, will be further damaged by cracking. Everything considered, however, the rain is highly beneficial. The total for the season is 21.32. The total for last season was 33.14.

ANDERSON, May 14.—It commenced raining here about 4 o'clock yesterday. There have been heavy showers to-day. The wind is south. This rain will help the late-sown grain and enable the fruit-growers to cultivate their orchards.

LODI, May 14.—About three-quarters of an inch of rain fell here last night and this morning. It is of great benefit to summer-fallow grain and hay. The latter crop will be remarkably large in this vicinity. The watermelon and potato crops are improved by the showers.

YUBA CITY, May 14.—Over half an inch of rain fell here last night, benefiting the grain crops and fruit interests. The weather is cool and showery.

FRESNO, May 14.—A heavy thunder storm, accompanied by rain and hail, passed over Fresno to-day. Half an inch of rain fell in a quarter of an hour.

BANNING, May 14.—The rainfall up to five o'clock this afternoon was .65 of an inch. It has been raining steadily since. Nearly an

inch must have fallen so far. It was the most violent storm experienced here in 30 years.

TRACY, May 14.—One and thirty-eight hundredths inches of rain have fallen here since one o'clock this morning. It is beneficial to grain. The injury to hay is heavy, as considerable has been cut.

CALIENTE, May 14.—A heavy thunder storm arose about three o'clock, and at this hour, eight o'clock, rain continues to pour down. Considerable rain is falling throughout the mountains in this locality. It is said that grain will now mature. The cattle men and ranchers are rejoicing over the rain, as pasture lands are greatly benefited.

LOS BANOS, May 14.—Rain began falling early to-day and has continued almost steadily, .96 of an inch having fallen. It will be of little benefit, as it is the only rain since January.

LIVERMORE, May 14.—Up to six o'clock this evening .85 of an inch of rain had fallen here. It will be of great benefit to the growing crops, especially grain. Very little hay is down, and none of that will be injured. This rain insures good crops. The total fall for the season is 16.30 inches.

MARTINEZ, May 14.—It commenced raining here last night, and poured down heavily for several hours. To-day it has been showery. A large amount of hay has been cut in this vicinity, and it is feared considerable loss will result, otherwise the rain is of much benefit.

COTTONWOOD, May 14.—A splendid rain has been falling all day over Cottonwood valley. It will injure strawberries, cherries and cut hay, but is a big benefit to all other crops.

GILROY, May 14.—Light showers fell last night, supplemented by a good steady downpour to-day. Fully an inch has fallen, which, while injuring some hay already down, is calculated to do immense benefit to growing grain, small fruits and pasturage. The farmers are feeling hopeful, especially those who had planted trees this season, from whom hope had almost fled. The season will turn out far better than anticipated. The rainfall to date is 12 inches, against 29 last season.

SALINAS, May 14.—The rainstorm of last night and to-day has amounted to over an inch and will be a great benefit to crops in this locality.

HOLLISTER, May 14.—It commenced raining this morning. Seventy-hundredths of an inch had fallen at 4 o'clock this afternoon. The prospects are good for more. It is a great benefit.

CAYUCOS, May 14.—The cloudy weather of the last few days culminated in a southeast storm, yielding an inch of rain to-day, with prospects of more to-night. Although late, it will do good. It may injure some dry feed, but will almost double the crops of late-sown grain.

PASO ROBLES, May 14.—One inch of rain has fallen here to-day.

SAN LUIS OBISPO, May 14.—There has fallen nearly an inch of rain in the last 24 hours, immensely to the benefit of stock ranges, hay and all late crops.

SONOMA, May 14.—Light rain fell here last night. The weather looked threatening all day, much to the uneasiness of our farmers, who have commenced cutting hay; also to the owners of large cherry orchards, which fruit would be seriously damaged by a continuation of last night's showers.

NAPA, May 14.—A light rain fell here last night and to-day, amounting to nearly a quarter of an inch. It will be of benefit to crops, though some little hay has been cut, which will be injured in a measure by the rain.

WINNEMUCCA (Nev.), May 14.—This section was favored by a copious rainfall last night and to-day, which insures splendid range feed for the season and the largest hay and grain yield ever harvested.

YREKA, May 14.—This county has been visited by a heavy rainfall. It is of inestimable value to the crops, as they were suffering for want of rain.

Crops, Prices, Etc.

From the Bulletin of the State Fruit Exchange, May 16th.

Cherries are very uneven throughout the shipping districts. But three or four correspondents report heavy crops and many more decidedly poor. There will certainly be no excessive crop, and if they carry well should prove remunerative for shipment. Our reports from the district where shipping has begun were mailed before the rain, but doubtless some injury has been done to the varieties now ripening.

Apricots.—There is a fine crop of apricots almost universally reported, except from the low districts where they have been killed by the frost.

Peaches.—All signs point to the largest crop of peaches ever harvested in the State. The crop is such that it will be unwise to rely on the East to absorb it all, even in the face of the failure of the Eastern crop in the early districts. The wise grower will prepare means of drying in advance, to be ready for use in case Eastern shipments are disappointing.

Pears.—The reports this week show more unevenness in Bartlett than has been hitherto reported, whether from dropping, or a revised judgment of correspondents, does not yet appear. Two-thirds, however, report heavy crops. Late pears very uneven.

Prunes.—Barring the effect of new acreage coming in, the prune crop will be very light. Some districts of limited extent report excellent prospects, but the counties yielding the main supply are universally light.

Almonds are generally reported as showing excellent prospects. Eastern Prospects.—We have no advice to change our previous reports to the effect that the apple and berry crop will be very large and formidable competitors to our own dried fruits. The Southern peach crops will be failures, or very light, and those in the northern belts better.

MARKETS.

There is no change in the market for dried fruits since last week. Except raisins, very few lots now remain in growers' hands.

In fresh fruits there are some offerings for cherries, usually at about 3½ cents for Tartarian, to 5 cents for Royal Ann, but local shippers are not inclined to take the risks which they took last year to their own great loss. We can give no reliable information, as yet, as to their carrying qualities this year, or their probable reception by Eastern consumers.

Apricots.—There is a good deal of active buying in the unorganized districts, especially at the South, at prices entirely below actual values. The favorite gamble there appears to be with Chinamen who buy up orchards at from \$40 to \$162 per acre—which are the extremes reported—on the tree, the latter presumably for large trees well loaded. The highest price reported for picked fruit from the southern country is \$25 per ton. Now our apricot crops, if well dried and properly handled, can all be exported at a profit. We know of orders for two carloads now firm in hand with a house in this city, to be bought at the limit of 15 cents for first-class goods. Of course they are to be bought as much cheaper as possible. Fifteen cents dried, allowing for a shrinkage of six to one, and two cents per dry pound for drying and sacking, which is enough, is equivalent to a little over \$40 per ton. Fifteen cents was the average price received for Moorpark apricots in 1892 by the West Side Association in Santa Clara county, and \$13.13 per hundred for all others. They are worth more than that to-day, or would be if we had any. In counties where growers have organized themselves and get information, buyers offer about \$30 per ton. In Santa Clara county there are few buyers for fresh fruit, as it is known that growers prefer to dry. Apricots could probably be bought there for about \$35 per ton for the run of the orchard. Canners are apparently unable to buy there at all, as in view of the large stock of unconsumed goods, largely bought by speculators at low prices, they are not able to pay, for the larger sizes, what growers believe them to be worth for drying.

They do not now expect to pack largely, although they will do so if they can buy fruit cheap enough.

Peaches certainly do not stand on so firm ground as apricots, as we have hitherto not been able to create much, if any, export demand. Northern growers expect much from the undoubtedly short crop East, for the shipping varieties. Canners have offered \$20 per ton for canning sizes in Sonoma county, \$25 in Napa county and \$30 per ton in Sutter county. No sales reported to us in either case. In due time we shall publish some facts which will tend to show the probabilities of values, and in the meantime those who choose to gamble in fruits before the pits are hardened must take their chances. They may come out ahead, but the chances favor the buyer who is best informed.

Pears.—\$25 per ton is the highest price reported as offered for Bartlett's, presumably for shipping.

Prunes.—In Santa Clara county \$55 is reported as offered for prunes, but none could be bought there at that price, unless from growers who never co-operate, and pay no attention to what other people know.

Some mixed orchards of apricots, peaches and prunes reported sold in unorganized counties at \$20 per ton, but as a rule, such offers are refused. Better organize and get all there is in it.

We last week gave an account of the organization and methods of business of the Campbell Fruit Union of Santa Clara county, including a detailed statement of investments. We now add some of the results of their work, as shown in the shrinkages of fruit and the amounts divided per green ton for their fruit for the two years the Union has been in operation.

RESULTS.

After paying all expenses of every kind, the Association makes its final settlement. The amounts distributed, per green ton, for 1892 and 1893, were as follows. The numbers of the grades refer to size of fruit, No. 1 being the largest:

	1892.	1893.
Apricots, No. 1.....	\$46 29	
" " 2.....	39 78	
" " 3.....	39 68	
" " 4.....	29 00	
		Average...\$23 16
Peaches, Crawford, Foster, etc., No. 1....	\$28 44	
" " " " 2.....	27 98	
" " " " 3.....	31 68	
" " " " 4.....	24 00	
		Average...\$10 86
Muir Peaches, No. 1-2.....	\$46 67	
" " 3-4.....	48 82	
		Average...\$21 16
Prunes (average).....	\$35 00	
		Average...\$34 00

The low prices received for apricots and peaches in 1893 is attributed to the fact that exceptional financial conditions rendering borrowing impossible compelled a sale of these goods early in the season, before the Southern growers had sold out. Fair prices are never expected in full-crop years until goods in hands of unorganized growers have been cleaned up.

The prices received in 1892 indicate what may happen again in years where the crop is short and shrinkage light.

SHRINKAGES.

The following table of the experience of the Campbell Union for 1892 and 1893 is worthy of careful study by those contemplating the sale of their fresh fruit to dryers.

	1892.	1893.
Apricots, No. 1.....	5.10 to 1	
" " 2.....	5.30 to 1	
" " 3.....	4.92 to 1	
" " 4.....	5.32 to 1	
		Average...5.54 to 1
Crawford Peaches, No. 1.....	5.78 to 1	
" " 2.....	5.68 to 1	
" " 3.....	4.83 to 1	
" " 4.....	5.28 to 1	
		Average...6.97 to 1
Muir Peaches, Nos. 1-2.....	3.75 to 1	
" " 3-4.....	3.50 to 1	
		Average...4.71 to 1
Salway Peaches, average.....	4.03 to 1	
		Average...5.45 to 1
Cling Peaches, average.....	5.35 to 1	
		Average...6.63 to 1

In the above tables the numbers of the grades of fruit refer to the sizes as they come from the graders, No. 1 being the largest.

The shrinkages of prunes will be taken up in a future number of the Bulletin, and we will also get the experience of some of the smaller of the drying associations, which may more nearly fit those likely to be started elsewhere.

It must be remembered that while the Campbell Society expects to invest in the end \$25 per acre for a complete, thoroughly equipped plant, with drying ground costing \$500 per acre, they began on a much more modest scale. If they had been able to get land worth not more than \$100 per acre, their present plant would have cost \$13 per acre of orchard served instead of \$18.50.

It must also be remembered that by this means all the care, worry and hard work of drying is removed from the home, the grower having only to look on and criticize the work of curing. If he or his family desire to earn some of the money spent on the fruit the works is always ready for him or them.

At Campbell probably none of the fruit is hauled more than 2½ miles to the dryer, and the majority very much less. When orchards are too much scattered to permit gathering the fruit at one drying place, the proper method is to obtain a warehouse at the most convenient shipping point and there gather, grade and sell the fruit dried at the orchards.

It may interest those who have read pension speeches to know that there are about 4000 persons living in foreign countries who receive checks from Washington quarterly in payment of pensions. There are 2000 in Canada, who receive \$345,000 a year; 600 in Germany, receiving \$98,000 a year, and 750 in Great Britain whose checks aggregate \$126,990 a year. One man in the Fiji Islands draws \$24 every three months, and four times a year checks are sent to men who are living in Africa.

A RATHER STARTLING INDUSTRIAL DEVELOPMENT is reported from Victoria, Australia, where women have been substituted for men at no fewer than 200 railway stations. The result has been a saving of \$150,000 per year in salaries. The average wage paid to a station mistress is \$100 per year, whereas "the objectionable male" used to receive \$750. But, as the Sydney Telegraph asks: "How is the Victorian woman going to support a husband and family on \$100 a year?"

A GERMAN authority is responsible for the statement that worms eat wood only to get the starch. Hence he advises that trees for telegraphic poles be girdled in the spring. The tree in its growth will then consume the starch in leaf formation, and when it dies in the autumn the wood will be starch-free, and hence will offer no attraction to the worms.

SCIENTIFIC MEN have demonstrated that a speed of 200 miles an hour can never be attained by anything that moves on wheels.

HORTICULTURE.

Pollination.

[An essay by Prof. A. J. Cook, of Claremont, Los Angeles county, at the recent meeting of the Southern California Pomological Society.]

It gives me exceeding pleasure to meet the practical pomologists of southern California. One of my pleasantest memories will ever be the valuable, instructive and most agreeable meetings of the Michigan Horticultural Society, which I helped to organize and with which I always had very intimate relationship as its entomologist, and for some years as one of the members of its executive board. The horticulturists of Michigan are an exceptional class in intelligence, in refinement, and, indeed, in all those qualities which go to make, in the highest and best sense, companionable men. It was therefore a pleasure no less than good fortune to know them and to be associated with them. To break this association, and to part company with men of such character, was one of the keen regrets in leaving the State, and the delightful work in which I had been engaged for more than a quarter of a century; yet I feel sure that it is the environment that makes these men what they are.

Success in pomology implies a very high intelligence. He who bears away this prize must read, think and study. Stupidity and indifference can never be yoke-fellows with successful fruit culture. The progressive fruit-grower must also be a man of keenest observation, and the power of accurate observation, which always makes pleasing and companionable men, opens the gate to many of the broadest avenues of success in the field of practical pomology. Again, success in fruit growing brings its patrons into close contact with nature and God's own handiwork, and so must ever tend to refine the character, to broaden the sympathies and to develop the best type of Christian manhood. Thus I was eager to come to this fruit-growers' paradise of southern California, for I longed to know and to become associated with the men who were fast bringing the pomology of California alongside, if not in the very lead of the best of the world's work in this line, as was so well demonstrated by your grand display at Chicago. Your exhibition was the remark and admiration of all visitors at the great White City. I was also glad to accept the kind invitation to take part in the discussions of this meeting, as I wished to know you and to become informed regarding the important questions connected with California pomology. As I have come to make my home in this favored clime where Pomona is queen, I shall hope to become one of you, and shall look forward to many such meetings as this, where the important questions touching the interests of fruit-growers shall be considered and settled.

I am also glad that I was asked to open the discussion on the subject of pollination. It is one that has interested me much in the past, and one to which I have given some thought, study and investigation. It is, I believe, one of first importance to the practical fruit-grower, and when it is rightly understood will change not a little the views and practices of many of our people. I need hardly state here that the essential organs of every flower are the pistils and stamens, and that for the plant to fruit it is absolutely necessary in most cases that the pollen from the anther or tip of the stamen shall reach the stigma or end of the pistil, that it may send its tubular growth down to influence the ovules in the ovary at the base of the pistil. Unless these pollen cells reach the ovules the latter are unable to develop, and in nearly all cases there will be no fruit. It is possible that in very rare cases the so-called fruit may develop without pollination, but this is never true of the seeds. This process is known as pollination, or pollinization. Fructification and fertilization are also used, but the latter may be used, and is in another sense, and is undesirable. We may speak of fertile stamens when they are able to produce pollen, and of fertile pistils when they are able to bear ovules. It is also known that many plants, including most of our cultivated fruits, especially those with showy or sweet-smelling flowers, must receive the pollen from other varieties or pollination will be imperfect or entirely ineffective; that is, if the stigma of any flower receive pollen from the same flower, or from flowers of the same tree, or from those of trees of the same variety, either no fruit will be produced or, if produced, it will be imperfect, perhaps small and seedless. In other words, much of our fruit bloom, that it may bear perfect fruit or any fruit at all, must be pollinated from some other variety, as Bartlett from Anjou, or Anjou from Clairgeau, etc. The arguments in favor of this view are drawn from the structural peculiarities of the flowers, and also from experiments. In many flowers, especially irregular ones like the orchids, the peculiar form of the flower precludes close pollination, and makes the presence of insects necessary to any possible pollination. In dioecious trees, those in which the pistillate flowers are all on one plant and the staminate all on another, cross pollination is absolutely necessary, and unless pollen is carried by the wind or insect there can be no pollination.

The willow and poplar are examples of this kind of inflorescence. You all know that some of our common varieties of strawberry are almost wholly pistillate. In other plants termed monoecious, the flowers are all either pistillate or staminate, but both kinds are on the same tree or plant. In such cases, there must be transfer of pollen, but not necessarily from a different tree. The oaks, walnuts and sycamores are all monoecious. In many hermaphrodites, plants with perfect flowers, where each flower bears both stamens and pistils, there is a very curious provision which insures cross-pollination. In some plants called dichogamous, the pollen is ripe and discharged either before or after the stigma is ripe or ready to receive it. This is seen in some of our pears, and is a common peculiarity among plants. Other hermaphrodites, known as heterogenous, have two kinds of stamens and two kinds of pistils—one

long and the other short. One set of flowers has long pistils and short stamens and the others short pistils and long stamens. In these cases insects transfer the pollen, and cross-pollination is insured. In all these cases we see that nature has fenced against close pollination; or, as some one has suggested, nature seems to abhor close pollination. The flowers have so developed in the process of evolution that cross-pollination is enforced, and in the last case we see that insects have controlled in giving trend to the development. The other argument comes from direct experimentation, and proves that many perfect flowers require cross-pollination. Flowers were emasculated just as they were opening, before the pollen was ripe—that is, the stamens were all removed. When the stigmas were ripe for the pollen, they were dusted with pollen from other blossoms on the same tree, from those on other trees of the same variety and from those of trees of other varieties. Other blossoms were covered and the stigmas dusted exclusively with pollen from their own stamens. These experiments gave different results with different fruits and with different varieties of the same fruits. Some varieties are perfectly sterile, and others perfectly pollinated with their own pollen or that of the same variety of trees, while others were imperfect in form and size and seedless if not pollinated with pollen of another variety. Many varieties, especially of plums and pears, will bear no fruit, or very imperfect fruit, if not cross-pollinated.

EXPERIMENTS IN MICHIGAN.

While in Michigan I tried, at the State Agricultural College, numerous experiments, as did my friend and colleague, Dr. W. J. Beal, that we might determine just how necessary this cross-pollination might be. Dr. Beal experimented with red clover, and I with red and Alsike clover and with several cultivated fruits, as cherries, plums, apples, pears, strawberries, raspberries and blackberries. Sets of blossoms of the same number were marked on contiguous plants or twigs and one or two of the sets, just prior to the opening of the flowers, were closely covered with cheese cloth, while the other set was left uncovered. In several cases it was noted just when the stigmas were ripe, and bees were caught and enclosed in one of the cheese cloth bags surrounding the flowers. The bees were watched and seen to work on the flowers in several of the experiments. The results published in the report of the State Board of Agriculture were surprising. The covered flowers, where bees were excluded, gave from no fruit to very little, except in the case of strawberries and blackberries, where there seemed very little difference, while the uncovered and covered where bees were enclosed in the bags with the blossoms bore well. In some of the cases, as with cherries and plums, the contrast was remarkable. In several of the experiments where bees were admitted under the covers, especially red clover, where bumble bees were enclosed in the sacks, the fruitage was equal to that of the uncovered plants.

These experiments seemed to show conclusively that cross-pollination was necessary, and that bees and other sweet-loving insects were a most important factor in securing a full crop of fruit.

It has been objected to the above experiments, that the very facts of the covers vitiated the results; that very likely the covers themselves would partially or wholly prevent the development of fruit. I would reply that in hand pollination such is not found to be the case, and that in some of the above cases the flowers were covered and bees caught and put inside the covering sacks and a good yield of fruit secured.

EXPERIMENTS AT POMONA COLLEGE, CLAREMONT, CAL.

Upon coming to this State and county, early this year, it occurred to me that it was very desirable that similar experiments should be conducted at this place.

That a thing is true in Michigan is no certain proof that it is true under the very different conditions of California. If cross-pollination is essential here where fruit culture and bee keeping alike are important industries, it is very important that it should be generally known, that the fullest benefits of such knowledge may be secured. I therefore commenced some investigations, which, though less extensive and complete than I should like, and less so than the importance of the subject demands, are as much so as the time at my command would permit. Some of the experiments, indeed we may say all of them, are yet in progress. Among deciduous fruits I have experimented on plums, cherries, apricots and pears. I am also investigating the pollination of the orange and lemon among citrus fruits. As yet I can only report on the deciduous fruits, and of these the report will be but partial. The experiments were conducted in much the same manner as in Michigan, only in every case I put bees in one of the sacks surrounding the blossoms, and in one experiment with the plum I removed one sack when the bees were working in force on the tree, and marked the blossoms on which I saw the bees alight, covering all up again as soon as I ceased watching them. I caught some of the bees and examined them with a lense and found their heads, legs and bodies well dusted with the pollen. A similar examination of the flowers showed that they had received pollen from the visiting bees. The number of blossoms in each experiment varied from 32 to over 100. As soon as the blossoms withered I removed the covers, and a week later found what seemed healthy, developing fruit in abundance on all the twigs. Thus we see that any lack as the result of close pollination does not show at once. Last Friday I examined all the twigs. The plums—two different trees in different orchards—the cherry and the pears—two trees—show not a single fruit on the twigs from which all bees were excluded, while those covered with sacks in which bees were put give on plum in one case three, in the other five; the cherry five; and the pear six and eight respectively. The limbs uncovered from the same number of blossoms give eight and five on plum; the cherry seven; and the pear eight and eleven. It will be observed that only from one-fourth to one-twentieth of the blossoms under observation have developed fruit. You all know that this is always so. The blossoms are in clusters of five, more or less, while the fruit,

if we except crab apples, is usually single. In case of oranges, how very few of the blossoms come to fruit. It is a curious and suggestive fact that all of the four covered blossoms that I actually saw the bees visit while uncovered and under observation have up to this date large, fine plums. The apricot tree is a curious exception. The number of blossoms on each twig under experiment was thirty-two. The twig covered all the time of bloom showed last Friday ten fine apricots; the one where I put the bees inside the sack, six; and the one uncovered, only five. Here the cover would seem to have been an advantage, but we can hardly see how this could be true. It seems certain that this variety of apricot does not require cross-pollination. Another fact observed makes these experiments all the more interesting. I saw many thrips on all the blossoms, especially on the oranges where I saw ten at one time on a single blossom. These minute insects would almost surely have carried the pollen from the anther to the stigma of every blossom, and without doubt in some cases from the anther of one flower to the stigma of another close by. Yet all the blossoms to which no bees had access, if we except those of the apricot, failed to develop and were presumably non-pollinated. This seems to demonstrate, or at least strongly indicates, that those fruits require cross-pollination, and that some agency is required to accomplish it.

As already stated, I am not yet ready to report on the orange. Several of my students and myself are experimenting with orange blossoms. The pollen is applied artificially by hand, and each stigma receives exclusively either the pollen from its own blossom or that from other blossoms on the same tree, or that from other trees of the same variety, or again that from blossoms of other varieties. We are awaiting results with great interest. It is a pretty well settled law that nectar, showy blossoms and fragrance in bloom are all indications of the necessity of cross-pollination, and are so many invitations to the nectar-loving insects to come to the aid of the needed and waiting blossoms. In this view, we should expect to find the orange one of the most dependent of fruits—one that, without the aid of bees and other sweet-loving insects, would be barren and unfruitful. It goes without saying that the settlement of this question experimentally is of great moment to southern California.

EXPERIMENTS OF THE DEPARTMENT OF AGRICULTURE.

After commencing this paper, I received Bulletin No. 5 of the Division of Vegetable Pathology, from the United States Department of Agriculture, on the "Pollination of Pear Flowers," by Merton B. Waite. I much regret that I did not receive this in time to fully describe the many valuable experiments, or at least to give a full summary of the important conclusions reached. The experiments seem to have been very carefully planned, very ingenious, and, from our knowledge of the men who had them in charge, we know that they would be very carefully executed. The experiments were conducted at Brockport and Rochester, New York, at Chestnut Farm, Virginia, and at Washington by Mr. Waite; and at Geneva, New York, by Mr. D. G. Fairchild. Thirty-six varieties of pears were under experiment, of which 22 were found self-sterile. Under the head of insect visitors, we note the following: "The common honey bee is the most regular, important and abundant visitor, and probably does more good than any other species." In this connection, I have in a recent letter from the distinguished horticulturist, Prof. L. H. Bailey, of Cornell University, the following: "Bees are much more effective agents in pollination than wind in our fruits, and their absence is always serious. Various other insects are capable of taking their place to a very limited extent." Mr. Waite finds that vigor of tree, condition of weather at time of blossom, and visits of insects, are all important factors in securing a crop.

[Prof. Cook then gave the same summaries of the work of the Division of Vegetable Pathology which appeared on page 345 of the RURAL PRESS of May 5th, and continued as follows:]

As I have already stated, pollen may be carried by wind or insects. I have already quoted from Prof. Bailey to the effect that in our fruits bees are much more effective agents in pollination than is the wind. This needs no argument, as the bees must be far more certain and effective factors in this important work. The thick foliage would serve as a screen to prevent pollination by the wind, while it is no bar to insect visits.

Among insects, I have found this season at Claremont that the honey bee is present a hundred to one of any other large insect that could pollinate the flowers. We have noted that Prof. Bailey and Mr. Waite both emphasize the importance of the honey bee in this necessary process of cross-pollination. For about two weeks the past season, one of our largest and most beautiful sphinx moths, *Deilephila lineata*, was exceedingly common. These humming-bird moths are very quick and active, and it is not uncommon to see great loads of pollen on their long tongues, so they must do valuable service in cross-pollination. There are several species of wild bees (*Bombus*, *Xylocopa*, *Andrena*, *Helictus*, etc.) and a few species of noctuid moths. But with the large and numerous orchards of this region, and in all the fruit sections of California, it is necessary to take action to supplement the good work of other nectar-loving insects with that of the more numerous and efficient honey bees. All other insects are sure to be fitful; they may be present in swarms one season and nearly or quite absent the next, while here in California there need never be, should never be, a scarcity of honey bees close by—I should say within one mile, not two or three as does Mr. Waite. Bees do not succumb to the California winters as they do to those East, and so will always be out in force in the early spring when the fruit trees fling out their myriads of beautiful signals to attract laborers which they ever stand ready to recompense liberally for service done. The experiments of Mr. Fairchild at Geneva, New York, who applied spray continuously to blossoms, show that too much wet prevents pollination. The experiments of Dr. B. D. Halstead of New Jersey (Report New Jersey Station, 1890,) proved that pollen con-

tinuously wet is impotent. As pollen grows in water, is it not probable that these failures resulted from the fact that the wet pollen cannot reach the seed bed—the stigma? Rains may wash the pollen off, or prevent its reaching the stigma in condition to grow, but, I take it, here in California either event will be the rare exception. The foliage stands as a huge umbrella to prevent the washing, which can occur only in very severe rains, and heavy rains are too infrequent to prevent the transfer of dry and suitable pollen at some period of bloom; thus the most we may fear from rains is, that they may shut the bees in the hives. Cold winds and rains may work such mischief occasionally to a limited extent even in this favored region, though the long season of bloom makes even such partial disaster unlikely. Abundant bees close at hand, with wind screens to favor flight, will make them exceedingly rare and improbable. We all know that too heavy bearing is not desirable, and I believe that the weather will nearly always permit enough visits of bees, if we encourage their visits as suggested above, to secure as much fruit every season as will be desirable and profitable.

We need more of such experimentation in southern California. But we may wisely urge, even now, the setting of mixed varieties of our various fruits, and those that blossom at the same time, in contiguous rows or at least near together, and that a good apiary be within a mile of every large orchard. If we observe these precautions and care well for our orchards, that the trees may be kept in full strength and vigor, I am persuaded that in this land of warmth, sunshine and exceeding fertility we may reasonably expect a full crop of fruit each season.

FRUIT MARKETING.

Selling Fruit in the Orient.

We have sent some fruit to the cities of the east coast of Asia for years, and though it is not likely that any very large outlet will be found in that direction, it is well to keep it in mind. It seems that a Washington grower, Frank Alling of Tacoma, is making a good record in that direction, and he writes of his experience to the *Northwest Horticulturist*. We quote the following:

First, have the boxes made to order; the material of spruce dressed on both sides, about 2½ inches shorter than common apple box and a little more shallow, so as to hold about 30 pounds. The top and bottom are each of one single board and made as near air-tight as possible, no opening of any kind permitted. When ready to pack the apples are hand-picked, carefully assorted, sized and placed on packing table near the trees, where each specimen is wrapped with four plys of good tissue paper by rolling on the side of each and twisted until the fruit is almost hermetically sealed, then packed in the box endwise. Each box is first lined with some brilliant colored paper, with end projecting so when the box is filled the top is covered over with the paper.

In making the box, common square nails are used to nail on sides and bottom because they hold the box together more firmly than wire nails, but wire nails are used in nailing on the top.

An inch strip is nailed around the edge of the box on top and over this a second cover is placed. This space one inch deep between the two covers is filled with advertising matter of every description pertaining to the State of Washington, and Tacoma in particular, including wholesale price lists of the various wholesale houses and of the manufacturers of Tacoma; also maps and other pamphlets published during the last three years. When ready to place the wrapped fruit in the box put in three or four tiers deep, according to size. Six sheets of the tissue paper are placed between each layer of the fruit.

In packing pears only two courses are placed in each box. These boxes are made large enough to hold 48 average specimens wrapped same as the apples. Bartlett pears have been picked when only three fourths grown, green and hard as a gourd, but after passing through the different temperatures en route, arrive in a golden yellow, mellow and delicious condition, with the flavor most superb.

While en voyage to Yokohama from Tacoma the pears are placed between decks, but after reaching the latter port they are placed in cold storage while being reshipped to Chinese ports.

Prunes and plums are shipped in air-tight trays wrapped same as apples. Boxes are 15 inches wide and 24 inches long, deep enough to contain only one layer of fruit in each box or tray. The fruit is picked ripe but while still hard. After filling the trays and nailing the covers, six trays are crated together. The plums and prunes are placed in cold storage immediately when loaded at Tacoma.

A portion of the fruit shipped has been sold at public auction on arrival at these ports at very handsome prices. Fruits shipped early in the season sell at extremely high figures. Besides the quantity sold I have given 162 boxes, which were distributed in various ports of the Orient, to advertise the Pacific Northwest.

If some of the principal prune-growers will contribute samples with a view to working up a trade, and will correspond with me, I will give directions for size of packages and how to proceed. The ordinary 25-pound prune box is altogether too large for samples.

[To show the condition of fruits, shipped by Mr. Alling, on arrival at the oriental points, the following letter from Captain H. J. Carrew, written at Kobe, Japan, is self-explanatory and is only one out of a large number of testimonials which the shipper has received.—ED.]

Dear Mr. Alling:—I had just written you and got nicely advanced with the mid-day meal when a coolie appeared with a box addressed to me. On opening it we were delighted to find a carefully packed lot of fruits—apples and pears—so fresh and firm that the cold dew of the ice house was still on them and they seemed to have been packed only yesterday. The pears were delicious indeed, and all the greater surprise, as it is understood that they could not be got to keep here.

They have been carefully selected and handled, and the packing all that could be desired.

The Gravenstein is a particularly juicy, mellow fruit, closely resembling a very choice English apple. Those we have been getting occasionally in the markets here are all but tasteless, the predominating flavor being a combination of sawdust, turpentine and rotten straw, so that a California apple is looked upon with suspicion. Yours, however, owing to the causes I have enumerated, could not be improved on. It is a triumph of success to have them landed in such hot weather so fresh, and certainly points out how it can be made a success.

In another letter, referring to a different shipment, the same writer states: "The whole of the fruit came to hand in first-class order. Baldwin apples are still perfect. Thanks for the scientific packing adopted."

We print the above as we find it. So far as the reflections on the California apple are concerned, it must be claimed that they are probably misplaced. It is a long time since California packed apples in straw and the writer must have been going to some early volume of his memory for his facts. However, the article gives information of a packing which does carry well, and all our shippers should know of it.—ED.

What a St. Louis Receiver Thinks of Soliciting in California.

The St. Louis correspondent of the *N. Y. Fruit Trade Journal* gives the following rather rich paragraph:

The business acquired through a trip to the California fruit regions just now—or during the past month for that matter—will prove mighty small, according to Charles Gerber of the Gerber Fruit Co., who returned last week from the Golden State. Mr. Gerber, who represented the California Fruit Union here during the past nine years, concluded to go out four weeks ago to see where he was at in the race, and he declares there are no growers around waiting for drummers to tell them what to do with their fruit this season. All the principal producers and packers will, it appears, remain with the firms they operated with heretofore, and the houses not having such connections will have to buy their fruits. Therefore a commercial tourist who has lately been unfortunate enough to engage in such an extensive and expensive trip will learn that the profits of the venture would be hardly sufficient to enable him to return with a section of Coxey's army.

SHEEP AND WOOL.

How to Shear a Sheep.

It may seem rather untimely to discuss sheep-shearing when wool is of such little account, but this will not always be the case and it is well in dullness to prepare for activity. We find in a letter by R. Gibson to the *Breeders' Gazette* what may be called high art in sheep-shearing, and we quote the following:

As in sowing grain by hand (now nearly obsolete) I use the left equally as well as the right, so in shearing sheep the left should be used as well as the right; in fact, I do better work with the left, and I was taught to "rib them"—that is, make each stroke meet at backbone, shearing the sides from belly to back, by so doing meeting the lay of the wool and enabling the operator to take it off evenly and both sides alike. And the difference it makes in the appearance of a fat sheep sent to market just out of its wool no one can imagine except those who have seen it.

The shearing process was about as follows: One man to catch and belt, or cut off, any locks of dirty wool, also to wind and tie up the fleeces. The shearer turned up the sheep, letting it sit upon its rump, then placed his toes well under and knees close to body. Commencing under right ear, with right hand open a narrow strip to the brisket, which trim, then turn oneself to the other side, shearing around from open part to center of neck; thence down to shoulder, which when reached the head of the sheep is allowed to hang between the shearer's legs, keeping the knees close up to the shoulder, causing a convex surface and stretching the skin tight so that it does not run in front of shears. Continue in this position until the hip is reached. I should have mentioned that when we come to the shoulder another strip is opened from the bare spot on the fore flank to the bare spot under the hind flank; and also to keep feeling with left hand for the center of the back, to shear just so far and no farther; in fact, when shearing for prizes the shears are often run right down the center as a guide. Again, by pulling up the shoulder to its natural position occasionally one can tell whether the lines are perfectly straight and at right angles to the backbone. Before laying on the side put the left hand on the stifle joint so as to press and hold out the hind leg, then run the points of the shears once from lowest point where wool grows up along the leg bone. This opens up the fleece nicely, and it is one of the hardest places for an amateur to work at unless done as directed. When placed on the side put the toe of the right foot over the neck, which will hold the sheep down without pressing upon it. Now let your strips point a little upward or toward the head, so that when finished near the tail they point say at an angle of 45 degrees. Trim belly, etc., when down, also inside of legs. When that is completed set up on rump again, getting toes well under, and after shearing the neck take left hand and so continue until finished, when if well done the sheep will look like a barrel with hoops around about one-half to three-fourths of an inch apart, as regularly and truly as though done with square and compass. When skillfully performed it is a work of art; it cannot be learned in a day, but like every work that the hand of man is required to do, the most simple as well as the most intricate, there is a right and a wrong way of doing it, and it is just as easy to learn the right way as the wrong.

All this I have no doubt will act as a red rag to a bull,

and I shall have some one jumping on me and saying, "All fudge; what does it matter so long as you get the wool off?" I will anticipate by replying nothing where you sell to the buyer by weight or to one who has no eye to the niceties of art farming, who cares not whether his fences are parallel, or his plowing well done and furrows straight.

And here a thought strikes me, that a field well plowed very much resembles a sheep well shorn; each furrow slice should be of exact width and depth with its neighbor, likewise the furrow slice of wool should be of same width, and as the good plowman carefully gauges his land so that the two sides at the finish are exactly parallel, so should the strokes of the shears meet truly at the back from both sides. A man who does not care to have his sheep nicely shorn, or fields well plowed, his corn truly marked, or buildings and surroundings neat and tidy, gates well hung, would probably prefer bars and leave his reaper and hay-rake in the fence corner of the field where last used so as to know exactly where to find them. These little niceties may appear childish and of no importance, but it was not so considered in England, where the eye of the purchaser had first to be attracted. There even the butcher's sheep in the fall and winter had the shears run over them before going to market, and in some counties they were colored; not that it made the sheep any heavier, but it made the flock look more uniform and caught the eye. And I am sure where a pure-bred flock is kept and when buyers may be expected at any time it often means the difference between making a sale or losing a customer.

POULTRY YARD.

Climate and the Selection of Breeds.

Through selection and the nurturing care given our domestic fowls, they have been brought, not only to a high state of perfection of plumage and great prolificness, but are widely disseminated and habituated to varying conditions of climate, the same breeds being found in extreme latitudes, from bleak Canada to the semi-tropical regions of our southernmost States; and these facts support the presumption that there is scarcely any limit to man's control over the improvement and multiplication of breeds and varieties of poultry.

A close observer will, however, discover a marked difference in the physical characteristics and constitutional vigor of the various breeds under dissimilar conditions of climate and environment, strongly suggesting a varying degree of adaptability to widely differing conditions, and the subject is of sufficient importance to engage the serious consideration of the fancier who would secure perfection of form and plumage in his fowls. If he wisely select a breed suited to the climate and geographical situation of his home, he has eliminated one important factor of the problem. No matter where situated, there will always be a half dozen or more breeds from which he may choose as adapted to his locality, so that a choice is not greatly restricted. The origin of the several breeds should be studied, the climate of their native homes ascertained, as well as all the conditions under which they attain their greatest perfection. Possessed of this information, the fancier is in a position to act intelligently in the selection of the breed or breeds he will keep.

To illustrate our point: The mammoth Asiatics, with their profuse feather development, proneness to fat, small facial appendages and quiet dispositions, admirably fit them to withstand a cold climate; and following them, and possessing many of the same characteristics, are the Plymouth Rocks and Wyandottes, which, however, are adapted to a wider range of latitude. We would naturally expect these hardy breeds to thrive in our Northern States, and there we find them at the height of their perfection. New England is the home of the Light Brahma and Plymouth Rock, and the Wyandotte is also of northern origin, and we find that latitude maintaining its supremacy in the production of these breeds, and also of the Cochins and Langshans. Transferred to the warmer regions in our Southern States, the Asiatics deteriorate in size, in perfection of plumage and in productiveness. Without the utmost care in feeding, they succumb to fatty degeneration and lose their vitality. The Plymouth Rock and Wyandotte, while less subject to this deterioration, nevertheless suffer in vigor and are less profitable as general-purpose fowls. Given ample range and careful attention, the above-mentioned breeds may be profitably kept in the Middle States, but are not to be recommended for the South.

The medium and small breeds enjoy a greater adaptability to varying conditions of climate; but, as a rule, the breeds prolific in egg production, and also the Games and most varieties of Bantams, do best in warm countries. In the breeds noted as layers a very large proportion of the food consumed goes into the manufacture of eggs, which causes a drain on the system and renders them less able to withstand the rigors and violent changes of a northern climate. Thus we find that the Hamburg, Polish, Mediterranean and French breeds, noted as layers, are, with the exception of the Leghorn perhaps, classed as delicate, and a warm, even temperature is favorable to their well-being. That they are successfully bred in cold countries does not disprove this assertion, as man can discount the evil effects of cold to a great degree by warm housing and generous feeding, while in the case of the larger breeds transferred to the South, he is powerless to counteract the deleterious influences of extreme heat.

Extremes of either heat or cold are injurious, and especially sudden changes of temperature. There is for every species, and even for every individual, a mean temperature most conducive to health, and any marked departure from this optimum is detrimental. Equability is most important; and even though a climate be moderately cold, if the fluctuations of temperature are confined within narrow limits, it is far more desirable than a warmer but more variable climate. A considerable degree of moisture appears

to be favorable to poultry, as it is to many forms of animal life. These conditions of climate, equability and humidity are notably found in Great Britain, which explains in part the superiority of English-bred fowls of many varieties. For the reasons stated, an insular or coast climate is generally to be preferred to an interior, continental climate.

When we consider that warmth is essential to the multiplication of a species, it may seem paradoxical to assert that vigor and perfection of form are much oftener attained in a cold climate than in a warm one. Nevertheless, this is an established fact. It must be remembered that when cold acts directly, it will be the least vigorous of a breed which succumbs, leaving the hardy ones to perpetuate the race; whereas in a warm climate the weak are favored and breed with equal facility, and the species loses its stamina and soon degenerates.

In warm countries, parasites which war against our domestic animals are more numerous, and epidemics of more frequent occurrence. So it will be seen that the influence of a warm climate, favorable to procreation, is opposed by other restrictive influences.

The foregoing suggestions are offered as "food for thought," to be investigated by the acquisitive fancier at his pleasure. It opens up a wide field for profitable study.—Jos. H. Hamill of Arizona in Poultry Monthly.

SWINE YARD.

Berkshire Swine at the State Fair.

The California breeders of Berkshire swine are making preparations for the largest and best exhibit of Berkshire swine at the 1894 State Fair that has ever been seen.

The American Berkshire Association has agreed to aid our breeders in this matter by the offer of the following liberal premiums, valued at \$50, for exhibits of Berkshires made at our State Fair next fall; viz., the first five or the second five volumes of the record of the American Berkshire Association necessary to complete the set of the successful competitor, and valued at \$5 per volume.

(a) Best breeding pen of Berkshires registered in the American Berkshire Record, to consist of a boar and three sows over one year of age, owned by a resident of the State or province in which the fair is held, the first five or the second five volumes of the Berkshire Record, valued at \$25.

(b) Best breeding pen of Berkshires registered in the American Berkshire Record, to consist of a boar and three sows under one year of age, owned by a resident of the State or province in which the fair is held, the first five or the second five volumes of the Berkshire Record, valued at \$25.

Conditions: First, that the boars and sows competing for the prizes specified above be recorded in the American Berkshire Record prior to date of entry at the fair, and that a list of such entries be sent the secretary of this association.

Second, that there shall be not less than two competitors for each of the prizes.

Third, that no animals competing for the above prizes will be allowed to show for said premiums at more than one State or provincial fair in 1894.

All the breeders of Berkshires in California are earnestly requested to make an exhibit at the next fair for one or both of the premiums named above, which, with the regular cash premiums offered by the State Fair Association, should ensure a great show of Berkshires at the fair next fall.

THOMAS J. KERNS,
Vice-President California.
Downey, Cal.

ANOTHER BERKSHIRE PREMIUM.

* We find the following in the *Breeders' Gazette*:

For the purpose of directing the attention of the breeder, feeder and dealer in pork products to the great importance of attaining a more general and higher degree of excellence in the production and preparation of the best quality of Berkshire ham, Mr. A. J. Lovejoy of Roscoe, Ill., offers a premium for the best ham exhibited by a Berkshire breeder residing in the United States or the Provinces of Ontario or Quebec, Canada. The premium will consist of a boar and two sow pigs of his own breeding that could not be purchased at private sale for \$100 in cash.

CONDITIONS.

1. That the ham entered in competition for the above prize must be from a pure-bred and recorded Berkshire barrow.

2. That early notice of intention to compete for said premium must be filed with the secretary of the American Berkshire Association, Col. Charles F. Mills, Springfield, Ill.

3. That each competitor shall file with his entry a full and complete statement of the method of feeding the barrow and detailed information concerning the preparation, curing and handling of the ham from slaughter to the date of shipment of the ham to the Committee on Awards.

4. The above premium is offered for the purpose of developing data of the greatest value to swine-breeders and dealers in pork products; and while the exact weight and variety of the ration fed the barrow for this competition is not required, competitors are earnestly requested to keep accurate account of the weight and report each kind of food consumed by the barrow prior to killing.

5. Entries on the form prescribed by the American Berkshire Association must be filed for the above premium with the secretary of the association prior to Dec. 31, 1894.

6. The time and place for competition in each State will be announced so as to give ample time for the curing of the ham and completing arrangements for the State competition.

7. The selection of the best ham from each State to compete for this international premium will be made by

three disinterested and reputable residents of the respective States. The ham selected by the State committee will then be forwarded to the International Jury of Awards for the final competition. On receipt of the report of said committee at the office of the American Berkshire Association, the premium will be awarded and the pigs shipped to the successful competitor.

THE DAIRY.

Points for the Churn Room.

In a recent Farmers' Institute there was a discussion on butter making, in which H. B. Gurler led and answered questions as follows:

I have used the box and barrel churn for 20 years. I will not make the claim that they are the best churns that are made, but there are some good points about them. One is that the cream has no place to adhere and not become equally churned. When cream can gather in any place and not receive the necessary churning, it causes an increased loss in the buttermilk; here is where we have an advantage over the dash churn and other kinds that allow cream to accumulate above the cream line in the churn. Another advantage of the box and barrel churn is that the temperature of the cream is less affected by the temperature of the room in which the churning is being done. I have known butter-makers that would pay no attention to the temperature of the cream in the churn after the churn was started. This way answers in cold weather, but in hot weather the temperature of the cream must be watched, and if it gets too high put some ice, finely broken, into the churn. It is best to control the temperature without the use of ice or water in the cream, but it is better to use them and keep control of the temperature than to lose control of the temperature.

Butter color, when used, should be added to the cream before the churn is started. When you do not know how much color to use, be sure and not put in too much, and if the color is not high enough, add more color to the salt before it is put into the butter. I have done this many times. When color is put into the salt it should be thoroughly mixed with the salt before it is put into the butter.

Cream should always be strained through a perforated tin or a wire strainer into the churn. This breaks up all thick cream, and helps to get it into good condition to churn. When cream is being churned that has a large amount of milk in it, the strainer is a help, especially if the milk is soured or curdled, as it will break up the curd into small particles that can be removed by careful working. In such cases, when the butter has gathered in granules large enough to prevent a waste or loss through the strainer, stop the churn and draw off a part of the buttermilk, and then put in water and agitate it gently, and draw off most of the water, leaving enough to float the butter, as the particles of curd are heavier than the butter or water and will sink to the bottom of the churn when liberated from the butter, and can be drawn out with the wash water. But if the butter is allowed to settle down to these particles of curd they adhere to the butter, and cannot be got out by washing. The cream should not be allowed to become sufficiently sour to cause this condition, but we sometimes get caught by a sudden change in the weather or some other cause, and then should know how to make the best of the situation.

Q.—Do you mean to say that we should stop washing butter?

A.—No, sir; I am not prepared to say that, but if you can get the butter together at a temperature of 54 degrees or below, you are perfectly safe to handle that butter without washing. But I would not think of handling butter without washing that had been gathered at 62 or 64 degrees, for I think I would have trouble.

Mr. Dexter—I understand that that experiment was to bear on the question of the effect water has to take away the flavor from the butter, and the result seems to show that water does do that. Did you take that butter directly from the buttermilk when you began to work it?

A.—Yes, sir; we drew the buttermilk from the churn. We used no water at all in connection with the butter; yet there was no buttermilk shown in the brine, nor was there any milkiness in the butter.

Mr. Dexter—Here comes a point: Admitting all that you say, that this is desirable, I think that it is not safe to make this butter, as a general thing, without washing.

Mr. Gurler—When we can control the conditions of the rooms and other things, it will be safe to say that a man can make his butter without washing. But to the general maker of butter it is not safe for him to try that. We have got to approach that by degrees. I am satisfied that butter has better keeping qualities when churned at lower temperature.

Mr. Dexter—I know that is so. Put into cold storage, it would be hard work for a man to sell me butter that had been worked at 64 degrees.

Q.—Did you put in the same amount of salt into the first lot of butter that you did into the second?

A.—Yes, sir; the proportions were the same.

Q.—Did it show the same amount after it was packed?

A.—The butter that was not washed showed less salt at that stage.

Q.—Did you use any water on the butter worker?

A.—No, sir; the lot of butter that was washed was washed before it was taken to the butter worker, but neither lot was washed there.

Q.—Is not the ripening of the cream the most important thing in this?

A.—There is much less at stake when you churn at lower temperature than at the higher temperature. If you churn at 58-62 degrees, it is more important to look after the ripening of the cream than when the churning is ten degrees cooler.

THE IRRIGATIONIST.

How to Overcome a Dry Season.

James Boyd of Riverside gives the *Rural Californian* a few suggestions on the above subject, which we shall copy below. We think Mr. Boyd is mistaken as to the efficacy of rubbish in drawing moisture to the soil from the atmosphere. Our observation is that such mulch or rubbish tends to prevent access of atmospheric moisture to the soil. He is of course right in holding that the mulch prevents evaporation from the soil, and in that way it saves more than is lost by shutting off atmospheric moisture. For this reason a mulch is valuable, and not for the second reason which Mr. Boyd cites. We quote as follows:

In view of a possible dry season and consequent shrinkage in the volume of our mountain streams, it behooves those who are liable to a shortage to be casting about for ways and means by which they may tide over the emergency as well as they possibly can.

As a matter of fact, although we have had more rain than in some former years, when we have not been threatened by such probable injury, the mountain streams are not much fuller than they were at the end of the irrigating season last year. The reason for this is that we have not had any heavy rains or deep snows, and what fell mostly evaporated and got lost in the surface ground, while at the present time there is no body of snow in the mountains worth mentioning. How far this may affect springs and artesian wells remains to be seen. It is, however, well known that some artesian wells are very much affected by a dry season and are apt to run dry at the end of our long dry summers. This is mostly in places near the coast, where the presumption is that they are fed by the mountain streams that dry up before they reach the ocean. Just how long it may take snow or rain that falls on Baldy or Greyback mountains to reach the valleys where the water finds outlet in springs and artesian wells has never been determined—at least there has been nothing so far demonstrated going to show that one or even two comparatively dry seasons have any great effect on the volume of water that finds its way by underground channels to the lower lands. It is a matter of knowledge to old residents of southern California that the rainfall during the last ten years has been greater than for the previous 12 or 14, and that many places that were known to be always dry in the summer have now permanent water. Much of this recent increase of water has been utilized for irrigation purposes, and if it should fail for the present season it would be fraught with injury to many.

Our greatest concern for the consequences of a dry season must necessarily be for the orange trees, for deciduous trees and vines can and do get along with just about one-half of the water that an orange will. For instance, the orange has an active circulation of sap all winter, while the deciduous tree is dormant; and, under proper cultivation, the whole of the moisture that falls on the ground can be all properly stored up for time of need. But for the past winter the orange tree has used up the moisture as fast as it fell, so that for the whole winter there was no time in which the ground was thoroughly saturated, leaving the ground so that irrigation was a necessity by the first day of March unless winter irrigation had been practiced; and, as a rule, winter irrigation is not desirable on account of the liability of rainfall during and after irrigation, which has a tendency to keep the ground injuriously cold. But we must take things as we find them, and the question confronts many how the season is going to be tided over. Many were unprepared for a dry season and were waiting for the late rains to put the ground in good condition, and no rain coming left them in an awkward situation. How to make the most out of it is an important matter. The first thing that needs to be done is to get the ground in as good shape as possible by the plow and cultivator. Deep and thorough work is what will win in the long run. Those who live under the influence of the coast fog will have easier work than the orchardist who lives farther inland, but in any case thorough pulverization of the soil tends to develop and retain moisture. The principle is to have the soil loose so that the warm air, which is always charged with more moisture than cold air, can penetrate the soil to a good depth where the moisture is condensed and retained, and the finer the soil is pulverized the greater is its capacity for the retention of moisture.

This is one of the first essentials. When this is done, the further question to be considered will be whether, in case the orchardist has an abundance of old straw or manure, it will be best to give a mulching of that, which will in a great measure prevent evaporation by the direct rays of the sun. It is well known that heaps of straw, manure and other rubbish tend to draw moisture to the soil from the atmosphere, and in the absence of mulch, cultivation has much the same effect. A good mulch of straw around the tree wet occasionally will be very beneficial. Where manure is used in place of straw, it must not touch the bark of the tree, as it will scald it and kill the tree. Allowing that previous suggestions have been carried out, the next thing will be to look to the tree itself and see that there is no superfluous wood or suckers to absorb the sap needlessly, and then it will be well in the case of young trees to pull off the fruit and give the tree all the chance possible. With old trees the fruit ought to be thinned very severely, if any fruit is left on at all, and it may not develop very fast during the hot months, but as soon as cooler, damper weather prevails, it will begin to swell out rapidly.

These are about all the suggestions that can well be made, and if followed out faithfully, the trees will come out very satisfactory next winter. We have in mind now orange trees in Pasadena that have not had a drop of water for years, and still the trees look fair and bear moderate crops of good fruit. Still, the trees are not by any means as large as they would have been with an abundance of water; but the fact remains that the orange will, when once thoroughly started, live and bear fruit without irrigation.

THE HOME CIRCLE.

Sweethearts.

If sweethearts were sweethearts always,
Whether as maid or wife,
No drop would be half as pleasant
In the mingled draught of life.

But the sweetheart has smiles and blushes
When the wife has frowns and sighs,
And the wife's have a wrathful glitter
For the glow of the sweetheart's eyes.

If lovers were lovers always,
The same to sweetheart and wife,
Who would change for a future of Eden
The joys of this chequered life?

But husbands grow grave and silent,
And cares on the anxious brow
Oft replace the sunshine that perished
With the words of the marriage vow.

Happy is he whose sweetheart
Is wife and sweetheart still—
Whose voice, as of old, can charm;
Whose kiss, as of old, can thrill;

Who has plucked the rose to find ever
Its beauty and fragrance increase,
As the flush of passion is mellowed
In love's unmeasured peace;

Who sees in the step a lightness;
Who finds in the form a grace;
Who reads an unaltered brightness
In the witchery of the face.

Undimmed and unchanged. Ah! happy
Is he crowned with such life!
Who drinks the wife pledging the sweetheart,
And toasts in the sweetheart the wife.

—Daniel O'Connell.

A Jumper.

He jumped out of bed and jumped into his shoes,
He jumped for the paper that had the day's news;
When breakfast was o'er he jumped, quick as a cat,
For his big outside coat and his everyday hat.

He jumped on the car that was going down town,
And he jumped to shake hands with his neighbor,
Miss Brown;

He jumped from the car when the office was reached,
And jumped with alarm when the fire whistle
screamed.

He jumped into harness to do his day's work,
And never was known one small duty to shirk;
When doing his work, if folks into him bumped,
He stopped not to argue, but over them jumped.

He jumped at each chance that the day brought to
him
To enlarge and expand his wallet's bright rim;
And when he got through at the end of the day,
He jumped on the car that was going his way.

His wife and his children jumped at his return
To greet him and all the day's triumphs to learn;
And when the last prayer and good night had been
said,
Year in and year out he jumped into bed.

—Thomas F. Porter, in Boston Globe.

Miss Belinda's Beehives.

AFTER the city visitors who swarmed around Maple Center and registered their names by the score in the books of the village hotel strolled out on the Maple road, they always stopped at the Bubble farmhouse and cried: "How exquisite! How picturesque!" And for the life of her Miss Belinda Bubble did not know why.

"It ain't as if I could afford a coat of paint to the old house," said she. "It's just a slate-brown with winter storms and summer suns; and the grape arbor's all a-tumblin' down for lack of a brace or two of solid timber; and the well-sweep ain't half as convenient as Mrs. Claghorn's new chain pump, no way you can fix it; and the stun wall's all overgrown with them pesky runnin' vines and briars! To be sure, the four-o'clocks and mournin'-glories are sort o' pretty by the fence, and there ain't no prettier hollyhocks in the country than them dark-red and cherry-colored ones jest this side of the pear tree. As for the beehives, I always did like beehives, even if it wasn't for the honey. My mother set a heap o' store by them beehives, and there they've stood, nine of 'em in a row, ever since I can remember. And there ain't no honey in all the county as has got the flavor of oun. I don't know whether it's Squire Carbuncle's buckwheat field or that there clover medder of Mr. Darnell's as does it. But you can fairly taste the sunshine and the flowers in it!"

And it was a genuine sight, at swarming time, when Miss Belinda issued forth into the black and booming clouds, all gloved and veiled and tied up in mosquito netting, with a tin pan and a skimmer in her hand.

"I ginerally have first rate good luck with the swarms," said Belinda. "I don't know when I've lost one, if only folks would let me alone. But it's the meddlin' people that come to offer their help, that upsets me and the bees. Squire Carbuncle, now, he's real

sensible. He don't never come round interfering'. If he sees the bees makin' up their minds to swarm, he jest gits up off his garden chair and goes into the house. For bees, they're dreadful sensible. They have their likes and their dislikes, jest as human creeturs have—and they never could get along with Squire Carbuncle."

Squire Carbuncle was a quiet, grizzle-headed man of fifty, who farmed a model farm, with all the new machinery patents liberally oiled with gold, read the agricultural papers, and was always "just going to" write an article for the *Gentleman Farmer*. Miss Bubble herself was not much younger. She supported herself in a genteel way by vest-making for a factory in the neighborhood.

"I s'pose," said Miss Bubble, "Squire Carbuncle'll get married some day, and I do hope he'll choose a sociable wife that I can take comfort with, exchanging patterns and chatting of an evening over the garden fence."

"Belinda Bubble is a sensible woman," said Squire Carbuncle, in his deep sonorous voice. "To my certain knowledge, she has refused one or two shiftless fellows who wanted to marry her merely to be supported. She's a good deal better off single than married."

Miss Belinda never said a word when Squire Carbuncle's superb liver-colored setter killed her favorite Muscovy duck—and the squire, on his part, condoned the offense when Miss Bubble's chickens scratched up all his early lettuce and made havoc with his seedling pansies and pinks.

"Neighbors orter be neighborly," said Miss Belinda. "And dog's nature is dog's nature!"

"I must stop up the cracks under the fence," said the squire. "Of course Belinda can't help her chickens getting through! No woman could."

Thus matters were when Miss Belinda's cousin, Fannie Halkett, came to visit her—a plump, peach-cheeked young woman who was cashier at a glove store in the city.

"Cousin Bubble," said Fannie, "why don't you marry Squire Carbuncle?"

"La, Fannie," cried the elderly damsel, starting back so suddenly that she stepped on one of the velvet-white paws of the pet kitten.

"Yes, truly, why don't you?" said Fannie. "He needs a wife! And it would be very nice for you to have a husband. Now wouldn't it?"

"Go 'long," said Miss Belinda. "I never thought of such a thing! Nor him neither. Go out, Fannie, and pick a mess o' white Antwerp raspberries for tea and don't let me hear no more such nonsense."

"Nonsense!" echoed Fannie, laughing, as she went off with a blue-edged bowl in her hand. "But I think it isn't nonsense at all!"

And among the Antwerp raspberry vines she talked the matter over with Julian Hall, Squire Carbuncle's nephew, who had come to the farm for a week's trout fishing, and who had developed a very strong propensity for reading novels under the old pear tree that overshadowed Miss Bubble's garden fence.

"Wouldn't it be nice?" said Fannie.

"Splendid!" Julian answered, leaning over to put a handful of raspberries into the blue-edged bowl.

Whether he leaned too far and lost his footing or how it happened he did not know; but certain it is that, just at that moment, one of the beehives fell—crash!—over among the raspberry bushes. Fannie fled in wild fright, and Julian himself, recovering his balance as best he might, was driven to ignominious flight.

"Who did that?" said Squire Carbuncle, issuing out of the door.

"I'm afraid I did, sir!" confessed Julian.

"And what am I to say to Miss Belinda Bubble?" sternly demanded his uncle.

"I'm sure, sir, I don't know!" answered Julian.

"Such a thing never happened before in all the years that we have lived as neighbor to each other," said Mr. Carbuncle. "Of course, the bees have got away and the glass honey boxes are broken!"

"I am very sorry, sir," said Julian.

The squire, an eminently just man, harnessed up his gray pony and drove to town the next day. That evening he called at the Bubble farmhouse with a square package, neatly done up in brown paper, in his arms. Fannie Halkett came to the door.

"My dear," said Squire Carbuncle, "is your cousin at home?"

"Yes, sir!" said Fannie, fluttering all over and showing the way into the best parlor, where the blue-paper shades were down and the stuffed owl on the mantel transfixed the chance visitors with its eyes of glittering green glass.

"Tell her I've called on very particular business," said the squire, sonorously.

"Yes, sir," said Fannie, and away she ran.

"Cousin Belinda, take your hair out of those crimping pins at once," said she, "and let me fasten this blue-ribbon bow at your throat. He's in the parlor. He's come to propose."

"Nonsense, Fannie!"

"But he has! He as good as told me so!" cried Fannie, standing on tiptoe to kiss Miss Belinda's withered apple of a cheek. "Do make haste! Don't keep him waiting. Men don't like to be kept waiting." And she fairly pushed Belinda Bubble into the best room.

"Miss Bubble," said the squire, solemnly, rising to his feet, "I have called to ask if you will accept—"

"Yes, Seth," cried Miss Belinda, flinging herself into his arms. Luckily he had thought himself to lay the square package down on the table. "Yes, dear Seth, I will. Fannie told me you was going to propose to me, but I didn't believe it. And I'll be as good a wife to you as I know how. And oh, Seth, I've always loved you ever since we were young people and went to singing-school together!"

The squire opened and shut his mouth as if it were some curious piece of machinery.

"Eh!" said he, staring mechanically at the owl.

"I hope," faltered Miss Bubble, "you don't think I've been too hasty in accepting your offer?"

"No, Belinda, no," said Mr. Carbuncle, swallowing down a lump in his throat. "I am much obliged to you for saying 'yes,' and I am quite convinced, my dear, that you will be a good wife to me."

And so this autumnal couple became engaged; and the squire never told Belinda that it was the colony of Italian bees he had brought her, not himself, to lay as an offering at her shrine.

"But it's just as well," said the squire to himself. "I ought really to be settled in life, and Belinda is a most worthy woman. It is best at times to abandon oneself entirely to circumstances."

"Didn't I tell you so, Cousin Belinda?" said Fannie, exultantly.

One wedding makes many, and neither of the elders was surprised when Julian and Fannie became engaged shortly after.

"The humming of bees will be the sweetest music in all the world to my ears after this," said Julian, fervently.

"I always was partial to bees," reiterated Miss Belinda.—Amy Randolph.

Health and Beauty.

The celebrated Diana, the French beauty of Poitiers, preserved her beauty to an advanced age by merely observing the following rules: 1. She was jealously careful of her health. 2. Bathed in cold water in the severest weather. 3. Suffered no cosmetic to approach her. 4. Rose at six o'clock in the morning, sprang into the saddle and galloped about six miles, when she returned, breakfasted, went about her duties and amused herself by reading."

The system may appear a singular one, but, in her case, it was undoubtedly successful, as she still reigned in absolute sovereignty over the heart of the king of France when she was nearly 60 years of age.

The history of such historic beauties as Cleopatra, Aspasia, Ninon de l'Enclos and Lola Montez also reveal the fact that the first and chief means of acquiring and maintaining beauty was the knowledge of and obedience to the laws of health. The laws of health that especially apply to the preservation and acquirement of beauty are very many indeed; but if those insisted upon by Diana are acted upon they will be found of chief importance. We notice that she rose early, and therefore, we presume, she retired at an early hour, so as to make sure of what is called the "beauty sleep." "She bathed in cold water in the severest weather." In other words, she employed the bath regu-

larly; and if the cold bath is used regularly the transition from warm to cold weather is scarcely felt. The morning cold bath, as an aid to freshness and beauty, as a tonic to the muscular and nervous system and an antidote to catarrh, influenza, rheumatism, etc., is simply priceless. But it must, in cold weather, be followed by vigorous friction of the arms, legs, back and chest by a coarse towel or other appliance. While the morning bath is calculated to remove the impurities which have collected upon the surface of the skin during the night, it will also be necessary to change all body-clothing before retiring to rest and ventilate the skin by completely undressing, and, unless very delicate, the body should be "massaged" by rubbing with the naked hands for a few minutes.

Diana also seems to have appreciated the value of "outdoor" exercise, and no doubt her six-mile gallop would so increase her digestive powers that she would do full justice to her breakfast, and so preserve the general nutrition of the system.

Gems of Thought.

There is a spectacle grander than the ocean, and that is the conscience.—Victor Hugo.

Molasses is better than vinegar, and politeness is the grease of the human axle.—Joe Howard.

Most arts require long study and application; but the most useful art of all, that of pleasing, requires only the desire.—Chesterfield.

Stories first heard at a mother's knee are never wholly forgotten—a little spring that never quite dries up in our journey through scorching years.—Ruffini.

Who has not experienced how, on nearer acquaintance, plainness becomes beautified, and beauty loses its charm, according to the quality of heart and mind?—Fredrika Bremer.

When I see the elaborate study and ingenuity displayed by women in the pursuit of trifles, I feel no doubt of their capacity for the most herculean undertakings.—Julia Ward Howe.

The best and simplest cosmetic for woman is constant gentleness and sympathy for the noblest interests of her fellow-creatures. This preserves and gives to her features an indelibly gay, fresh and agreeable expression.—Auerbach.

I have lived to know that the secret of happiness is never to allow your energies to stagnate. The old proverb about too many irons in the fire is an abominable lie. Have them all in—shovel, tongs and poker. The more the better.—Adam Clark.

Every man must think after his own fashion; for on his own path he finds a truth, or a kind of truth, which will help him through life. But he must not give himself the rein; he must control himself; mere naked instinct does not become him. Unqualified activity, of whatever kind, leads at last to bankruptcy.—Goethe.

No man is so foolish but may give another good counsel sometimes; and no man is so wise but may easily err if he will take no other's counsel but his own. But very few men are wise by their own counsel, or learned by their own teaching. For he that was only taught by himself had a fool for his master.—Ben Jonson.

Some clouds rise from stagnant bogs and fens, others from the wide, clear, large ocean. But either kind, thank God, will serve the angels to come down by. In old stories of celestial visitants the clouds do much, and it is oftenest of all down the misty slope of griefs and pains and fears that the most powerful joy slides into the hearts of men and women.—George MacDonald.

In botany there is a species of plant called Incomplete; and just in the same way it can be said that there are men who are incomplete and imperfect. They are those whose desires and struggles are out of proportion to their actions and achievements. The most insignificant man can be complete

Highest of all in Leavening Power.—Latest U. S. Gov't Report.

Royal Baking Powder
ABSOLUTELY PURE

if he works within the limits of his capacities, innate or acquired; but even fine talents can be obscured, neutralized and destroyed by lack of this indispensable requirement of symmetry. This is a mischief which will often occur in modern times; for who will be able to come up to the claims of an age so full and intense as this, and one, too, that moves so rapidly?—Goethe.

Fashion Notes.

A new kind of fine Indian muslin, beautifully embroidered with ivory-colored thread in various light designs, is being used in place of lace draperies.

A cool gray green is one of the new colors which gave a hint of its existence last year, and now appears in silks and crepons under the name of "roseau."

Cotton crepon is a desirable material for summer gowns, and it can be had in black and all the light tints. It is especially recommended for its laundry qualifications, as it washes perfectly and requires no ironing.

Irish hand-made linens are recommended strongly for summer dresses. They come in a variety of colors which are softer and more becoming than those of last year. Hop-sack linen is a desirable novelty, almost as glossy as silk, and, although light in weight, they are strong enough to require no lining.

The warm days bring into view the small bonnets and close, round hats that are always worn in the demi-season. Very light colors are chosen in the fancy straws of which bonnets are made, pale pink straw rivaling the familiar ecru, while turquoise, light green and violet straw are used as well. Dark trimmings give character to these light bonnets, such as black flowers, pleated black lace or chiffon, small black ostrich tips, black aigrettes and black moire ribbon, with wafers or spangles of jet following the watered design.

A novel way of giving breadth to new gowns is that of putting a slender whalebone in a revers or huge bow extending straight across from the throat out on the wide sleeves. This is an extreme fancy, somewhat like the Incroyable revers and bows of the Directory period. A straight length of silk four or five fingers wide is folded across in fan plaits, then strapped in the middle, and a whalebone is hemmed in along the upper edge. When set on at the throat, the plaits each side of the strap fall like an open fan from below the whaleboned top, and thus make an effective drapery for the waist. A very rich gown with waist of white Venetian guipure lace has such a bow of pale blue silk brocaded with purple violets. The lace sleeves have wired tops of the silk, and the skirt is of cloth of the lightest shade of Parma violets.

Pleasantries.

Sitter (jocosely): "I suppose you want me to look pleasant." Artist: "Unless you prefer a perfect likeness."

Doctor: "My good woman, does your son stutter all the time?" Peasant: "Not all the time, sir—only when he attempts to talk."—Commercial Gazette.

It was in the New York *World's* report of a political meeting that the word "shouts" was so ludicrously misprinted as to make the blunder famous. "The snouts of ten thousand Democrats rent the air," read the report.

A student at a medical college was under examination. The instructor asked him: "Of what cause, specifically, did the people die who lost their lives at the destruction of Herculaneum and Pompeii?" "I think they died of an eruption, sir," answered the student.

A foreign diplomat conversing with the Hawaiian queen on the subject of the mixed races in Hawaii said: "But your majesty surely has no white blood in your veins?" "Indeed, I have white blood in my veins!" said the queen. "My grandfather ate Captain Cook."

"No," said Farmer Cornstassel's wife, "fame ain't fur everybody. There's Josiär. He done his best, but he never will git famous." "What was his ambition?" "Ter get his picter in the paper. He set up nights tryin' ter think of some ailment ter take patent medicine fur; but he was so over-powerin' healthy that they wusn't a single thing fur 'im ter git cured of."—Washington Star.

A man went into a drugstore and asked for something to cure a headache. The druggist held a bottle of hartshorn to his nose, and he was nearly overpowered by its pungency. As soon as he recovered he began to rail at the druggist. "But did not it help your headache?" asked the apothecary. "Help my headache," gasped the man, "I haven't any headache. It's my wife that has the headache."—Exchange.

YOUNG FOLKS' COLUMN.

Rich Man, Poor Man, Beggar Man, Thief.

Our dear little lass got ready for school
In her just finished gown so new;
It had puffed-up sleeves, and a ruffled skirt,
And its colors were white and blue.

With a happy look on her fair young face,
And humming the chickadee song,
She threw back kisses for mother to catch,
And went skipping, hopping along.

With sorrowful face, and eyes full of tears,
At luncheon time homeward she ran,
And sobbed out: "O mamma, please take off this gown
As quick as you possibly can!"

"Why, what is the matter, dear child?" she asked;
"Has it come already to grief?"
"The buttons! the buttons! The school-girls say
They count up I'll marry a thief!"

"It is 'Rich man, poor man, beggar man, thief'—
You didn't put on but just four;
I want to be rich, but I can't unless
You'll put on one button more—"

"Then it's 'Rich man' again, don't you see,
mamma?"

And when it all happens for true,
I'll buy you the loveliest things in the stores,
And have them sent home here to you."

How foolish it seemed! And yet dear mamma
Sat down with her needle and thread,
And put one button more on to the gown,
Just because of what those girls said.

—New York Evangelist.

Dolly Mason's New Names.

DOLLY MASON was only eight years old and not remarkably pretty or clever, but she had so endeared herself to her family and friends that she seemed very lovely to them, and she was called "Little Comfort" and "Dolly Sunshine" quite as often as just Dolly, which was her real name.

This had not always been so; there was a time, as Dolly remembered quite well, when she had frequently been called "naughty" and "cross-patch," especially by nurse and her brother Tom, and when her mates had seemed not glad to see her if she went of an afternoon to visit them; and sometimes if they were invited by her mamma to visit Dolly, she felt slighted and became angry because they were apt to leave her to play by herself.

This was so no longer, and I will tell you how the pleasant change was brought about. It began by something the minister said in Sunday school. He was talking about the text, "If ye love not your brother whom ye have seen, how can ye love God whom ye have not seen?" Now it chanced that on this particular Sunday Dolly had gone to Sunday school quite vexed with her brother Tom because he had taken the clean, new-looking lesson paper, while she had to carry the only remaining one, which was badly soiled by Dolly having dropped it in the rain.

When the minister repeated the text, Dolly felt almost as if he must mean her, and she was very glad that Tom did not look at her. She wondered if anybody had told him that very often she did not love Tom. But soon Mr. French—that was the minister's name—said Christ evidently meant more by the word brother than the name implied, that it was our duty to love all mankind, in the sense that we should be kind to them and try to do them good. He said it was natural for us to love members of our own family, though sometimes we neglect to show them that we do. He said very little children could show their love for their parents by being affectionate and obedient, and by doing patiently and cheerfully the little tasks appointed them; and for brothers and sisters by being unselfish—willing to give up their own way—by trying to help them, and by showing sympathy for them when hurt or in any trouble. "And finally," said Mr. French, "I will tell you the words spoken by a famous man to his children, which may help you, if you will bear them in mind and practice them, to show your love for all mankind. The famous man was Charles Dickens, and the advice he gave his children was: 'Do all the good you can, and don't make any fuss about it.'"

Dolly not only heard but understood all the minister said. She had given such good attention that she could repeat the text, and the words said by Charles Dickens, and she resolved to put the latter in practice the very first opportunity. She did not have to wait long—there are always chances to be helpful and kind, if one is on the lookout for them, and Dolly's first chance occurred on the evening of the day on which she heard the talk we have repeated. Dolly was reading a pretty story in her Sunday-school

paper, and would have liked to finish it, but when her papa asked her to join with Tom in singing a gospel hymn, she quite surprised herself, as well as every one else, by cheerfully obeying at once, and was rewarded by a kiss and a "Thank you, my dear," from her papa.

On the following Monday, papa came home early from his office, suffering with a severe headache. Dolly hurried to arrange a soft pillow on the sofa, and then brought her little chair, and seating herself, bathed his forehead with cold water, as she had seen her mamma do, until he told her it was enough, and he felt much better. Both papa and mamma were well pleased with this evidence of their daughter's thoughtful affection. Later she helped Tom twist a string for his kite, and then found his top, which had thought to be lost. When cook asked her to go with an order to the grocery, she said pleasantly:

"Yes, if mamma will let me," instead of saying, "Why didn't you get what you wanted when the grocer was here?" as she once would have said.

At school, when little Minnie Porter missed her spelling lesson and lost her place in the class, Dolly tried to comfort her, and told her she was sure to do better the next day, and offered to hear her spell the words.

She carried a bunch of sweet peas to Mrs. Gray, who was ill, and read a chapter in the Bible to old Mr. Hines, who had lost his eyesight. Of course Dolly, being only eight years old, could not read very well, but she spelled out the hard words, and the old gentleman said he liked the reading all the better because she read so slowly.

Sometimes Dolly found it called for a good deal of self-denial to do these "good turns," making "no fuss about them," but she found at the same time that she loved more and more those whom she helped, and was happier for the love she was getting in return. Before very long it seemed to come natural to Dolly to do and say pleasant things, and about that time, papa, mamma, uncles, aunts, nurse and all the grown folks began calling her "Little Comfort." Tom and her playmates seemed glad to have her with them, and life grew so bright for Dolly that she seemed to make a sunny place everywhere she went. And that's the way the other name of "Dolly Sunshine" came to her.—Happy Hours.

DOMESTIC ECONOMY.

CARDINAL SALAD.—This very handsome salad may be made by adding beet juice or lobster coral to a plain mayonnaise dressing. The latter, of course, is to be served with a lobster salad, the former with a vegetable salad. Arrange lettuce, cress, sliced beets and tiny radishes in a salad bowl. Garnish with hard-boiled eggs and pour a cardinal mayonnaise over all.

CAKE PUDDING.—Soften half a pound of stale cake in sweet milk; beat egg light with two tablespoonfuls of sugar and a quart of milk. Put a layer of the softened cake in a buttered dish; spread with preserved fruit and continue with successive layers of cake and fruit, the top layer being of cake. Then pour over the mixture of milk, egg and sugar and bake half an hour.

STRAWBERRY CREAM CAKE.—Make a light sponge cake and bake in jelly tins. Soak a quarter of a box of gelatine in half a cup of cold water. Whip a pint of cream and put it in a granite pan, standing this inside of another containing cracked ice. Add to the cream half a cup of powdered sugar and a teaspoonful of vanilla sugar. Stir the gelatine over boiling water until it is dissolved, add it to the cream, and stir at once until it begins to thicken. When the cakes are cold, put a thick layer of this cream over each and stand strawberries thickly on; pile one on top of another and let the top layer be cream and strawberries. This is not so costly a dessert as it seems, as, being very rich, only a small quantity is required.

BEEFSTEAK WITH BEARNAISE SAUCE.—This is a good dish to make when eggs and butter are cheap. Indeed, except for a company or a once-in-a-way delicacy, it is pretty costly even when they are cheap. For the sauce, put a gill of vinegar over the fire, with two tablespoonfuls of shallots or young onions minced fine; simmer until reduced one-half, then set back to cool a little and add, stirring slowly, the yolks of four eggs, then two tablespoonfuls of very strong, rich meat gravy, and lastly four ounces of butter. Stir constantly with a wooden paddle, and if it becomes too thick, add a little water. It should be of the consistency of mayonnaise. The French add minced parsley, tarragon and chives with the shallots. This is sufficient for a four-pound steak, and must be spread over it as soon as broiled, and sent at once to the table.

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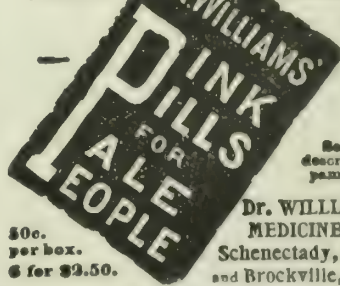
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AGRICULTURAL NOTES.

CALIFORNIA. Alameda.

Pleasanton Times: Mr. Hahn, of Livermore, recently discovered that a little black bug was boring into the branches of his olive trees, causing them to wilt and finally die. Mr. Hahn says the bug begins at the crotch of two little limbs, and after striking the heart continues on down to the heart of the tree. The gentleman has found several in his trees, and also some in trees and hedges belonging to some of his neighbors.

Butte.

C. H. Leggett tells the Oroville Register of what seems an odd theory in fruit-growing. Three years ago 30 acres of their lower vineyard and three rows in the upper vineyard was plowed at a certain date in April, when there came a frost, and where the land had been turned over the frost injured the grape vines. Some days later they heard of a similar case in Colusa county, where J. B. De-Jarnett's vineyard was injured by frost, and a neighbor's vineyard that had not been plowed escaped damage. Since then Leggett & Son have not plowed their vines during the month of April. This season, although on low lands some damage was done in the county, yet none occurred in the vineyards of Leggett & Son.

At Biggs there has been organized a "white labor union," designed to prevent the employment of Chinese and Japs in orchard work. There are 125 members. L. P. Denny is president; H. E. Spur and T. T. Harris, vice-presidents; and L. T. Allen, C. A. Moore, L. K. Vaughn, J. L. Porter and David Porter members of a "Labor Bureau," whose duty it shall be to assist all competent and worthy white laborers, including women, youths and children, to secure employment. The basis of this movement is the fact that many orchards in Butte county are being leased or worked by Chinese and Japs.

Glenn.

Willows Journal: There is no form of monopoly which usurps the opportunities of men to the extent attending the monopolized ownership of land. Take our own county for an example. Eighteen or twenty years ago the plains between here and Princeton were covered with homes of prosperous families, and school houses dotted the plains where now there isn't a house with a family living in it. The same can be said of almost every part of the great Sacramento valley, the fairest and most fertile in the State. The large land-owners have gradually bought all the small holdings. For the past 20 years wheat raising has been profitable and the large land-owners continued to buy more land. The price of wheat has been so low for the past few years that land monopoly has come to an end. There is no money in raising wheat, and we believe the time is near at hand when the large land-owners will be compelled to sell their holdings. We believe that if the price of wheat would go still lower it would be a great blessing to this valley. It might be tough on the owners of these large tracts, but it would be the making of the country. One hundred holders in the Sacramento valley own 1,600,000 acres. Each 50 acres is capable of maintaining a family, or the land now held by 100 persons would support 32,000 families. With wheat at 60 cents a hundred, these large land-owners would soon be ready to sell. Then would come irrigation, and the country would prosper and cities be built where there is nothing now but stables and bunk houses. God hasten the day.

Humboldt.

There is some doubt about the starting up of the Rohnerville cannery this summer.

Kern.

Bakersfield Californian: There has been a very heavy loss of sheep in the mountains this season. This has resulted in cases where the sheep had passed the winter on lands skirting the foothills, where little or no rain fell and there was no early feed to speak of. As soon as possible they were driven into the mountains, but large numbers of them were so feeble that they could not stand the rough climbing and so laid down never to get up again. One firm lost 1000 head out of one flock between Granite station and the summit of Greenhorn.

Bakersfield Californian: Mr. H. C. Dunn is buying up considerable fruit, which he proposes to dry. He is paying about \$30 a ton for apricots and peaches on the trees, at which price the grower will reap a most satisfactory profit. A Chinaman from Hanford has been here for some time buying up all the fruit he can get, but he does not make contracts by the ton. His prices are all based upon a certain sum per tree, and run in the neighborhood of about \$1 a tree. For young orchards this is a fair rate, but as many trees that he has bought will have 200 or 300 pounds of ripe fruit, this astute buyer seems to have the best end of the bargain.

Los Angeles.

Pomona Progress: From seven acres of alfalfa S. N. Landon cut and sold \$134.35 worth of hay at his home in the southeast part of town, last week. This is the first cutting there for the season. Last year Mr. Landon got 84 tons of alfalfa hay from the seven acres.

Trays suitable for drying apricots, peaches and prunes have been leased from the Cucamonga and Etiwanda raisin-growers at Pomona at the rate of one cent a tray for a period of two months.

Progress: Apricots all over the valley are going to be simply an enormous yield. As the crop comes nearer fruition its true extent becomes better realized. Two-thirds of the green fruit should be taken at once from the trees in many orchards, to obtain the best results.

The Los Angeles Times of May 12th thus sums up the situation in southern California: The only redeeming feature of the weather during the past week, as far as the farmers are concerned, has been the fogs which have prevailed along the coast. These have been so thick as to compensate, in some degree, for the lack of rain. Even on the coast half the crop of hay and grain will be very short in the southern part of the State. Inland it will be very deficient as far north as Sacramento. Advices from

the northern part of the State are to the effect that high north winds, which followed the recent rains, dried the ground and counteracted much of the benefit which the moisture has done to the crops. It has been estimated by some that the barley crop of southern California will be about one-fourth of the average one. It is probable that this estimate is rather too large than too small. It is probable that three-fourths of the barley that was sown for grain will now be cut for hay, and much of it will make very poor hay. Of the remaining fourth, nothing like a full crop can be expected. "It is an ill wind that blows nobody any good," and ranchers who have naturally moist or irrigated land on which they can raise a crop of alfalfa will make lots of money this season. The prospects for the deciduous fruit crop are still excellent, although the outlook for a very large prune crop is not quite so good as it was a week ago. Advices have been received from interior points in the central part of the State that the prune crop, which last month gave indications of being a heavy one, will not mature. Prunes on trees in many places are turning yellow and falling. A definite estimate of the damage cannot yet be made, but early in the year the coming crop was estimated to yield about 65,000,000 pounds, whereas the prospective crop to-day is about 35,000,000 pounds, or a little over.

Pomona letter: Feelers, in the way of letters and "men on the road," have already begun to bob up in this valley as to the outlook for deciduous fruits—both green and canned—this summer, both as regards quality and quantity, as well as to get as many "pointers" as possible on the probable prices that may rule. The shrewd fruit-handlers as a rule prefer, wherever practicable, to have a map of the situation before them when the market first opens. So let the fruit-growers also properly inform themselves upon the various pros and cons of the situation as it is developed. Nothing like always being prepared to meet any flank movement.

Orange.

Santa Ana Blade: Some of the sheepmen on the San Joaquin ranch are selling their stock for mutton, and several carloads have been shipped in the past week to San Francisco by the Southern Pacific. Others are moving their sheep to other pastures. John Wagner, who had a flock near Placentia, has started with them for the Julian mountains, San Diego county. Don Domingo Oyharzabel, Louis Moulton and others of San Juan, started some time ago for the Inyo county pastures, but got into trouble in San Bernardino county, where they were arrested and sued for \$3000 license imposed by that county on traveling bands of sheep.

Sacramento.

A carload of Florin strawberries were shipped last week to the East. Speaking of this shipment, Mr. G. H. Appel, agent for the Fruit Transportation Co., said: "This is the beginning of regular and extensive shipments of Florin strawberries to Eastern points, should the market there warrant its continuance. I see no reason why California strawberries should not meet with the same favor that other fruits from here receive. There has been a large increase in the acreage of strawberry culture, and should the Eastern demand for the berries prove satisfactory that industry will certainly grow to large proportions. The Florin growers produce berries of excellent quality, and their long experience in the business has taught them how to pack the berries for shipment. I feel quite hopeful of this new branch of the fruit industry, and the result of to-day's shipment will be looked for with interest."

San Bernardino.

Chino Champion: Notwithstanding the long continued dry weather, the beet crop is in better condition to-day than it was at the same time a year ago. We do not wish to make invidious comparison, but we do feel constrained to call attention to the fact that we are much better prepared to "stand off" the unfavorable prevailing climatic conditions than are many neighboring sections.

San Luis Obispo.

A number of dairymen have issued a call to the dairymen of San Luis Obispo and Santa Barbara counties for a convention to be held in San Luis Obispo, at the Agricultural pavilion, on the 22d, "to take steps for the formation of a District Association for the furtherance of the dairy interests in this section, to assist in securing such legislation as may be found necessary to prevent the manufacture and sale of fraudulent imitations or adulterations of dairy productions, and to promote the study of improved methods of business among the dairymen, and to consult with regard to wages to be paid dairy hands in the future, it being intended further to affiliate with the State and national organizations existing, or which may be formed for like purposes."

Solano.

A friend of the RURAL writes under date of 12th inst.: Around Dixon crops are looking fairly well in spite of the long dry spell. The north wind has held the fort almost continuously for many weeks. Now and then it has let up for a day or two, just enough to give a little hope to the anxious farmers. Last week, May 10th, I looked over the Curry ranch on Putah creek; also the neighboring ranches, known as Younts', Ellis', McBride's, Dudley's, Brinkerhoff's, Wright's and others, and the general verdict was fairly hopeful, if the next two weeks prove favorable. On the Curry ranch, digging down into the soil of summer-fallow wheat and winter-sown barley, there was a good show of moisture at a depth of three inches and three and a half inches, and the ground there was mellow as meal. Barley has filled out nicely and wheat beginning to fill. Orchards and vineyards are looking nicely. On May 3d, the day that saw the first carload of the season of ripe cherries start for the East from Vacaville, I gathered from one of the cherry trees on the Creek Farm a generous yield of ripe fruit. Solano county has a fair show yet for a good crop, if the weather proves half way favorable.

Sonoma.

The vineyards surrounding Sonoma and Glen Ellen, says the Index-Tribune, will turn out a fine crop of wine grapes this season. For the most part all the vineyards in Sonoma valley are resistant, and phylloxera in this section will soon be a thing of the past. The only thing now lacking to make wine-growing a profitable industry in this valley is for the

wine market to pick up. Phylloxera has lost all its terrors in Sonoma valley. Our vineyardists have conquered that bug. The only things they now fear are the big bugs in the three-story vineyards of San Francisco, who control prices on this coast.

Santa Rosa Republican: The late rain has started the plows in many places in the Russian river bottoms and in Alexander valley, preparing land for the planting of corn. The hay crop in those valleys promises to be very much better than it did before the rain and a considerable crop will be harvested.

Sonoma Index-Tribune: It has been supposed that, like many other sections of the State, the hay and grain crop of Sonoma valley will be short. Generally speaking, this is not the case. In many instances the crop will be somewhat short owing to late planting, but, for the most part, hay and grain will turn out just as well this season as usual. All the mountain ranches have fine-looking hay fields. In the valley proper the hay fields on the Buena Vista ranch, the Jones tract, and many of those of our small farms promise a heavy yield.

Tulare.

Visalia Delta: Apricots, as a rule, do not bear good crops so regularly as some other stone fruits, but a large crop of good apricots is always valuable. The apricot orchards in this vicinity are heavily loaded and promise remunerative crops, and fruit-buyers are willing to purchase the fruit on the trees in its present unripened state. The best sale we have heard of was concluded recently. B. C. Anderson, the well-known and successful fruit-grower, sold two acres of apricots to a Chinese fruit-buyer for \$1200. The sum of \$400 was paid in advance. The Chinaman who bought them expects to make a clear profit of \$200 per acre at the least. It is estimated that the trees will yield 450 pounds each, making 243 tons to the acre. To pick and dry the fruit will cost \$160 per acre. The product, sold at 12½ cents per pound, and it is not thought by fruit-growers that the fruit from this orchard will bring less, the gross yield will be \$1000 per acre, which will return the Chinese purchaser a net profit of \$240 per acre.

Ventura.

Hueneme letter: A rain now would be of little benefit to barley, but would of course help out the corn and bean prospects wonderfully. In some localities our barley crop will be an entire failure. The receipts at Hueneme this season promise to be about 25,000 sacks, or less than one-tenth of the usual quantity.

Hueneme Herald: Last week nine carloads of horses were shipped from the Patterson ranch to the San Joaquin valley, to be placed on pasture over there. Feed in this county is very scarce indeed, and at least 2000 head of horses have already or will be driven into other counties.

Springville letter in Ventura Advocate: The apricot crop on this side of the river is unusually heavy this year; a portion of the fruit will have to be knocked off, or the fruit will not be good.

E. P. Todd, a thrifty farmer down the valley, informs the Chronicle that he will have plenty of hay notwithstanding the dry year. This is not nearly so bad as the year 1877. He thinks the people will not feel the bad effect of the drouth as they fear.

Yolo.

Winters letter in Woodland Mail: It is a matter of general remark that there are more commission men, both for Eastern and California firms, moving around among the fruit-growers than ever before at one time. The competition is very strong and lively, and so long as it continues so the prospects for the fruit men are very encouraging. Those who have vegetables and melons are also much elated over the prospects; and altogether, notwithstanding the prospects for a short crop of cereals, the outlook is much better than it is in most sections of the State.

Winters letter: The commission men are still stirring around among the fruit-growers, but find it a difficult matter to close contracts. Our fruit men are very anxious to save the profits that have heretofore been gathered in by the middlemen.

Capay letter: I saw two Hungry Hollow farmers yesterday. One of them says the wheat crop will hardly be worth cutting. The other said the grain looked very well. Perhaps between these two statements we can strike an average that will be something near the truth.

Yuba.

Wheatland Four Corners: The present warm weather is rushing the hop vine along at a surprising rate. Over 3,412,500 hop bines are ascending toward the sky, within a radius of two miles from Wheatland, at a pace not known at this season of the year. Hop men are uncertain regarding the value of this state of affairs. They have some fears that the conditions that have forced the growth may interfere with the bearing and maturing qualities. It is a strange fact that fields which ordinarily are very early are later this season than those which are picked from five days to a week later. Whether the extraordinary growth is due to the flood last winter or this exceptionally dry season we cannot say. David Roddan has several acres of hops which have reached the top wire; that is, have made a growth of 18 feet. All yards east of town have an average growth of nine feet. The vines are very hardy.

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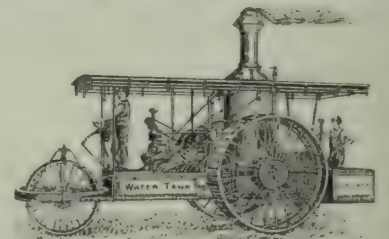
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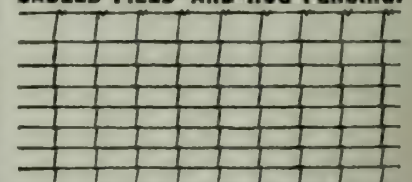
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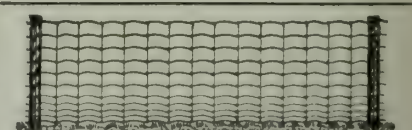
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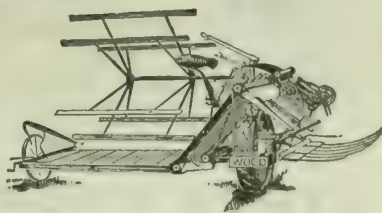
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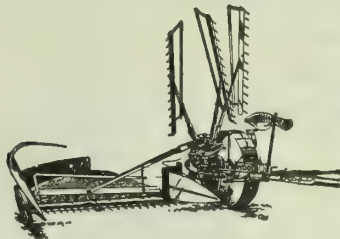
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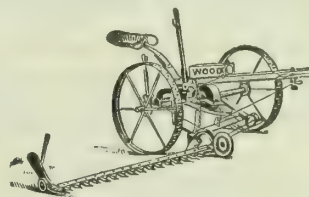
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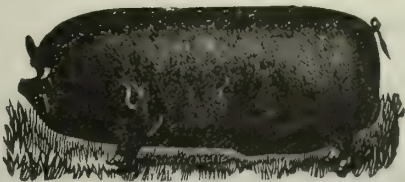
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PATRONS OF HUSBANDRY.

Random Thoughts.

By A. P. ROACHE, W. M. S. G. of California.

Hard times shall vanish into naught
When ere full justice shall be wrought.


Our last notes found us en route for Grass Valley, which we reached in due time, and were met by Worthy Master Henderson and a company of patrons. After a good night's rest in one of the best hotels we have yet occupied, we reported for duty, but as the patrons were not yet ready for work they took us "down in a gold mine underneath the ground," and showed us the great Maryland mine, which declares a dividend of \$20,000 per month. We thought that amount fair for a dry year and at once concluded to purchase the mine, but as the price asked was several millions more than we felt able to pay at present, we let the matter rest until after the close of the grange campaign. This is a rich mining district, yet far richer is the boundless spirit of fraternity and grangerism which somehow develops and thrives amid the eternal rocks which ten thousand earthquakes have strewn far and wide, and is a fine illustration of mind dominating matter. Here occurred the unexpected, and the best of the wine at the last of the feast became a truism in fact. From the moment the gavel fell till late at night the interest never flagged, and the fraternal unity engendered in the open meeting took lofty wing in the closed. Bro. Messer was at his best. Bro. Frisbie gave a good talk. The light from love untrammelled played over the scene and illuminated mind and soul and environments, and with friendship and satisfaction beaming from every countenance, hand clasping hand and shoulder to shoulder, we gathered around the choir and from the overflowing gladness of all came the tender words of "Auld Lang Syne," terminating in hand shaking, God speeds and bon voyage. The pleasures of a lifetime were enjoyed in an hour. It seemed glorious to dwell together in such unity. Renewed fealty to the grange was apparent on every hand and a lasting good to the community and homes must result. Thus ended the grange campaign, which covered many miles of territory and numerous granges, requiring the expenditure of considerable money, time and energy, both on the part of speakers and patrons. We feel much satisfaction at the success of the affair. Every appointment has been filled, and but for the delay of a train in one instance all would have been filled on time.

It is a matter of much congratulation that, from the first opening song at Tulare to the closing one at Grass Valley, not one disagreeable incident marred the pleasure, interest or success of the campaign. Throughout the whole affair we have been fully as much learners as imparters, as much pupils as teachers, and our only regret is that our ability was not greater, that our mistakes were not less, and that amid our hurry we may not always have said the most fitting word in the best way. We deem it but a duty to return our sincere thanks to all the noble sisters, brothers and granges, individually and collectively, for their boundless hospitality, their fraternal greetings, their helpful words of cheer and encouragement, and lastly for their kindly charity which overlooked our defects, and faithfully and intelligently labored to crown the affair with victory complete. In behalf of the State Grange of California, and in common with all its worthy members, we would return a just meed of praise and appreciation to our national lecturer, Bro. Messer. He proved himself an advocate of far-reaching ability, of broad views, of sterling, conservative convictions; he reached the heads and hearts of our people with his truthful, common-sense manners and thoughts, disarmed them as to any sectionalism between the farmers of the East and the West, faithfully, ably and eloquently portrayed the exalted mission of the Grange and the practical means of attaining its full benefits, and gained the respect, esteem and admiration of our people. He did his best for the grange cause in our State, and we unitedly join in returning our thanks for his manly, patriotic efforts while here.

We are much indebted to the press of the State for its kindly notices and moral support all along the line.

At Colfax we parted with Bro. Messer, who took the train for Denver, Colorado, from which point he will continue his grange work through that State, then into Nebraska, Iowa, Illinois, and on back to his home, which he hopes to reach the last of June.

RUN DOWN WITH
DYSPEPSIA
STOMACH
Liver
AND HEART
AFFECTED.
Almost in Despair
But Finally
CURED
By Taking
AYER'S PILLS



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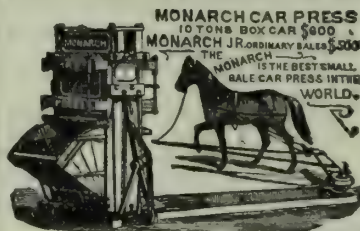


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Sole Manufacturer of Patent Tule Covers,
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S. F. MARKET REPORT

Market Review.

SAN FRANCISCO, May 16, 1894.

The wheat market continues in a very unsatisfactory condition. There is no selling pressure, yet prices continue to steadily decline, more in sympathy with the situation at foreign distributing centers than from any positive desire to realize. Exporters are not doing anything and are not likely to begin to operate until the Liverpool market commences to show improvement. Spot wheat, suitable for shipping purposes, is hardly quotable over 87½¢ per ctt., being nominal to a great extent, as but little stock is changing hands. Milling wheat is quotable at \$1@1.07½ per ctt.

Barley.

The Barley market is not quite as buoyant as it was a week or so ago. The late rain has tended to check the upward progress of values, and buyers are at less disadvantage. Sample trade is not lively, purchases being slow and not of liberal proportions. In speculative circles there is fair volume of business, with unsteadiness in price, the market being sensitive to weaker variations. We quote: Fair to good feed, 1½¢ to \$1.02½; choice bright, \$1.03½ to \$1.05; Brewing barley, \$1.12½ to \$1.17½ per ctt.

Dried Fruits.

Quotations are somewhat nominal, as stocks are light and trade at the moment is of insignificant character. We quote: Apples, 6½¢ to 7½¢ for quartered, 7½¢ to 8¢ for sliced, and 9¢ to 10¢ for evaporated; Pears, 6¢ to 8¢ for bleached halves and 2¢ to 4¢ for quarters; bleached Peaches, 11¢ to 12½¢; sun-dried Peaches, 8¢ to 9¢; Apricots, nominal; Prunes, 5½¢ to 6¢ for the four sizes, - for the five sizes and 4½¢ to 5½¢ for small; Plums, 5¢ to 6¢ for pitted, and 2 to 3¢ for unpitted; Figs, 3 to 4¢ for pressed and 1½ to 2¢ for unpressed; White Nectarines, - to -; Red Nectarines, - to - per lb.

Raisins.

Stocks are declining, but there is no improvement in prices. We quote: California Layers, 60¢ to \$1; loose Muscatels, in boxes, 50 to 75¢; clusters, \$1.25 to \$1.50; No. 1 loose, in sacks, 2½ to 3¢ per lb; No. 2 do, 2¼ to 2½¢; Dried Grapes, 1½ to 1¾¢.

General Produce Market.

OATS—The demand is not satisfactory to sellers, being light and irregular, while prices as a rule show easy feeling. Stocks are not particularly heavy and arrivals of magnitude from any source are hardly probable in the near future. But the market generally sympathizes with the weak feeling in other articles of feed. We quote: Milling, \$1.20 to \$1.30; Surprise, \$1.37½ to \$1.45; fancy feed, \$1.27½ to \$1.32½; good to choice, \$1.15 to \$1.27½; poor to fair, \$1.10 to \$1.15; Black, nominal; Red, nominal; Gray, \$1.12½ to \$1.20 per ctt.

CORN—The inquiry is very limited. Offerings embrace both domestic and Nebraska stock, a carload of the latter arriving yesterday. Quotable at \$1.25 to \$1.27½ per ctt for Large Yellow, \$1.32½ to \$1.35 for Small Yellow and \$1.25 to \$1.30 for White.

CRACKED CORN—Quotable at \$27.50 to \$28.50 per ton.

CORNMEAL—Millers quote feed at \$27.00 to \$28.00 per ton; fine kinds for the table, in large and small packages, 2¼ to 3½¢ per pound.

OILCAKE MEAL—Quotable at \$37.50 per ton from the mill.

COTTONSEED OILCAKE—Quotable at \$32.50 per ton.

SEEDS—We quote: Mustard, brown, \$2.25 to \$2.50; Yellow, \$3 to \$3.50; Triese, \$2.50 to \$2.75; Canary, 3¢ to 4¢; Hemp, 3¼ to 4¼¢ per lb; Rape, 2 to 2½¢; Timothy, 6½¢ per lb; Alfalfa, 11½ to 13¢; Flax, \$3 to \$3.25 per ctt.

MIDDINGS—Quotable at \$19 to \$21 per ton. MILLSTUFFS—We quote: Rye Flour, 3½¢; Rye Meal, 3¢; Graham Flour, 3¢; Oatmeal, 4½¢; Out Groats, 5¢; Cracked Wheat, 3½¢; Buckwheat Flour, 5 to 5½¢; Pearl Barley, 4¼ to 4½¢ per lb; Normal Nutrient, \$3 per case of 1 dozen cans; Breakfast Delight, \$3.25 per case of 2 dozen packages.

BRAN—Quotable at \$16.50 to \$17 per ton.

HAY—Prices are stationary. Receipts are fairly liberal, but dealers have so far handled all arrivals without causing any marked changes in values. The future of the market in regard to quotations will depend on the amount that may be shipped for sale. Wire-bound Hay sells at \$1 per ton less than rope-bound hay. Following are wholesale city prices for rope-bound hay: Wheat, \$12.50 to \$16.15; Wheat and Oat, \$12.50 to \$15; Wild Oat, \$12 to \$14.50; Alfalfa, \$10 to \$12.50; Barley, \$11 to \$15.50; Compressed, \$12 to \$15; Stock, \$10 to \$12.50 per ton.

STRAW—Quotable at 75 to 85¢ per bale.

HOPS—Dullness still prevails. Quotations nominal at 12½ to 15¢ per lb.

RYE—Quotable at \$1.15 to \$1.17½ per ctt.

BUCKWHEAT—Quotable at \$1 to \$1.15 per ctt.

GROUND BARLEY—Quotable at \$24 to \$25 per ton.

POTATOES—We quote new: Common, 50¢ to \$1; Early Rose, \$1.25; Sweet, 75¢ to \$1.25 per ctt. We quote old: Early Rose, 25 to 35¢; River Burbanks, 35 to 50¢; River Red, 20 to 30¢; Oregon Burbanks, 60 to 95¢.

ONIONS—New are quotable at 50 to 65¢ per ctt.

DRIED PEAS—We quote: Green, \$1.50 to \$1.75; Blackeye, \$1.60 to \$1.65; Niles, \$1.50 to \$1.75 per ctt.

BEANS—Market quiet, but steady. We quote: Bayos, \$2.50 to \$2.70; Pink, \$1.90 to \$2.05; Red, \$2 to \$2.25; Lima, - to -; Pea, \$2.35 to \$2.50; Small White, \$2.40 to \$2.65; Large White, \$2.40 to \$2.50 per ctt.

VEGETABLES—Only a few sacks of Green Peas arrived yesterday, and prices were steadier. The rain temporarily stopped picking. Other receipts included 874 bxs Asparagus and 164 bxs Rhubarb. There is good demand for the several kinds.

Cucumbers, 35 to 50¢ per dozen for common and 50¢ to \$1 for good to choice; Asparagus, 35¢ to 75¢ per box for the ordinary run and 90¢ to \$1 per box for choicer quality; Rhubarb, 25 to 50¢ per box; Green Peas, \$1.25 to \$1.50 per sk; Garden Peas, 2 to 2½¢ per lb; Summer Squash, 5 to 8¢ per lb; String Beans, 3 to 5¢ per lb; Refugee Beans, 4 to 6¢ per lb; Wax Beans, 4 to 5¢ per lb; Marrowfat Squash, - to - per ton; Hubbard Squash, - to - per ton; Green Peppers, - to - per lb; Tomatoes, \$1 to \$2 per box; Turnips, 75¢ per ctt; Beets, 75¢

per sack; Parsnips, \$1.25 per ctt; Carrots, 35 to 40¢; Cabbage, 50 to 60¢; Garlic, 3 to 4¢ per lb; Cauliflower, 60 to 70¢ per dozen; Dry Peppers, 17½ to 20¢ per lb; Dry Okra, - to - per lb.

FRESH FRUIT—New Apples from Vacaville are selling at 50¢ per box, being poor. Apricots first of the season, also from Vacaville, arrived yesterday, remaining unsold at a late hour, as they were green and unattractive. The first Currants of the season have arrived from San Leandro, bringing 60¢ to \$1 per drawer, being fairly ripe. Cherry receipts yesterday were 1074 boxes. We quote: Cherries, white, 25 to 50¢; black, 25¢ to \$1.25; Apples, \$1 to \$2 per box.

BERRIES—Light receipts of Strawberries caused higher prices yesterday. No Raspberries came in. Gooseberries are in ample supply for all present wants. We quote: Strawberries, 5¢ to 8¢ per chest for Sharpless and 8¢ to 10¢ for Longworths in baskets and 9¢ to \$1 in drawers. Gooseberries, 2½ to 3¢ for common, and 5 to 6¢ per lb for the English variety.

CITRUS FRUIT—Prices of Oranges are now shaping in favor of buyers. Choice offerings are rather scarce. We quote: Fair to choice Navel Oranges, \$1.50 to \$2.50 per box; Seedlings, \$1 to \$1.50; Mexican Limes, \$4 to \$5 per box; Lemons, Sicily, \$4 to \$5; California Lemons, \$1 to \$1.25 for common and \$1.50 to \$2.50 for good to choice; Bananas, \$1.50 to \$2.50 per bunch; Hawaiian Pineapples, \$2.50 to \$3; Mexican Pineapples, \$3 to \$3.50 per dozen.

NUTS—Business is of moderate proportions only. We quote: Chestnuts, 6 to 8¢ per lb; Walnuts, 6 to 7½¢ for hard shell, 8 to 9¢ for soft shell and 8 to 9¢ for paper shell; California Almonds, 10 to 11¢ for soft shell, 6 to 7¢ for hard shell and 11½ to 12½¢ for paper shell; Peanuts, 3 to 4¢; Hickory Nuts, 5 to 6¢; Filberts, 10 to 10½¢; Pecans, 5 to 8¢ for rough and 8 to 10¢ for polished; Brazil Nuts, 8 to 9¢; Coconuts, \$5 to \$5.50 per 100.

HONEY—Firm holding is a feature of the market, though business is quiet and slow. We quote as follows: Comb, 10½ to 11½¢ per lb for bright and 9 to 10¢ for dark to light amber; water white extracted, 5½¢; amber extracted, 5 to 5½¢; dark, 4 to 5¢ per lb.

BEESWAX—Quotable at 24 to 25¢ per lb.

BUTTER—The market wears an easy tone, owing to continued liberal arrivals, without any corresponding increase in the demand. Trade is of goodly proportions, though not large enough to prevent some little accumulation at the various depots. The recent lowering of asking rates may cause greater consumption. Quotations for pickled quantities have also been reduced. We quote: Fancy Creamery, 18 to 19¢; fancy dairy, 17 to 18¢; good to choice, 15 to 16¢; store lots, 12 to 14¢; pickled roll, new, 19 to 21¢ per lb.

CHEESE—The market shows an improving tendency, a small advance on former quotations being established this week. We quote as follows: Choice to fancy, 9 to 10¢; fair to good, 7½ to 8½¢; Eastern, ordinary to fine, 14 to 15¢ per lb.

EGGS—There is a healthy tone to the market and full figures are promptly paid for Eggs that are large, white and uniformly fresh. The demand is mostly for the better class of goods. Consignments of the Eastern article still come forward, competing with the domestic product. We quote: California ranch, 15 to 18¢; store lots, 13 to 15¢; Eastern, 14 to 15¢ per dozen.

POULTRY—A carload of Eastern Poultry is due to-day. The market is pretty well supplied with domestic fowl, sales being slow and prices easy. We quote: Live Turkeys—Gobblers, 8 to 10¢; Hens, 10 to 11¢; dressed Turkeys, 10¢ per lb for Gobblers and 10¢ for Hens; Roosters, \$3.25 to \$3.50 for old and \$7 to \$9 for young; Broilers, \$2 to \$3 for small and \$4.50 to \$5.50 for large; Fryers, \$6 to \$7; Hens, \$3 to \$4; Ducks, \$3 to \$4 for old and \$5 to \$7 for young; Geese, \$1 to \$1.25 for old and \$1.50 to \$2 for young; Pigeons, \$2 to \$2.50 per dozen.

PROVISIONS—The situation is rather favorable for the selling interest. We quote: Eastern Sugar-cured Hams, 13 to 13½¢; California Hams, 12 to 12½¢; Bacon, Eastern, extra light, sugar-cured, 14¢; medium, 10¢; do, light, 10½¢; do, light, boneless, 12¢; light, medium, boneless, 11¢; Pork, extra clear, bbls, \$20; hf bbls, \$10.50; clear, bbls, \$19; hf bbls, \$10; boneless Pig Pork, bbls, \$21.50; hf bbls, \$11; Pigs' Feet, hf bbls, \$4.75; Beef, mess, bbls, \$7.50 to \$8; do, extra mess, bbls, \$8.50 to \$9; do, family, \$9.50 to \$10; extra do, \$11 to \$11.50 per bbl; do, smoked, 10¢; Pickled Tongues, hf bbls, \$8; Eastern lard, tierces, 7½ to 8¢; do prime steam, 10¢; Eastern pure, 10-lb pails, 10½¢; 5-lb pails, 10½¢; 3-lb pails, 10½¢; California, 10-lb tins, 9¢; do, 5-lb, 9½¢; do, kegs, 10½¢; do, 20-lb buckets, 10¢; compound, 7½¢ for tierces.

WOOL—Fair activity has prevailed in local Wool circles during the past week both for shipment and scouring account. The demand was mostly for good to choice qualities. The circular of Thomas Denigan, Son & Co. says: "Eastern business is quoted small for the week with a 'heavy' feeling among Wool dealers. The San Francisco market was good last week and considerable Wool changed hands, chiefly for scouring. Shippers have also bought moderately of the better grades of Wool, and express inclination for more. The trouble seems to be that real choice free Wools are scarce, while of the shrunken, defective class there is much more in stock than buyers can be found for. As a result, the faulty Wools will beslow of sale and drag along through the summer before being finally worked off. We have nothing comforting to write as to prospects, as there are no prospects." We quote spring: Year's fleece, per lb., 5 to 7¢; Six to eight months, San Joaquin, poor, 5 to 6¢; do fair, 7 to 9¢; Oregon and Washington: Heavy and dirty, 6 to 7¢; good to choice, 8 to 10¢; valley, 10 to 13¢. We quote fall: Northern defective, 5 to 6¢; Southern and San Joaquin, 3 to 4¢.

San Francisco Meat Market.

Beef is a trifle cheaper. Mutton and Lamb are both in good supply, with prices favoring buyers. Supplies of Calves continue large. Following are the rates for whole carcasses from slaughterers to dealers:

BEEF—First quality, 5 to 5½¢; second quality, 4 to 4½¢; third quality, 3½ to 4¢ per lb.

CALVES—Quotable at 3 to 5¢ per lb.

MUTTON—Quotable at 5 to 6¢ per lb.

LAMB—Spring, 6½ to 8¢ per lb.

PORK—Live Hogs, on foot, grain fed, heavy and medium, 4½ to 4¾¢; small Hogs, 3½ to 4¢; stock

Hogs, 3 to 3½¢; dressed Hogs, 6 to 6½¢ per lb.

Seeds, Plants, Etc.

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All Colors — Red, White, Blue, Yellow, Pink, Purple.

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Catalogue free.

E. D. STURTEVANT,

148 Kern Street.....Los Angeles, Cal.

OLIVE TREES.

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ALFALFA!

Grass, Clover, Vegetable and Flower Seeds, Onion Sets.

LARGEST STOCK AND MOST COMPLETE ASSORTMENT.

Illustrated, Descriptive and Priced Seed Catalogue for 1894 mailed free to all applicants. Address

E. J. BOWEN,

815 & 817 Sansome St., San Francisco, Cal.

65 Front Street, Portland, Or.

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TREES and PLANTS.

A fine assortment, best varieties, free from pests of any kind. Prunus Simoni, Bing, Rostraver and Murdoch Cherries, Black California Figs; Rice Soft Shell and other Almonds, American Sweet Chestnuts, Propagators' Walnuts. Hardy mountain grown Orange Trees. Our Oranges have stood 22 degrees this winter without injury. Dollar Strawberry, the best berry for home use or market. Address C. M. SILVA & SON, Lincoln, Placer County, California.

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MONTEREY CYPRESS

FOR SALE.

Everything for the Garden.

Catalogue Free.

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517 Fourteenth Street, OAKLAND, CAL.

FOR SALE.

CAULIFLOWER SEED, of large kind called the PISA; originally from Italy. Some raised by an Italian in Los Angeles county. Samples for trial furnished free. Apply to S. W. LEVY & CO., 218 & 220 Washington St., San Francisco.

Deep Well Pumps.

The valves and working parts of the Fulton Pump can be removed, repaired and replaced without taking the pump out of the well.

Pumps fitted up for all depths of wells, ready to put in.

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Manufacturer of Pumps and Windmills.

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110 and 112 Beale Street, S. F.

MACHINE WORKS,

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And All Kinds of MACHINERY.



YOU NEED NOT PLANT BEANS EVERY YEAR

IF YOU PLANT

MELDE'S PERENNIAL BEAN.

Approved and Recommended by Prof. E. J. Wickson of the University of California.

It is the first of its kind; a large white pole bean; a vigorous grower and prolific bearer; splendid for all purposes—as a string bean, shelled bean; superior to the Lima as a dry bean; also fine for pickling.

The plant gets stronger every year by its perennial root, and will endure more hardship in dry seasons, etc.

The roots can be transplanted at any time during their dormant state.

The bean bears a full crop the first season from the seed.

In case of injury by late frost it will grow up again from the root, even in young seedlings.

MELDE'S PERENNIAL is just the bean for climates like that of California, where frost is not severe enough to kill the roots. It saves time by making it unnecessary to prepare ground every spring for new plantings. Every bean grower can have his permanent bean patch.

It may be planted as late as June 15th, in moist ground, and from fifty seeds enough should be secured to plant an acre the next season.

The beans should be planted at least a foot apart in the rows.

SAMPLE LOTS OF 50 BEANS, BY MAIL, FOR ONE DOLLAR.

HENRY MELDE,

FLORIST AND NURSERYMAN,

EUREKA, Humboldt Co., - - - CAL.

FOR THE SEASON OF 1893-94.

BUDED ORANGE TREES, of leading varieties, one and two-year buds, also a small lot of choice budded and seedling LEMON TREES. Sweet Seedling Oranges, 1 to 4 years old. Shade and Ornamental Plants. Prices to suit the times.

ORCHARD AND NURSERY.....THERMALITO, BUTTE COUNTY, CAL.

For Price and Terms, Address

OROVILLE CITRUS ASSOCIATION, - - - OROVILLE, BUTTE CO., CAL.

Correspondence Solicited.

Patents Issued to Pacific Coast Inventors.

Reported by Dewey & Co., Pioneer Patent Solicitors for Pacific Coast, 220 Market Street.

FOR WEEK ENDING MAY 1, 1894.

519,223.—MARKING BRUSH—R. G. Bailey, S. F.
519,226.—POWER WHEEL—A. Blenkowski, S. F.
519,230.—SWITCH—Brackelsburg & Edwards, Portland, Or.
519,233.—PAUL HANDLE—F. M. Buck, Spokane, Wash.
518,936.—PLOW—Burkhart & Smith, Dayton, Wash.
519,016.—BICYCLE STAND—R. M. Clairmont, S. F.
519,240.—METAL PUNCH—T. E. Clark, Cleone, Or.
519,241.—BOILER—Collier & Dignard, Lakeport, Cal.
519,254.—PIPE WRENCH—J. Geisendorfer, Weimer, Cal.
519,182.—SHEET METAL TUBES—J. Gould, Jr., S. F.
519,114.—ELEVATOR—C. I. Hall, S. F.
519,129.—SMELTING ORES—H. Lang, Tacoma, Wash.
519,022.—CAR COUPLING—J. W. Lang, Los Angeles, Cal.
519,197.—MOWER—R. McGahey, Walla Walla, Wash.
519,206.—CAN HEAD SOLDERING MACHINE—W. H. Smyth, S. F.
519,010.—SURVIVING INSTRUMENT—W. B. Whipple, Portland, Or.

NOTE.—Copies of U. S. and Foreign patents furnished by Dewey & Co. in the shortest time possible (by mail or telegraphic order). American and Foreign patents obtained, and general patent business for Pacific Coast Inventors transacted with perfect security, at reasonable rates, and in the shortest possible time.

A Very Valuable Device.

The value of ventilation as an agent for the preservation of fresh fruit in transit is only just beginning to be understood by shippers. Last year it was demonstrated that boxes so packed that there was no actual contact of one fruit with another, and as to allow a free circulation of air not only around the packages, but around the fruit itself, reached Chicago in better condition than shipments made under ice. Of all the methods of ventilation thus far developed there is none other which affords the advantages of the paper holders made and sold by the California Ventilated Fruit-Carrier Company of this city. It does the business with small loss of space and with no extra cost for handling. Mr. H. L. McKel-

laps, president of the company which makes and sells these packages, may be found or addressed at No. 12 Montgomery St., this city, room 8; and it is worth the while of fruit-shippers to call on or correspond with him.

—The Board of Directors of the Turlock, Cal., Irrigation District Company let the contract for the completion of the entire canal, including tunnels, headgates, drops, lateral canals, etc., on the 4th inst. to Doe, Hunt & Co. of San Francisco. This will open up 176,000 acres of land to irrigation between the Tuolumne and Merced rivers in Stanislaus and Merced counties. The mammoth rubble masonry dam near La Grange, which is the highest overflow dam in the world for diverting water, was completed last December.

—L. C. Dillman of Spokane, Wash., has proposed to the Tacoma Chamber of Commerce that it have all the unemployed men now marching on to Washington taken to Tacoma, fitted out and set to work digging three irrigating canals across the State, the men employed to be fed and clothed and their expenses paid, and their wages paid in interest-bearing bonds, secured by land along the ditches.

—The British ship Somaui recently arrived from Hongkong with 2500 tons of coal brought originally from Tonquin to Hongkong at a cost of \$2 per ton. It cost about as much more to get it across the Pacific, and the duty was seventy-five cents per ton. San Francisco is long on coal just now, and \$1 a ton was what the lot sold at last Saturday.

RUDY'S PILE SUPPOSITORY is guaranteed to cure Piles and Constipation, or money refunded. 50 cents per box. Send stamp for circular and Free Sample to MARTIN RUDY, Lancaster, Pa. For sale by all first-class druggists.

A Great Manufacturing Industry.

Wherever machinery is used for harvesting grain and grass the name McCormick is well and favorably known. That others before the late Cyrus Hall McCormick had given thought and experiment to the inventing of a grain-cutting mechanism it would be folly to dispute, but that he was the first to give to the world a practical and successful reaper is a fact so well established that only jealous opposition would presume to undertake its refutation. It was in 1831, near Walnut Grove, Va., that young McCormick, then 22 years of age, announced to the world a realization of his hopes and accompanied the announcement with a practical demonstration by harvesting a field of oats with his newly evolved



ORIGINAL MCCORMICK REAPER—1831.

reaping machine. The underlying principles of that machine are found in every harvesting mechanism to this day. They are the divider, the reel, the platform and the reciprocating knife. Touching this point regarding the foundation principles of all harvesting machines, Knight's New Mechanical



THE "MACHINE OF STEEL"—1894.

Dictionary, by Edward H. Knight, A. M., LL. D., says:

"While there have been many valuable improvements in detail, it may be truthfully said that to dispense with Cyrus H. McCormick's invention would be to wipe every reaper out of existence. The original machine of McCormick embraces the following features: The serrated reciprocating blade, operating in fingers or supports to the grain being cut. The platform for receiving the cut grain deposited thereon by the reel and from which it was raked to the side in gables ready to bind. A divider to separate the grain to be cut from that left standing."

And in the same line is the report of the Commissioner of Patents, made in 1859, who, in refusing the extension of one of Mr. McCormick's patents on the ground that it was of too much value and importance to the public, said that "not a successful reaping machine could be made without a license from Cyrus H. McCormick."

Again, at the first World's Fair, held in London

always claimed these machines were better than those of any other manufacturer, to those who knew their method of doing business it was not surprising that they promptly signified their willingness to take them into the field tests conducted by the World's Fair management. All manufacturers of harvesting machinery were invited to participate in these trials, but aside from one solitary mower, the McCormick grain and grass cutters were the only ones present. The medals and diplomas awarded them were, therefore, of the highest value, and to them the greatest honor attaches. In this day and age, when it is so common for manufacturers and dealers to assert that their wares are "the best" it is gratifying to find a concern that is willing to go into the competitive field against the world and prove their claims. To those, however, who have been cognizant of the methods, the policy and the aims of the McCormick Harvesting Machine Company, a course contrary to that pursued by them in relation to the World's Fair field trials could not reasonably have been expected.

CUT OUT THIS COUPON

Those of our readers who improved the opportunity of attending the

WORLD'S FAIR

will always remember it as one of the grandest privileges of their lives.

SAVE THIS COUPON.

It contains some things you ought to know. You ought to know that the World's Fair Management asked all manufacturers of Binders and Mowers to take their machines into the grain and grass fields, and by their work prove their claims. You ought to know that the manufacturers of McCormick Binders and Mowers promptly notified the World's Fair Committee that they would comply with this reasonable request. You ought to know that various other manufacturers of Binders and Mowers sent representatives to examine the grain and grass fields specified, and that these representatives reported to their respective companies that the condition of the crops to be cut was such that ordinary machines could not handle them. You ought to know that none of those manufacturers allowed their machines to go into these tests where they knew the McCormick Binders and Mowers would be at work. You ought to know that the World's Fair Judges said of McCormick Binders that they were simple and easily operated, and that their performance was in all respects thoroughly satisfactory. You ought to know that they said of McCormick Mowers that their draft is at least 20 lbs. lighter than the draft of ordinary mowers. You ought to know these things because you don't want to make a mistake when it comes to buying so important a farm implement as a Binder or a Mower. You want the best.

The Peristyle.

The Court of Honor.

The Golden Statue of the Republic.

Administration's Beauteous Temple.

The Colossal Manufacturers Building.

Transportation's Golden Doorway.

"Midway's" Wealth of Orientalism.

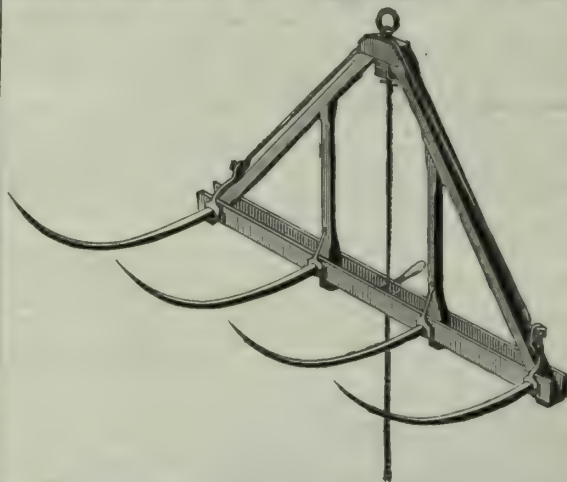
WHO CAN EVER FORGET THEM?

Or who can ever forget the proud distinction achieved by McCormick Binders and Mowers? Who can ever forget that the McCormick received the highest awards given for any make of Binders and Mowers, and that in the regular field trials they earned the only honorable mention for grain and grass cutting machinery?

Write to the

MCCORMICK HARVESTING MACHINE CO., CHICAGO; or, better yet, call on your nearest McCormick Agent.

JACKSON'S "LIGHT WEIGHT" FORKS



Made and Sold under the following Letters Patent:

No. 197,137.....Nov. 13, 1877
No. 210,458.....Dec. 3, 1878
No. 306,667.....Oct. 14, 1884
No. 403,019.....May 7, 1889

Other Patents Pending.

The purpose of this notice is to inform both farmers and merchants, who use or sell Horse Forks, that they must not purchase Horse Forks that infringe the above Patents; and to call their attention to the fact that certain horse forks, manufactured by F. E. Myers & Bro., Ashland, O., and imported and sold by the Deere Implement Company, of San Francisco, are direct infringements of the above patents, the manufacturers of the infringing forks having admitted in Court that their forks were an infringement of the above patents, and are now paying royalty for manufacturing and selling them east of the Rocky Mountains; and they have agreed not to sell any west of said Rocky Mountains.

All parties selling or using these infringing Horse Forks will be promptly prosecuted.

PRICES JACKSON'S "LIGHT WEIGHT" HORSE FORKS:

3-foot with four tines, very light Fork for Hay.....each \$25
3, 4 and 4 1/2 feet, with four tines, for Threshing Machines and Stacking Hay with my Walker Carrier....." 30
5 and 6 feet, with six tines, for Light Heading or Large Loads....." 35
Extra Fork Tines, \$2.50 each. My tines are nicely finished and tempered. This fork is constructed on common-sense, scientific principles; no unnecessary weight in it.

—MANUFACTURED BY—

BYRON JACKSON MACHINE WORKS,
OFFICE: 626 SIXTH STREET, SAN FRANCISCO.

NAPA VALLEY NURSERIES.

(ESTABLISHED 1878.)

The Fruit Tree Planting Season being over for this season, attention is called to

Flower and Foliage Plants in Great Variety.

CHRYSANTHEMUMS, the best of the best, now ready. Fine young plants for fall blooming. Ageratum, Achyranthus, Cyperus alternifolius, Palms, Fuchsias, Geraniums, Carnations. FINE PLANTS AT LOW FIGURES.

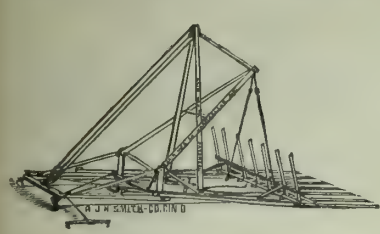
A great variety of well-grown plants of the most favorite sorts. Send for catalogue.

A magnificent stock of Fruit Trees being grown for next season.

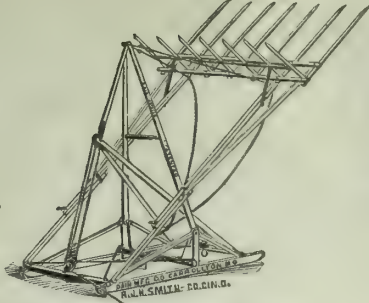
LEONARD COATES, - - - NAPA, CAL.

Residence: Sausal Fruit Farm.

Hay Stackers, Hay Rakes, Hay Derricks.



STACKER READY TO RECEIVE
LOAD.



Stacker with Load Partially Raised.

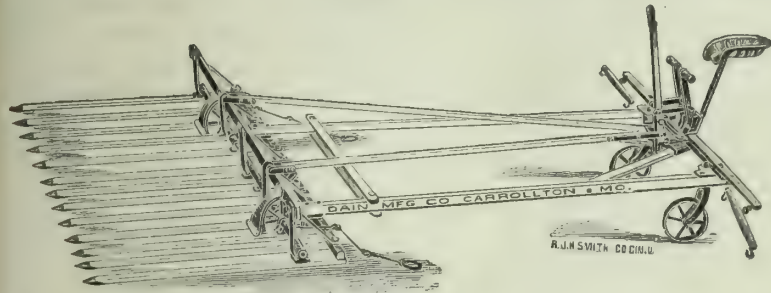
DAIN JR. AUTOMATIC HAY STACKER.

This Stacker will put up more hay in less time, and do it better than any other device on the market. It is the ONLY STACKER MADE THAT WILL DELIVER THE HAY INTO THE CENTER OF THE STACK FROM TOP TO BOTTOM. With this machine IT IS POSSIBLE TO BUILD A STACK ANY HEIGHT DESIRED.

It can be taken down, or made ready to move in one minute, and when hauled to another part of the field, made ready to stack in the same time. ONE THIRD LIGHTER DRAFT than any other, owing to its peculiar arrangement of hoisting rope, together with a movable derrick pivoted near the center of gravity, and moving in a circle with the hay fork, requiring the same power, only, to elevate at all points of altitude.

THE DAIN JR. POWER LIFT PUSH RAKE.

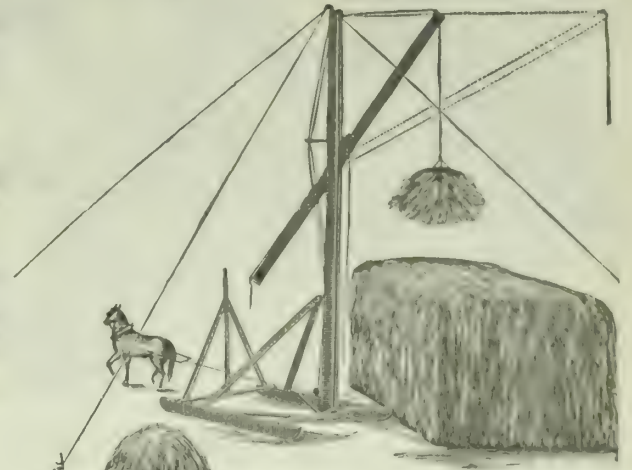
4 WHEELS, 14 FOOT.



Strong, Durable
—AND—
Easily Operated.

Fully Patented.
Beware of Infringements.

WILL BUILD A
RICK
30 FT. HIGH
When Completed.



THE OLIVER DERRICK—IN OPERATION.

THE OLIVER DERRICK.

(PATENTED JANUARY 6, 1890.)

After a most thorough and practical test of this machine we offer it to our customers knowing that it will, in every particular, prove all that is required of a first-class derrick.

We claim for this machine: First—it is the only Derrick having an extension boom, whereby load can be deposited at any point on a very large rick.

Second—it is the only Derrick that can be easily and quickly folded for transportation. Horse used for hoisting hay can elevate mast and man can lower same.

Third—it is the only THOROUGHLY PRACTICAL Derrick in the market. It is well made of good material, and we will send it anywhere, guaranteeing satisfaction.

We are Headquarters on all kinds of Haying Tools.

Hay Forks and Hay Carriers of Every Description.

SEND FOR CIRCULARS.

HOOKER & CO., 16 & 18 DRUMM ST., NEAR MARKET,
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404 & 406 DAVIS ST. S. F.

MOORE, FERGUSON & CO.

WOOL, GRAIN, FLOUR

—AND—

General Commission Merchants,

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Members of the San Francisco Produce Exchange.

Personal attention given to sales and liberal advances made on consignments at low rates of interest.

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From \$1000 upwards at market rates. We also deal in county lands. Several foreclosed properties for sale cheap, on easy terms. Write for list, or if you desire to sell, send us full particulars. LINDSAY & CRAIG, Land and Financial Agents, Crocker Building, San Francisco.

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Dovetailed Hives, Sections, Comb Foundation, Foundation Machines, Extractors, Smokers, Honey Knives, Alloy's Traps, Perforated Zinc Honey Boards, Shipping Cases, Cans and Cases for Extracted Honey, Bee Tents, ROOT'S GOODS, and everything required by the trade, wholesale and retail.

WM. STYAN, San Mateo, Cal.

BEE-KEEPERS SEND FOR Sample copy of **CLEANINGS IN BEE CULTURE.** A Handsomely Illustrated Magazine, and Catalog of **BEE SUPPLIES** FREE. A. I. ROOT, Medina, O.

A. T. DEWEY.

W. B. EVER.

G. H. STRONG.

DEWEY & CO.'S

Scientific Press



Patent Agency.

ESTABLISHED 1863.

Inventors on the Pacific Coast will find it greatly to their advantage to consult this old experienced, first-class Agency. We have able and trustworthy Associates and Agents in Washington and the capital cities of the principal nations of the world. In connection with our editorial, scientific and Patent Law Library, and record of original cases in our office, we have other advantages far beyond those which can be offered home inventors by other agencies. The information accumulated through long and careful practice before the Office, and the frequent examination of Patents already granted, for the purpose of determining the patentability of inventions brought before us, enables us often to give advice which will save inventors the expense of applying for Patents upon inventions which are not new. Circulars of advice sent free on receipt of postage. Address DEWEY & CO., Patent Agents, 220 Market St. S. F.

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FRUIT PAPER!

Wax or Paraffine Paper, as well as a large variety of other Papers for the wrapping and packing of Green and Dried Fruits and Raisins.

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MECHANICAL ENGINEERS AND
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CONDENSED MILK

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Instructions given in all the Secret Processes for making any kind of Condensed Milk Products.

We are the only firm in the world who build Condensed Milk Factories complete, put them in operation and guarantee results, and are in no way associated with any other person, firm or company.

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A PRACTICAL TREATISE ON THE RAISIN GRAPES, their History, Culture and Curing. By Gustav Eisen. This is the Standard Work on the Raisin Industry in California. It has been approved by Prof. Hilgard, Prof. Wickson, Mr. Chas. A. Wetmore and a multitude of practical raisin-growers. Sold by the DEWEY PUBLISHING CO., or its Agents at the uniform price of \$3, postage prepaid. Orders should be addressed:

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220 Market St., San Francisco.

CALIFORNIA FRUITS AND HOW TO GROW THEM By Prof. Edward J. Wickson.

A practical, explicit and comprehensive book embodying the experience and methods of hundreds of successful growers, and constituting a trustworthy guide by which the inexperienced may successfully produce the fruits for which California is famous. 600 pages. Fully illustrated. Price \$3 Postpaid. Send for circular. DEWEY PUBLISHING CO. Publishers. 220 Market Street, San Francisco, Cal.

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OF CALIFORNIA.

SAN FRANCISCO, CAL.

INCORPORATED.....APRIL, 1874.



Capital paid up.....\$1,000,000
Reserve Fund and Undivided Profits, 120,000
Dividends paid to Stockholders..... \$32,000

OFFICERS.

A. D. LOGAN.....President
I. O. STEELE.....Vice-President
ALBERT MONTPELLIER.....Cashier and Manager
FRANK McMULLEN.....Secretary

General Banking. Deposits received, Gold and Silver. Bills of Exchange bought and sold. Loans on wheat and country produce a specialty.

January 1, 1894. A. MONTPELLIER, Manager.

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BUSINESS COLLEGE.

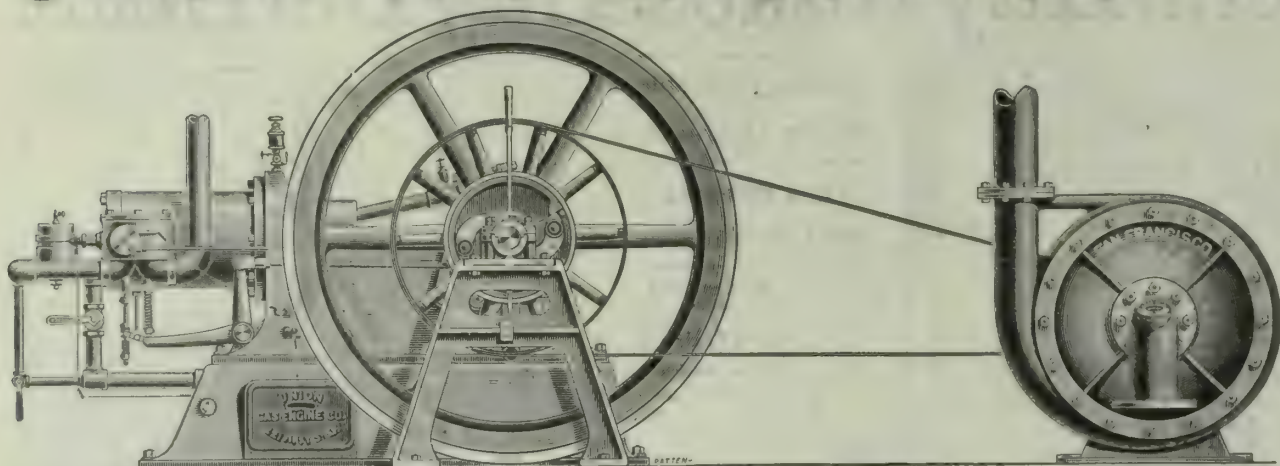
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Of Gasoline Engines and
Owners of Twenty Patents
on same.



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UNION GAS ENGINE CO., 221-223 First Street, San Francisco, Cal.

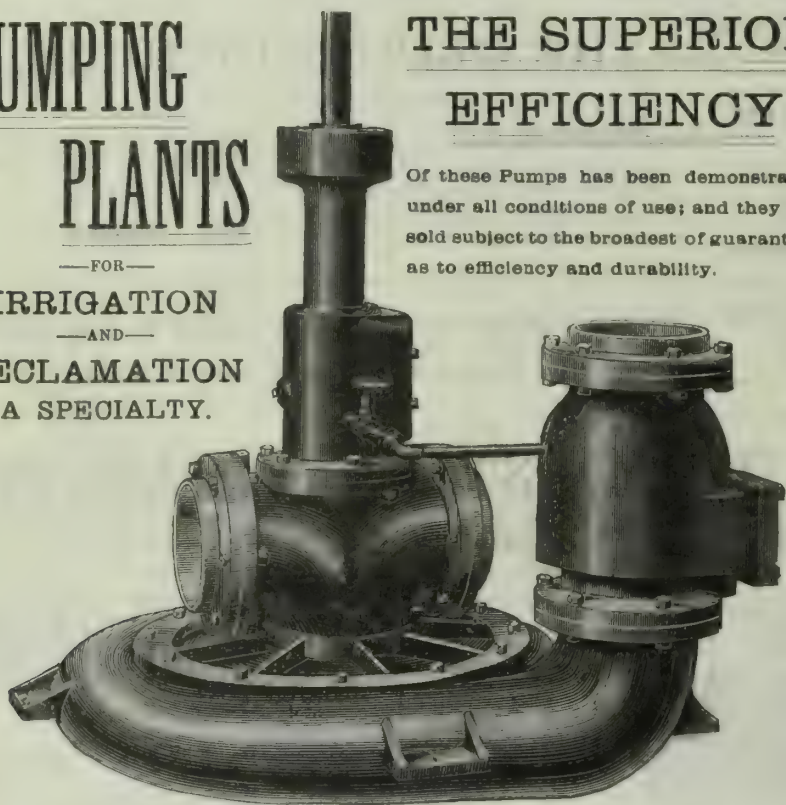
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PUMPING PLANTS

—FOR—
IRRIGATION
—AND—
RECLAMATION
A SPECIALTY.

THE SUPERIOR EFFICIENCY

Of these Pumps has been demonstrated under all conditions of use; and they are sold subject to the broadest of guarantees as to efficiency and durability.



Jackson's Vertical Water-Balanced Runner and Shaft "Whirlpool" Centrifugal Pump.

For use in pits, with long bearing and patent water-sealed gland.

WRITE FOR CATALOGUE No 15 which contains all the information necessary to estimate cost of Complete Pumping Plants—using Steam or Gas Engines, Horse Power or Water Power—and cost of operating same per acre or per horse power per hour, or

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BYRON JACKSON MACHINE WORKS

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ALEXANDER & HAMMON,

RIO BONITO NURSERIES, BIGGS, BUTTE CO., CAL.

Deciduous Fruit Trees Our Specialty.

THE MOST COMPLETE ASSORTMENT OF

GENERAL NURSERY STOCK GROWN ON THE PACIFIC COAST.

1,000,000 TREES FOR THE SEASON OF 1894-95 IN STOCK.

Acknowledged everywhere to be equal to the best. Guaranteed to be healthy and free from scale or other pests. Send for catalogue and prices. Correspondence solicited. Address

ALEXANDER & HAMMON,
BIGGS, BUTTE COUNTY, CALIFORNIA

PACIFIC RURAL PRESS!
Is the Largest Illustrated and Leading Agricultural and Horticultural Weekly of the West.
Established 1870. Trial Subscriptions, 50c for 12 weeks, or \$2.40 a year (bill further notice). DEWEY PUBLISHING CO., 220 Market Street, San Francisco.

LIGHTNING WELL MACHINERY Works.
All kinds of tools. Fortune for the driller by using our Adamantine process; can take a core. Perfectly Economical Artesian Pumping Rigs to work by Steam, Air, etc. Let us help you. THE AMERICAN WELL WORKS, Aurora, Ill.; Chicago, Ill.; Dallas, Tex.

The Situation as to Horse-Breeding

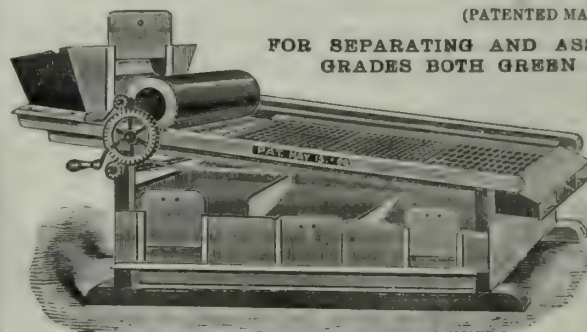
Before giving up the breeding of horses and declaring the business dead, will it not be well to take a candid practical view of the case, and before throwing away an advantage already gained, consider well what has brought on present conditions, whether the causes are likely to continue indefinitely, and if not, how best to take advantage of the change when it comes. Nearly every kind of business has had its boom and reaction during the last twenty years, and the horse business has been one of them. Its effect have been and are felt over a wider extent of country than almost any other business because it is so intimately connected with every other. Many breeders attribute the present condition of the horse market to over-production, and the introduction of electricity. The over-production has been entirely of the cheaper grades, and this class is what is being displaced by electricity. Electricity can never take the place of the heavy draft or fine coach horse. General business depression has had more to do with the fall in the horse market than anything else. Nearly every one is economizing and doing without or making the best of what they have. That this condition will last long no one believes. A renewed demand is among the certainties of the future. When this fresh demand comes there will be a short supply to meet it, because of the falling off in breeding for the past three years and the probable continuance of it for a year or two to come. Horses, as a rule, are short lived animals. The visible supply is being used up at a very rapid rate, and the fact that it takes five years to produce a horse ready for market is lost sight of by the croakers who are now and have been for three years crying the horse business down. Another fact is that the best time to engage in the production of any staple commodity is when it is down and not when it is booming. So many farmers have learned by sad experience that they cannot produce salable horses from ordinary stallions and have given up the attempt, that the chance for those who can and do raise first-class horses in the future will be greatly improved. Taking past experience and a candid view of the future of this country, it would seem that now is the right time for those farmers who are favorably situated to take hold of high-class horse breeding in earnest. They can now secure a choice selection of mares at moderate cost and buy first class stallions at "rock-bottom" prices. The latter can now be bought cheaper than they are likely to be again for years, for the reason that this year will about use up the stock of imported stallions on hand and good ones cannot be imported to sell at prevailing prices. Think on these things. Should not, under the circumstances, the owners of mares be more particular than ever in their choice of stallions and breed more judiciously than ever for the inevitable future market? The present conditions are simply the result of bursting boom bubbles. This country is not going to destruction; business is settling down to a sound basis, and a healthy reaction is sure to follow. A revival in general business will bring a quick and strong demand for horses, and the man who then has good ones can name his own price for them. The main point in breeding is the choice of a stallion, and care should be taken to buy only the best and from reputable importers.

There has been lately landed in San Francisco the finest lot of imported Percheron and French Coach stallions ever brought to the Pacific Coast. This stock ranges in age from two to six years, and was selected in France by the veteran importer, Leonard Johnson, who for many years was foreign buyer for M. W. Dunham, of Wayne, Ill. Mr. Johnson has personally selected and brought to this country over Two Thousand Horses, and is universally acknowledged to be the best judge of Draft Horses in America. Each animal in this lot is a good one, not only individually, but of the best possible breeding, as is attested by the certificates of registry in both the Percheron stud-books of France and America. A satisfactory guarantee given that each stallion will get sixty per cent of colts. This is a rare chance to get a first-class stallion, as no such stock as this has ever been offered for sale here at as low figures as this will be sold for. Time given on approved paper. STABLES—Close to Midwinter Fair, on Fifth avenue, opposite Race Track, next door to Scott & McCord's Feed Store, San Francisco, Cal. Take Geary street car. For further information and catalogues, address the Secretary of the American Percheron Horse Breeders' Association, S. D. THOMPSON, OCCIDENTAL HOTEL, SAN FRANCISCO.

HAMILTON FRUIT GRADER.

(PATENTED MAY 13, 1890.)

FOR SEPARATING AND ASSORTING IN DIFFERENT GRADES BOTH GREEN AND DRIED FRUITS.



It is Simple, Durable and Efficient.

It has become the Leading Fruit Grader of California. Col. Hersey has ordered three of these Fruit Graders this season. Send for catalogue and testimonials.

—A VARIETY OF—

Fruit Cars, Transfer Cars, Turntables and Dipping Baskets Always on Hand.

MANUFACTURED AND FOR SALE BY

W. C. HAMILTON,
SAN JOSE, - - - - - CAL.

PACIFIC RURAL PRESS

Vol. XLVII. No. 21.

SAN FRANCISCO, SATURDAY, MAY 26, 1894.

TWENTY-FOURTH YEAR.
Office, 220 Market Street.

From Mountains to Seaside.

The advent of the outing season invites reference to popular California recreation grounds. One direction of our progress during the last decade can certainly be seen in the elevation of our outing facilities. It is true that the peerless air and scenery of California are beyond improvement, and those who choose to go direct to nature's heart, with as little as possible of the impediments of civilization, can easily find aspects and environment as wild as delighted the pioneers of the forties. On the other hand, those who prefer to view nature through the vista of creature comforts as perfect as refined experience can demand, may now find on mountain side or ocean beach elegant entertainment and domicile, of which earlier Californians did not dream.

Our engravings on this page enforce this view of California's progress in the arts of recreation. We have first a fine view of the hostelry in the Shasta region which has become so well known during the last few years under the name of "The Tavern of Castle Crag." It is located near the base of the picturesque uplifts whose name it bears, and is on the bank of the Sacramento river 320 miles from San Francisco. It is very near to Soda Springs, whose medicinal virtues are of honorable repute. As the picture shows, the tavern is built in the low, cosy colonial style, two main stories and a third with dormer windows; heavy, overhanging eaves and ample verandas all around. Its capacity was increased last year, so that now it can comfortably accommodate 360 guests. Being in the Shasta



THE TAVERN OF CASTLE CRAGS IN THE SHASTA REGION OF CALIFORNIA.

region it is, of course, surrounded with all that the one who desires to communicate with nature in her visible forms can ask. Hunting, fishing, tramping, riding or simply resting are all fully provided for.

Turning from this gem of the interior we look upon the most famous resort of the immediate coast, known as Pacific Grove, near the old town of Monterey, and now connected with all the world by railway. Nearly all know

Pacific Grove by sight, but even those who have seen it only through the engravings which have from time to time appeared in the RURAL, cannot fail to note the great improvements advancing years have brought to this old favorite among our pleasure grounds. Early pictures only showed a few cosy cabins amid the grand pines and beside the sounding sea; now the hotel, assembly hall and other places of public resort are on a grand scale, and the avenues of cottages and gardens show that the all-the-year-round character which was early claimed for the site was a prophetic vision on the part of the projectors.

And these two outing establishments are only an exponent of our outfit of resort resources. There are scores of places which their thousands of patrons would advocate as fully as commendable and delightful. We count it a credit to the State to have such good resting places. To rest well is a human virtue perhaps only less honorable than to work well.

McFARLIN BROTHERS of Empire City, Or., have made a success of cranberry culture. They have about 30 acres of cranberry bog, and the annual product is from 300 to 400 boxes of berries. The boxes hold about one bushel each.



PACIFIC GROVE

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Our latest forms go to press Wednesday evening.

ANY subscriber sending an inquiry on any subject to the RURAL PRESS, with a postage stamp, will receive a reply, either through the columns of the paper or by personal letter. The answer will be given as promptly as practicable.

ALFRED HOLMAN.....Editor
E. J. WICKSON.....Special Contributor

San Francisco, May 26, 1894.

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The Week.

The showers and cool, cloudy weather have continued their important work of developing a crop out of plants which it was thought would not pass the hay limit. Over a great area of the northern half of the State there promises to be a fair yield of grain and hay. At the south, outside of irrigated areas, it will be almost a year of rest.

Fruit is coming on well and will form an immense aggregate in weight and value. At the East they have had another snow and frost area covering several States and doing considerable harm to crops of all kinds, including fruits. The Eastern call on Pacific coast orchards and vineyards will surely be much larger than ever before.

IN SPITE of the demoralized condition of the markets during the greater part of the selling season of 1893, prune-growers got fairly good prices, especially in organized districts. By reference to an extract from the Bulletin of the State Fruit Exchange, printed on another page, it will be seen that the average price for prunes sold through the Santa Clara Exchange was about 4½ cents for the four sizes. The Campbell Fruit Union did even better still, getting an average of 4.3 cents for ungraded prunes in the bin and 5 cents for graded and sacked. An industry which brings such returns in a season of universal depression is one that it will do to tie to.

THERE was a well-attended meeting of dairymen in San Luis Obispo on Tuesday in which that and Santa Barbara counties were represented. A permanent local organization was effected and delegates chosen to the State Convention to be held in this city next September. It was declared as the sense of the meeting that wages paid in California for dairy labor are double those paid in the East, and as Eastern dairy products are in competition with ours, it would be necessary to reduce such wages here.

THE directors of the State Dairymen's Association met in this city last week, and discussed the establishment of a dairy school. The meeting was addressed by Prof. I. P. Roberts of Cornell University and Prof. E. W. Hilgard of the State University. Prof. Hilgard promised the aid of the staff of the College of Agriculture in instruction if the school was not too far distant from the University.

Can We Grow Rice Profitably?

We have had several inquiries of late about rice-growing. Naturally, a cereal which is worth in the market several times as much per pound as wheat or barley excites the interest of those who despair of profit in those staple crops, because of the era of low prices which is world-wide.

Rice-growing has been frequently urged for California lowlands, but has never strongly commended itself to farmers because they could not see their way clear to compete with such labor as is used in the rice swamps of Asia or of the Carolinas. Probably the traditional unhealthfulness of the industry when pursued by the submergence method has made it distasteful to our farmers, and thus added prejudice to the economic uncertainties of the business. Certainly we do not see much prospect for rice-growing here by old-style methods. Aside from the vast amount of disagreeable hand labor which it requires, it also calls for engineering and construction which are certainly difficult and in some cases dangerous to the reclamation which has cost vast money. This last remark of course refers to the growth of rice by submergence on reclaimed tule and marsh lands. On other lands, even where there is abundance of water available for flooding, there is seldom an impervious stratum near enough to the surface to hold the water, and any attempt at submergence would not only waste a great amount of water which could be profitably used in other crops, but would eventually so fill lower levels with water as to endanger their value.

A method of rice-growing which is now apparently yielding satisfactory results in Louisiana, and perhaps elsewhere also, does away with submergence and proceeds upon the plan of keeping the soil simply well wetted during the growing season. The condition is, of course, beyond what is considered desirable in the irrigation of other crops. The soil is wet—saturated with water—muddy, if you like. This condition is secured by continual admission of water to balance evaporation or drainage. This of course requires less water than submergence, and the loss of water by percolation is less. If care is had in application, the soil can be kept at the point of saturation without very great waste of water, provided the soil is retentive and the subsoil as tight as it should be. It would be idle to attempt it on loose, leachy soil, for obvious reasons.

Now on this later scheme of treating rice fields it seems much more likely that California may find the industry feasible and profitable, and fortunately an experiment now in progress in this State, under direction of the U. S. Department of Agriculture, may yield some valuable information if the experiment meets with no mishap. There was planted on the Government tract on Union Island last week about half an acre of rice, the seed of some fine large variety having been sent from Washington for the purpose. For the rice a lower part of the tract was chosen than that on which sugar cane was planted in March, as described at the time in the RURAL. The piece last week was quite moist from seepage through the levee which adjoins it, and as the water rises in the river, as may be expected, this seepage will be maintained so that the soil may be expected to be kept saturated for the next two months, perhaps. If this seepage water should not be adequate, water will be admitted through a floodgate in the levee to ditches which will surround and intersect the rice field, and thus saturation of the soil may be continued as long as desirable. As soon as this water is shut off, the water will escape by evaporation, so it seems assured that the soil will dry out so as to allow easy harvesting of the crop in the fall. So far as can be foreseen, the conditions in this part of the tule region seem very favorable for this plan of rice growing. The soil is a mixture of sediment and peat, and about two feet depth of this overlies a heavy black adobe subsoil. The soil, as stated, is wet during the summer—too wet for ordinary crops, and when the river falls it begins to dry out until it becomes firm enough for harvesting operations. If these conditions are shown to be propitious for the rice crop, vast areas of reclaimed tule open to seepage and of river bottom generally can be used for rice growing upon a more economical method of culture than any employed in production by submergence. By sowing in May, before the soil becomes too wet by the rise of the river, and after the danger of frost is over, it may be found quite feasible to put in the seed with ordinary seeding machinery. The best summer treatment for killing weeds, to take place of the killing by submergence, must be demonstrated by experience. If this is successfully overcome, the harvesting from the firm dry ground may be possible by machinery which would be unavailable on fields dyked and checked for submergence. We consider the experiment one of the most interesting and significant ever undertaken in California.

From an Independent Standpoint.

The men who have been making trouble in Vaca and Pleasant valleys are not genuine workmen but a mob of habitual triflers who would not or could not, if they were given the chance, take the places of the Chinese and Japanese they are trying to drive out of the country. Time and time again, at Vacaville and elsewhere, the fruit-growers have given these men, and others like them, preference over their Chinese laborers, but with uniformly bad consequences. They usually do very well for a few days, but in the active fruiting season, when it is necessary for every man to be at his post to save the crop they get drunk, or grow careless, or abandon their work, and those who employ them suffer vexation, delay and oftentimes serious loss. It is not surprising that fruit-growers prefer Chinamen, who take pains to learn the business of picking and packing, who are proverbially careful in the handling of fruit and who may be depended upon for sobriety and for fidelity to their engagements, over white men who are unskilled, indifferent, drunken, and prone to throw up their work just at the time their services are most needed. There is not a grower in Vaca or Pleasant valleys who will not give a skillful, careful and reliable white man or woman a chance to work in preference to a Chinaman; but they draw the line at tramps and shirks and drunkards, and nobody with sense, who understands the situation, blames them.

It is due to the fruit-growers of California who have been blamed for "fostering" the yellow man at the expense of the white man, that it be said plainly that the tramps who go about the country crying that they have been crowded out by Chinese cheap labor, are persons whom it is not profitable to employ at any price. They are slovenly and indifferent in their work, vicious and beastly in their personal habits and shamefully unreliable at critical times.

The fruit business calls for special qualities in those who engage in it. They are cleanliness, industry, fidelity to detail and to contracts; and whatever kind of labor best answers these requirements will get the work to do. White men and women, properly qualified, will always be preferred; but any fruit-grower will hire an efficient Chinaman rather than an inefficient white man, and he would be a fool to do otherwise.

Two or three weeks ago George Decker, a well-to-do farmer of Shasta county, was arrested upon a series of monstrous charges. It was alleged that twenty-five years ago he murdered in cold blood his first wife and their infant daughter; that later he choked a grandchild to death; that he spirited away a step-grandchild who stood between him and his second wife's fortune; that he poisoned his second wife—etc., etc., etc. The indictment was a long and frightful one and the whole case was, of course, "handled" by the sensational San Francisco press for all there was in it. The details of the charges and of the alleged proofs were written and pictured in such horrible shapes that public feeling in Yreka was wrought up to the fever pitch. There was serious talk of lynch law and it was only by calm counsels, supported by a promise of the grand jury to make quick work of the case, that poor Decker's neck was saved. And now comes the other side of the story: The first wife and daughter supposed to have been murdered have been found in Colusa county and the former bears witness to Decker's good treatment of her; the stepchild said to have been spirited away is found to be in a good school, where Decker regularly pays the bills; the story about poisoning the second wife hangs upon the fact that during her last illness he brought her some fruit from home. In brief, the whole fabric of sensation has crumbled to nothing; and those who a week ago were crying out for Decker's blood are now giving him warm congratulations. The case is chiefly significant in its relationship to two monstrous evils, the sensational press and the infamous spirit of lynch law. Our readers will be able to make their own reflections.

The persistent courage and hopefulness of the Prohibitionists teaches the profound truth that political vitality rests less upon theories or upon organization than upon conviction and moral purpose. Political parties founded upon special interests, upon fads and upon alarms have been many in this country; they have blossomed gaily in the sunshine of special opportunity and the first hard frost of defeat has killed them. But it is not so with Prohibitionism. It tries and fails—and tries again. Defeat does not destroy it because there is back of it conviction and moral purpose and high resolution born of these qualities. Even those of us who cannot sympathize either with its philosophy or its plans must respect the character which is its foundation and the spirit which is its unfaltering support. The prohibition party will, as usual, be represented in the coming cam-

paign. Its State convention, held at Oakland last week, attracted the attendance of about 100 delegates and named the following list of candidates: For Governor, Henry French of Santa Clara; for Lieut. Governor, M. J. Hall of Los Angeles; for Secretary of State, M. C. Winchester of Yolo; for Controller, H. Clay Needham of Los Angeles; for Treasurer, W. H. McGowan of Sonoma; for Attorney-General, C. P. Dorland of Los Angeles; for Sup't of Public Instruction, B. F. Burns of Placer; for Clerk of the Supreme Court, W. P. Netherton of Santa Cruz; for State Printer, A. G. Sheehan of Redlands; for Surveyor-General, Green Spurrier of Redlands. Nominations were also made for the various elective commissions, and Gen Bidwell of Chico was nominated for U. S. Senator. The platform includes the usual claims of prohibition and woman suffrage, recommends that all money be issued by the Government directly to the people; declares for free coinage of silver; calls for a graduated land tax with limitation of the acreage to be held by any one person; favors Government ownership of railroads, telegraphs and telephones; recommends industrial training in the public schools; objects to any division of public funds to sectarian schools; recommends the limitation of immigration, etc., etc. In the matter of the tariff, it is recommended that the subject be referred to a non-partisan commission.

There is much in this platform which progressive people generally, who may or may not sympathize with Prohibition, can commend. It is undeniable that the sentiment for nationalization of railroads is growing rapidly; it is equally true that there is an increasing sentiment for reform in our tax system. Both of these propositions will find much favor; but the proposition to settle the tariff question upon non-partisan lines and under non-partisan auspices is far more timely and important. Thoughtful people have about lost hope of any satisfactory adjustment of this great question without the intervention of some influence in which "politics" is not the paramount consideration. Left to the chances of legislation under the party system, it seems inevitable that it should be see-sawed, now to one extreme, like the McKinley law, now to another, like the projected Wilson law. The country wants neither one nor the other; it wants an adjustment upon lines which will accomplish the two good purposes of giving the Government an income and at the same time yield a maximum advantage to American industry and self-helpfulness. And above all, the country wants a settlement of the matter. It is a case where uncertainty makes paralysis and where changes make injustice. The suggestion for a non-partisan commission is both rational in theory and practicable in plan; it is, indeed, the fairest proposition that has yet come from any source.

As the RURAL goes to press Wednesday evening the Populist State Convention is in the second day of its session at Sacramento. There are about three hundred delegates in attendance. There are three candidates for Governor—Fowler of Fresno, Webster of San Luis Obispo, and Gilbert of Fresno. Correspondents on the spot believe that Fowler stands the best chance, with Webster second. If Gilbert does not win he will be nominated for Congress. The convention it is thought will name Thos. V. Oator as its choice for United States Senator. The platform has not been adopted, but from speeches made before the convention it is inferred that it will repeat the demands of last year, denounce Cleveland and oppose the Pacific Railroad funding bill.

Mr. Fowler, the prospective candidate for Governor, is a scholarly man of middle age, a fruit-grower by occupation, and prominently identified with the co-operative movement in this State. He is a competent man of business and in no sense an extremist. Mr. Webster, his chief competitor, is a farmer of San Luis Obispo county and is widely known in connection with movements for political reform. He was a conspicuous member of the last constitutional convention. Mr. Webster is a radical of radicals, and a reformer of the honest, forcible, combatant sort. Next week we shall be able to give definitely the results of the convention, and shall review the facts and conditions which promise to give force to the Populist cause in the coming election.

DR. H. W. WILEY, chief of the division of chemistry of the Department of Agriculture, is expected to arrive in California at the close of this week to inspect the work done thus far at the Union Island station under his direction. Dr. Wiley visited California about ten years ago, and at that time in his reports predicted the advance of our State in beet-sugar production which has been since attained. Dr. Wiley has always been a firm advocate of home-grown sugar, and has made most valuable contributions toward the realization of his belief by his researches and experiments. His visit at the present time will be welcomed by all in the sugar interest, and by others who have been helped and profited by the work of his division.

Crops and Markets.

We quote the following from Bulletin No. 5 of the State Fruit Exchange, dated May 23d.

Crop Report.

Apples.—Usually reported good crop.
Apricots.—Reported as heavy crop, except where injured by frost on low ground. We are not yet quite satisfied as to present appearance of the crop in the injured districts.
Cherries.—On the whole a light crop, although a few districts and occasional orchards yield well. Shipping, except Royal Anne, is about over in the early districts, and beginning in the later.
Grapes.—It is impossible, as yet, to judge of the probable crop of raisin or other grapes. They have been hurt by frost in some places, by cutworms in others, and some shipping varieties are not setting well.
Peaches.—All kinds are almost universally reported heavy.
Bartlett Pears.—Generally reported heavy. They are doubtless dropping, but probably no more than a proper thinning, if so much.
Late Pears.—Are also generally reported good, with some complaint of Winter Nells.
Plums.—Reported fair to good.
Prunes.—There is no question of the crop being light in all the important districts. Near the bay and coast and in some mountain districts the yield will be better—in some districts apparently excellent, but even in those there is a tendency to dropping.
Silver and German Prunes.—Spotted. In some districts good; in others fair, or poor.
Nectarines.—Reported excellent crop.
Almonds.—Reported fair to good.
Eastern Crops.—Estimates freely supplied us by the courtesy of the trade, reaffirm the prediction of a large apple crop, and very good berry crop.

Markets:—Fresh Fruits.

Cherries.—We are in receipt of a report of an auction sale of Cherries in Chicago held May 14th. Knight's Early Black sold at from \$1 to \$1.25 per box, averaging about \$1.15; Purple Guigne from 45 to 65 cents, averaging practically 60 cents. Their condition was not stated. Our correspondent states that a large proportion of the first solid car to arrive sold at another auction at from 50 to 60 cents.
Concerning the sale of May 14th, our correspondent writes that he followed the fruit to the sidewalks of the buyers and saw the Purple Guigne, which they bought in lots of 25 boxes, selling at from \$1.25 to \$1.75, in lots to suit—\$1.25 being the lowest price quoted. He does not state prices realized for Knight's Early. Some of this fruit was doubtless shipped to country customers, and we do not know the prices at which this was billed. We also do not know what loss, if any, occurred to buyers by reason of spoiled fruit. Our correspondent does not believe in the auction system, and cites the above as an illustration. Certainly a system which habitually gets for growers less than one-half its market value, as proved by sales of some fruit in open market, does not properly serve the grower, but it must not be forgotten that the auction system was introduced to displace a commission system which, as then practiced, had become extremely unpopular, and it is not wise to jump at conclusions in important matters without exact and abundant observations extending over sufficient periods to give a fair average. If the average profits of auction buyers should prove to be anything like that shown above, it ought to be possible to devise some practicable method by which the grower should get a greater share of what the consumer pays.
The above is perhaps, however, not a fair sample of prices received for cherries. A Vacaville correspondent reports the following as about the average received for a week's shipment:

Black Tartarian.....	\$1 75 to \$2 10
Purple Guigne.....	1 00 to 1 35
Belle de Orleans.....	1 20 to 1 30
Advance.....	1 10 to 1 25
Rockports.....	90 to 1 15

Some sales or offers for cherries in bulk are reported at prices ranging from 4 cents for Black to 6 cents for Royal Ann, presumably for shipment. In Placer county 65 cents per 10-pound box for "best varieties" is reported, packed.

Apricots and Peaches.—In the southern counties, where buyers are most active, the sales are largely of fruit on the tree, by the acre, and the prices paid range, as reported, from \$40 to \$400 per acre, which latter price ought to be reasonably satisfactory, whatever the buyer makes. There are not, probably, many such sales, which indicates an estimated yield of at least 18 tons to the acre, at the highest price per ton (\$30) reported as being offered in the same district for apricots delivered at drying grounds. Peaches in the same district have been sold for \$100 per acre. There are few reports this week of sales or offers of fruit by the ton for drying or canning. In Placer county \$1.50 per half crate for apricots is reported as the starting price. Shipments of apricots have begun from Vacaville. In Sutter county \$27.50 is offered for apricots.

Pears.—The most activity is reported from Sacramento county, where extensive purchases have been made at from 50 to 75 cents per box of 40 pounds to July 15th, and 50 to 60 cents for the season—buyers in all cases taking the fruit picked, and themselves packing and furnishing everything.

Plums.—Some sales of colored plums reported from same county at 50 cents per half crate of 20 pounds. Tragedys \$1.25. Packed by buyer.

Prunes.—Prunes are being rapidly bought in the southern counties by the acre, largely by Chinamen of course, the price per acre ranging from \$50 to \$150. No sales by the ton reported this week, except one from Santa Clara county at \$50 per ton, nearly all cash paid down, probably because the grower needed money and the buyer wished to establish a price. It is not likely that any large quantity of prunes could be bought in Santa Clara county at \$60. Throughout the northern part of the State there is little buying of fruit yet, growers' and buyers' views being entirely apart.

Dried Fruits.

Prunes are nominally worth 6 cents for equal quantities of the four sizes 60—100, in carload lots, but the market is dull, and owners of less than carload lots are unable to realize on that basis, or even at the one-half cent less, which is the legitimate profit of those who collect the small lots for shipment. The light crop in this State is now conceded, but there is uncertainty in the minds of buyers as to the amount of new acreage to come into bearing here, the condition of the European crop, and the shape the tariff will be in when Congress adjourns. The late rise has started considerable shipments from Europe, which did not trouble us, while California consigned Prunes were selling on the basis of 3½ to 4 cents f. o. b. coast. Stocks are very thoroughly cleaned up both here and at the East, but merchants are inclined to buy only from hand to mouth, awaiting future developments.

Prices of Prunes for Crop of 1893.

We last week gave the net price paid to growers, per green ton, by the Campbell Fruit Union, as \$34. At that time the

accounts had not been quite made up. They have since been completed, and the net returns found to be \$34.50, which, on the basis of a shrinkage in drying of 2½ to 1 is equivalent to about 4.3 cents for ungraded prunes in the bin or 5 cents graded and sacked.

The Santa Clara Fruit Exchange receives fruit from its stockholders, for sale upon either of three plans:

First—"Exchange option." This fruit is received and sold at the best judgment of the Exchange, and the entire net proceeds paid over, when the sale is made.

Second—"Owner's option." This fruit is received and sold at such rates as the owner may agree to, he either fixing a limit in his contract or instructing from time to time. In this case, also, the entire net proceeds are paid over when the sale is made.

Third—"Pool." This fruit is sold according to the best judgment of the Exchange, from time to time throughout the season. It is, of course, carefully graded, and each owner has a certificate showing how many pounds of each grade he has in the pool. Payments are made *pro rata*, from time to time, as sales are made and growers need money, but no final settlement is made until the entire pool is closed out, when all are paid the average price received for the season from the different grades of fruit.

The following are the prices on which settlement was made with those in the pool for this year; nearly all the prunes were in the pool:

Sizes—	Price.
40 to 50.....	6½ cents.
50 to 60.....	5½ "
60 to 70.....	5 "
70 to 80.....	4½ "
80 to 90.....	4 "
90 to 100.....	3½ "
100 and over.....	2½ "

These prices are equivalent to about 4½ cents to the four sizes, but the average paid exceeded that, because the product ran to large sizes.

They were subject to a commission of 5 per cent for selling, and to a charge of \$2 per ton for grading, sacking and warehousing, which last item included 6 per cent dividend on the capital stock of the Exchange, which is represented by the warehouse and land. Good sacks were charged for at 8 cents each. The actual cost of selling was about 4 per cent, including about \$1000 paid for gathering information and distributing it through a bulletin. The actual warehouse expense was about \$1.70 per ton, leaving a rebate of about 1 per cent and 30 cents a ton for those selling through the Exchange, which, however, was consumed by a loss made by the Exchange. It is expected that these expenses will be gradually reduced. The warehouse expenses were made up as follows:

Grading, per ton.....	\$0 60
Sacking, ".....	50
Warehousing (including interest on warehouse and land).....	60
Total.....	\$1 70

Thinning Fruit for Drying.

One of our Southern correspondents wrote last week as follows: "My impression is there will be a poor quality of peaches in this vicinity, for the reason that growers do not thin their fruit. A great many of our apricot trees are entirely too full." Which of our readers can pick out the district referred to as his own? The BULLETIN deals with marketing fruit, not with raising it, but we may as well say that unthinned fruit from overloaded trees cannot be marketed to yield a profit to the owner. Besides it is a terrible drain on the vitality of the trees to mature such a multitude of pits. The fewer pits the tree matures the more regularly it will bear. Take a horticultural journal and study these things up. Book farmers do know some things.

Crop Condition and Outlook.

Reports of the Recent Rains.

Following is a synopsis of the crop bulletin for the past week issued by Director Barwick, of the State Weather Service:

The average temperature during the week ending May 21st was: For San Francisco, 55°; Eureka, 51°; Red Bluff, 62°; Sacramento, 58°; Fresno, 62°; Los Angeles, 58°, and San Diego, 58°. As compared with the normal temperature there was a deficiency of heat over the entire State, it being deficient 3° at San Francisco and Eureka, 7° at Red Bluff and Sacramento, 6° at Fresno and Los Angeles, and 4° at San Diego. The rainfall was in excess over the normal weekly precipitation for the whole State. This excess in moisture and deficiency in heat has been beneficial to beets, beans, corn, melons, etc., and has helped somewhat very late-sown grain, but large quantities were too far gone to be benefited by the more favorable weather. The rain of Monday the 21st has no doubt injured to some extent new-mown hay that was left in the fields uncocked, and has also injured cherries and strawberries and has retarded the growth and maturing of all early fruits.

The severe frosts of the week, principally the one on the 16th, did some damage to beans, corn, and vineyards in Sonoma and Mendocino counties, but nothing like the damage reported the day following the frost. What was injured were those on lowlands and swales of the vineyards and fields of tender growth.

Take it altogether the week's weather has been more beneficial than otherwise, although not the kind of weather that is usual for this season of the year. Frosts were noted much later than usual; the latest frost reported in the last 20 years was May 7th, while frosts this season are reported as late as the 17th.

Highest temperature 90° at Tulare, Huron and Yreka; lowest temperature 30° at Tehachapi and Yreka.

LASSEN (Susanville).—The last few days have been hard on fruits, with rain, hail, sleet and snow and a temperature of 27°, killing everything in the gardens and damaging alfalfa. Grain is looking well. Highest and lowest temperatures, 74 and 40, with .45 of an inch of rain.

SISKIYOU (Ager).—Prospects are good for a splendid crop, the rain coming just when needed, which amounted to 1.86 inches. Highest and lowest temperatures, 80 and 32. (Yreka).—Rains were of great benefit. More rain will yet be needed to insure an average crop. Fruit prospects very unpromising. Rainfall, 1.68 inches. Highest and lowest temperatures, 90 and 30.

SHASTA (Anderson).—Crops improved very much by the rain. Fruit crop good and well advanced for the season. Haying will commence in another week. Rainfall, .60 of an inch. Highest and lowest temperatures, 78 and 46.

HUMBOLDT (Eureka).—The rains were favorable to feed, fruits and grain. The season is deficient in heat. Crops not advancing as rapidly as they should for that reason. Wheat, oats and barley are

backward in growth. (Hydesville).—The rain and the weather very beneficial to crops. Rainfall, .74 of an inch. Highest and lowest temperatures, 66 and 36.

LAKE (Upper Lake).—Hot weather about the 10th caused everything to grow rapidly. The rains were beneficial; but being followed by strong and cold northerly winds about counteracted all the good. There was a fairly heavy frost on the 16th in the valleys and low places. Fruits of all kinds promise to be very good, but hay and grain will be a short crop excepting alfalfa. Corn being planted and hops doing well. Rainfall, .12 of an inch. Highest and lowest temperatures, 84 and 34.

TEHAMA (Red Bluff).—The rains damaged hay that was down, otherwise the moisture was of great benefit. Prune crop will be small. Other fruits doing well. Summer-fallowed grain looking well. Rainfall, .80 of an inch. Highest and lowest temperatures, 82 and 43.

BUTTE (Chico).—Rains have greatly improved crop prospects. Cherry crop promises well, as do all other fruits, and the outlook is good for a large yield. (Palermo).—The rains wet considerable hay. The rain will benefit the maturing grain very much, as well as growing fruit. Rainfall, 1.58 inches. Highest and lowest temperatures, 91 and 40.

SUTTER (West Butte).—Rain beneficial to crops except early barley. Alfalfa and barley hay has been cut and lies in the field, and will be somewhat damaged. Rainfall, 1.23 inches. Highest and lowest temperatures, 74 and 42. (Yuba City).—The rain, though late in coming, will do great good to late-sown grain and help all of it in maturing. With cool weather, a fair output will be the result in this county. Some hay was damaged. Feed in the pastures was benefited. Orchards and vineyards can be cultivated to a better advantage and the extra moisture will insure the maturing of late varieties.

YUBA (Wheatland).—The recent rains and cloudy weather have greatly benefited grain. The hay that was cut was but slightly damaged. The north winds are supposed to have damaged the hop crop, but it is too early to make a safe prediction. Fruit doing well; a good crop of all kinds is expected. Rainfall, .98 of an inch. Highest and lowest temperatures, 82 and 39.

PLACER (Newcastle).—Rain did some damage to cherries and berries; fruit crop benefited by the rain, which amounted to 1.24 inches. Highest and lowest temperatures, 78 and 37.

EL DORADO (Georgetown).—The rain was quite a heavy one and greatly helped out the late-sown grain. The frost of the 16th nipped in some places tomatoes, corn, etc., but only slightly; fruit uninjured. Rainfall, 3.34 inches. Highest and lowest temperatures, 72 and 33.

SACRAMENTO (Walnut Grove).—Rain of great benefit to crops in general. There was some damage to hay. Frost of the 15th did considerable damage to beans in some places; fruit not injured, and cherry picking in full blast. Highest and lowest temperatures, 74 and 48.

SOLANO (Vacaville).—Peaches and apricots doing well and will yield a fine crop. Pears, prunes and plums only a fair crop. Grape vines show the effects of the frost of the 16th, although no serious damage was done. (Denverton).—Weather continues cool, with .87 of an inch of rain, which was extremely beneficial to crops.

MENDOCINO (Covelo).—Crops are looking well and a good yield will be harvested without more rain. Haying just began. The fruit prospect is good. Rainfall, .31 of an inch. (Ukiah).—Rains and calm weather very beneficial to all crops. The frost of the 16th did but little damage, the early vegetable gardens suffering most. Rainfall, .87 of an inch. Highest and lowest temperatures, 80 and 32 deg.

SONOMA (Forestville).—The hay crop will be a fair one. The killing frost of the 16th nipped potatoes, grapes, etc., to a considerable extent. Corn is doing well. In Green valley the frost injured the blackberry crop. Highest and lowest temperatures, 78 and 34 deg. (Cloverdale).—Rainfall, .63 of an inch; helps grain in filling out. The frost of the 16th did but slight damage in this vicinity, but reports from some portions of this county show considerable damage to the grape vines. Highest and lowest temperatures, 78 and 40 deg. (Petaluma).—The prospects for hay are much better than was thought possible a few weeks ago. In some places an average crop will be harvested, while in other portions of the county there will be a fair yield. (Healdsburg).—A heavy frost on the 16th did considerable damage in this vicinity to vegetable gardens and to the vineyards. (Santa Rosa).—The reported damage to crops by frost in this vicinity has been greatly exaggerated. Fruit not hurt, and only such tender vines as tomatoes and potatoes and grape vines in low places were affected. The damage as a totality is entirely inappreciable. The prune crop will be light. All other fruits except pears will be fully up to the average.

ALAMEDA (Pleasanton).—Tomato, cucumber and beet crops are growing vigorously. The rain was generally beneficial and has started the late-sown seed. Hay cut not damaged to any great extent. Rainfall, .96 of an inch. Highest and lowest temperatures, 80 and 32 deg. (Niles).—Rain beneficial to late grain. Many fields will now make good barley that were doubtful before. The prospects for hay in the Livermore valley, although light, is good. Rain too late to do any good to pastures. The frost of the 16th did no harm in this vicinity. Peaches generally have set well. Some beet seed will have to be replanted. Rainfall, 1.14 inches. Corn looks well. There is continued complaint of light prune crop. Cherries in places are very light. Highest and lowest temperatures, 83 and 50 deg.

SANTA CLARA (San Jose).—Rainfall, .77 of an inch, has still further improved the crop prospect, especially fruits and vegetables. Frost on the 16th, but no harm resulted. Highest and lowest temperatures, 78 and 32 deg. (Santa Clara).—Many of the wheat and barley fields in this section will give very heavy returns, while the hay crop in the valley will be sufficient for home consumption.

SAN BENITO (San Juan).—All were delighted with the rain, there having been over an inch, which insures good crops where there was little hope of any a week ago.

SAN JOAQUIN (Acampo).—The rains and cool weather have helped grain greatly, particularly that sown late. Haying just commenced. The fruit crop will be large. The rain has been a great benefit to the fruit. Cherry shipments going forward daily. (Beitany).—Rainfall, .43 of an inch, while it did some good to late sown grain, it did more harm to hay. Highest and lowest temperatures, 77 and 45 deg.

(Lodi).—The rains have greatly improved the condition of wheat. Fields of late grain that were looked upon as almost worthless will now make a good half crop. The yield of all grain will be doubled. The damage to hay was not great, as the area cut was not large. Strawberries slightly damaged. All other fruits doing well. Rainfall, 1.19 inches. Highest and lowest temperatures, 79 and 39 deg.

MERCED (Los Banos).—Rainfall one inch, which has damaged but very little hay. To grain under irrigation it was a benefit, but outside the grain was already dead. No damage to fruit.

FRESNO (Huron).—There will be some wheat harvested in the Summit lake district, where it was reported several weeks ago that very little if any would be saved. Highest and lowest temperatures, 90 and 40 deg. (Fowler).—The heavy showers the fore part of the week were of great benefit to a few fields of late-sown grain, but most of it was beyond help. With the exception of a very few cases, the vineyards are recovering from the ravages of the cutworms.

MADERA (Madera).—Rainfall on the 14th, varying from a half-inch in the valley to two inches in the foothills, helped grain to fill. Much grain was down and some damage done. Vineyards and orchards will have to be cultivated again by reason of the rain. Fruit prospects continue good. Grapes greatly injured by cutworms, and the crop will be somewhat short on that account.

KINGS (Hanford).—Rainfall, .13 of an inch. Highest and lowest temperatures, 86 and 54 deg.

TULARE (Tulare).—Rainfall, .17 of an inch. Haying begun. Most of the grain will be cut for hay. Light frost on the 16th, but no damage done. Peaches good. Grape crop good, except raisin grapes, which will be short. Highest and lowest temperatures, 90 and 36 deg. (Visalia).—The rain damaged some hay, but benefited other crops. All fruit looking exceedingly well. Rainfall, .34 of an inch. Highest and lowest temperatures, 84 and 39 deg.

KERN (Tehachapi).—Rain of Monday morning and the snow of

the evening of the 14th were of great benefit, and with reasonably fair weather in the future good fair crops will be assured. The frosts of the 15th and 16th did no serious damage in this section. Rainfall, .35 of an inch. Highest and lowest temperatures, 75 and 30 deg.

SAN LUIS OBISPO (San Luis Obispo).—Cool weather and high winds with an inch of rain greatly benefited the grain crop and the pastures. All kinds of fruit doing well. Grape crop promises well. Dairymen not overstocked are doing fairly well, considering the dry season. Highest temperature, 68 deg.

AMADOR (Oleta).—The heavy frost of the 16th did but little damage. A few beans were nipped, but nothing else was touched. The rain helped feed by keeping it green and fresh. Rainfall, 1.82 inches. Highest and lowest temperatures, 73 and 40.

SANTA BARBARA (Santa Maria).—From $\frac{1}{2}$ to $1\frac{1}{2}$ inches rain fell on Monday in different parts of the valley, reviving late grain, but too late to benefit the bulk of the grain and hay crops. Rain very beneficial to orchard and summer-crop land. Haying begun. Crops light as far as cut. Temperatures generally favorable for beans, corn and summer crops. Highest and lowest temperatures, 70 and 45 deg.

VENTURA (Santa Paula).—Rainfall, .45 of an inch here and about two inches reported in the upper Ojai valley. Weather cool, without any drying winds. Fruit trees in good condition to date. Highest and lowest temperatures, 74 and 37 deg. (Hueneme).—Rainfall, .29 of an inch, did no material good, for in some places it lodged the good grain, but will improve the ground for beans and corn, although in several places the beans had to be replanted.

LOS ANGELES (Neenach).—Cool weather, southerly winds with .55 of an inch of rain have greatly helped crops. Grain ought to fill well and the tonnage of hay be materially increased. Highest and lowest temperatures, 84 and 39 deg. (Los Angeles).—The rain on the 14th was quite heavy near the mountains and light in the coast districts. It came too late to help grain to any great extent, and slightly damaged new-mown hay. Beans and corn were much benefited. Highest and lowest temperatures, 80 and 46 deg. (Cologrove).—Nineteen hundredths of an inch of rain early in the week was of some benefit to beans, corn, melons, etc., but not enough to injure the hay, which was mostly in the stack. The hay crop is about one-half the average crop, but is thought to be a good crop for a dry year.

SAN BERNARDINO (Chino).—Rainfall .21 of an inch, followed by pleasant growing weather. Never since beet farming commenced has the crop looked as fine, as healthy and as promising as to-day. Highest and lowest temperatures, 83 and 49 deg. (Redlands).—The rain, though unseasonable for hay and grain, possibly doing some damage to those crops, was sufficient to start grass and will prove of benefit to stock farmers. Strawberries were somewhat injured by the rain. The early apricot season will open about the 25th; this followed by the apricot drying season; then the peach season will open, and from this on to the next orange season the time will be devoted to the raisin crop.

RIVERSIDE (Arlington Heights).—Rainfall .40 of an inch, which was too late to do any good. The crops have been lost for some time and rain would be of no benefit to this section of the country. The citrus fruits continue to make vigorous growth. Highest and lowest temperatures, 86 and 42 deg.

SAN DIEGO (Esmeralda).—Rainfall .25 of an inch, making for the season 8.79 inches. It came too late to benefit hay and grain, but will do good to orchards. (San Diego).—Rainfall .08 of an inch. Hay cutting in full blast in most places and crops turning out fairly well in some places, while in others it is very poor. Fruit crop promises to be an immense one; none has fallen so far, but much of it will have to be picked off or thinned—some say about one peach or apricot to about eight inches of limb, as this is all that will mature well with the small amount of precipitation. Oranges nearly all gone; lemons plentiful. Highest and lowest temperatures, 72 and 45 deg.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, May 23, 1894, are from official sources, and are furnished by the U. S. Weather Bureau expressly for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total rainfall for the week.....	Total seasonal rainfall to date.....	Total seasonal rainfall last year to same date.....	Average seasonal rainfall to date.....	Maximum temperature for the week.....	Minimum temperature for the week.....
Yuma.....	2.16	1.65	3.16	98	68	
San Diego.....	4.98	9.46	9.71	72	48	
Los Angeles.....	6.63	26.25	18.14	80	48	
Fresno.....	7.21	11.10	9.83	84	48	
Sacramento.....	.40	14.93	23.95	18.63	78	50
San Francisco.....	.12	17.01	21.72	24.24	72	44
Red Bluff.....	.06	20.48	32.32	28.12	86	50
Eureka.....	.12	62.72	48.76	44.48	62	44

PROF. C. V. RILEY, who has had such a long and honorable career, formerly as entomologist for the State of Missouri and, during the last 15 years, for the U. S. Department of Agriculture, has found it necessary to resign his official place. About 30 years of unremitting labor in a specialty which has secured for him the foremost place in the world in his line have severely taxed his physical strength. The report went forth that his resignation was requested, and this fact has added to the pain of severing relations so long maintained, but Prof. Riley has said over his own signature that his resignation had been contemplated for some time, and "was taken without suggestion from or consultation with the Secretary of Agriculture, or any one else." We are sorry that it was necessary to make such a declaration, but we desire to give it as wide circulation as possible in California. Prof. Riley has been very generous to the State in the amount of official attention he has given to our interests, and our people will hope that he may have still a long life of distinguished service in the U. S. National Museum, of which he has been for a long time an honorary curator.

THE State Board of Trade has adopted a plan for listing lands for sale in the various counties affiliated with that organization. The entries must be indorsed by the local organizations forwarding them, but the State Board will give no guarantee of the correctness of such statements. It

will make no charge for its agency in the matter, either to the purchaser or the seller. The object of the Board is merely to supply information to newcomers and home-seekers.

Crop Prospects in the Sacramento Valley.

TO THE EDITOR:—In the absence of more interesting topics, I thought a few words on weather and crops might be considered a timely subject just now. You will remember that a few weeks ago I had occasion to refer to the subject and draw comparisons between dry seasons of the past and also with the present. I wrote then as the furious northerners were disturbing our customary equilibrium and threatened to laden the air with the odor of new-mown hay standing uncut in the fields. We found several seasons like the present, with even less rain; if less north winds they were hotter and more dessicating; and yet with favorable May weather the careful farmer always gathered a good crop, and, since in such seasons prices were high, the farmer's income equaled if it did not excel the years of universal plenty.

Seldom has the month of April given us more unfavorable and discouraging weather, yet we were not without hope. The grain had not turned to hay yet, and many looked to May for a change and relief. Well, the change has come. Just enough rain has fallen and not too much and the dry north winds have given way to cool southern sea breezes, and more or less clouds have appeared to obstruct the sun's rays. Two weeks of this May weather has wrought a wonderful change for the better. Grain not expected to be worth harvesting will now make a fair crop. Many late-sown fields of both wheat and barley promise 20 to 25 bushels to the acre, and fallow-sown grain is universally good and will make from 20 to 30 bushels to the acre.

Then this cool weather is particularly favorable for the production of well-filled heads and kernels, which, from a close inspection, seem never to have been excelled. It is a noted fact that an overproduction of straw is not usually favorable to good filling of heavy grain, while short straw is accompanied nearly always by good, clean and heavy grain.

The hay crop is fair on the low lands, light on volunteer uplands, but the needed supply will be cut from the wheat fields, which, being fair, there will be no feed famine in barley or hay.

Crop speculations being ended, the next guess will be as to values. All former years of drouth and short crops were followed by good to high prices, but now, as we approach the harvest, values are declining, with no prospect in sight for a return to even paying prices. It is still true that the darkest hour comes just before day, and it does seem that the darkest hour is near at hand for the California wheat-grower. Once this idea takes possession of the dealers in breadstuffs, all will want a block on which to ride to affluence. This may not come very soon, but is as certain to come as day follows night or sunshine after storm. It is being discovered that the low values prevailing are not due so much to overproduction as to the cheapness of production, a circumstance that inures more to the advantage of the consumer than the producer. It is thought the commodity might just as well be handled at a higher range as not, to the infinite advantage of both producer and consumer. These thoughts lead to deep water, and as breakers are appearing in the distance, I will retreat to safer depths; and yet I often feel inclined to pursue this subject a little farther in order to discover, if I can, what lies beyond the "breakers."

The fruit crop is simply immense, and all growers are wearing happy smiles. The rain was certainly all benefit and no injury. The rain also softened the soil and permitted the last touches of cultivation to bring the surface into excellent shape.

Sutter county is receiving now greater attention than ever as a fruit growing county. Buyers' agents from the East may be seen almost daily traversing the county and viewing the orchards and the fruits on the trees in connection with the Eastern failures and the coming market. All express themselves as delighted with the sights, and many pronounce the locality as the best peach belt of the State, if not of the Union.

GEORGE OHLEYER.

Yuba City, May 21, 1894.

THE Dairymen's Union of California has taken advantage of the opportunity presented by the Midwinter Fair to have the most prominent creameries, dairies and cheese factories unite in making a novel and interesting exhibit in the Horticulture and Agriculture building. This is the only exhibit of dairy products in the building. The entrance to the booth is through an arch made of cheese packages, and within the inclosure is an extensive assortment of boxes of creamery and dairy butter. The boxes are fitted with glass covers, and each has a pretty satin banner bearing the name of the creamery or dairy and the county where produced.

AS A RESULT of negotiations held in Paris between Standard Oil representatives and those of Russian interests, a territorial division has been made, which is said to consist of a line drawn north and south through Europe in a somewhat irregular manner. The Standard, it is said, is to control the trade of the British Islands, France and most of the western portions of Europe, including a part of the German Empire. The Russian companies have gained rapidly for several years in China, India and Japan and are now doing considerable more than one-half of the business of these countries.

P. SAXE & SON of this city have sold of late two thoroughbred Jersey bulls and two Poland-China boars to Capt. Buhne & Sons, stockmen and dairymen of Eureka, Humboldt county; also, to Z. Russ & Sons, thoroughbred boars and one Hereford bull for their extensive stock ranches in Humboldt county, Cal.

HORTICULTURE.

Olive Studies at the State University.

Prof. Hilgard, director of the University Agricultural Experiment Station at Berkeley, has just published a 16-page pamphlet descriptive of the preliminary results secured in the investigation of California olives and olive oil at the University. The pamphlet is written by Mr. A. P. Hayne, assistant, in charge of viticulture and olive culture. We quote the following:

The work done in the olive laboratory of the Agricultural Experiment Station of the University of California during the season of 1893-94 was on a larger scale than heretofore. The University culture stations were unable, owing to the youth of the trees, to furnish olives for experiment; but public-spirited growers from many parts of the State donated a sufficient quantity to enable the central station at Berkeley to make some valuable experiments in oil-making and analysis. Sixty-seven samples of olives were received from ten of the leading olive-growing regions of the State. The entire 67 were analyzed by George E. Colby, instructor and chemist in the viticultural laboratory of the station.

Before reporting upon the experiments, it is desirable to give some general data in regard to the various points involved.

MATURITY OF THE OLIVE.

It seems to be a common belief in California that the proper state of maturity of olives is when they have reached jet-blackness; also, that it makes little difference how long they remain on the tree, or in storage after being picked. This is an error, not only as regards the making of oil, but the pickling of the fruit also. The quantity of oil in the flesh is the same at the time of redness as it is a month after the jet-black color has been reached, so there is nothing to be gained in quantity by delaying the harvest. What is of more importance is that the quality of the oil in the olives deteriorates the longer they are allowed to remain on the tree after proper maturity (redness) has been reached; for the olein, which gives true quality to olive oil, diminishes and the stearin, or solid "greasy" substance, increases. On the European market "greasy" oils bring lower prices than oils without this "greasy taste."

While it is true that some varieties naturally have more stearin than others, yet it is equally true that this "greasiness" is greatly lessened by early harvesting. In two lots of "Rubras" received at the University this year, one of a wine-red color and the other jet black, this difference was noted at once, even by persons not accustomed to sampling oil. But aside from this "greasy" or "lardy" taste, oil made from over-ripe olives is more apt to "cloud," and to deposit a granular sediment in the bottles, than in the case of oil made from what are considered "under-ripe" olives. Should the temperature fall to 45° the oil of the over-ripe olive will solidify, while that of the other will remain clear and brilliant till the temperature falls 8° or 10° lower. As a rule the purchaser will prefer a clear, brilliant oil to a solid one.

Right here it would be well to note that a popular idea seems to be that if an oil solidifies even at the freezing point of water it is adulterated, while an oil remaining clear at the same temperature is pure. This is a misconception, for both pure olive oil and the oils usually used for adulteration solidify at about the same temperature, the difference generally being that partially clarified oil or oil made from over-ripe olives is the first to solidify or "freeze." It was found that olives picked in an "under-ripe" condition gave, almost without exception, an oil of a darker color; the jet-black olives gave oils much lighter or yellower in color, while the red olives almost invariably gave that beautiful olive-green tint that characterizes the highest grades of oil, due allowance being made for variety characteristics.

Another striking point brought out by the experimental work in the oil-room was that the same variety of olive grown in different localities yielded oils differing very strikingly in quality. Thus several lots of the so-called Redding Picholine were received, some of which were grown in deep rich bottom land and others either on gravelly hillsides or on higher, well-drained, light soils. In every case the oil from the hillside olive was superior to that from the low lands. Oil from the rich soils was always harder to clarify, and prone to cloud up and solidify much sooner than that from poorer soils.

The Redding Picholine yields at best an oil of doubtful quality, but the difference in its oil, due to different classes of soil, was most strikingly illustrated. Not only was this noted in the case of the Redding Picholine, but also with Rubra, Oblonga, and varieties that give high grades of oil.

FROZEN OLIVES.

There are few parts of the olive-growing regions of the world where an exceptional season or an early frost does not sometimes surprise the grower before the harvest is completed. The fruit of the olive is much more sensitive to the effects of cold than the tree itself; hence in localities thus subject to early frosts, care should be taken to plant only those varieties that mature early, for once an olive has been frost-bitten it is next to impossible to make a salable oil out of it, and it is quite impossible to make a pickle that can be eaten. The water in the juice of the olive freezes and in so doing expands, tearing the tissue of the flesh. This of itself, of course, would not injure the quantity or quality of the oil in any way, but unless the frost-bitten berry is at once crushed and the oil expressed, the broken tissue decomposes and imparts to the oil a most disagreeable taste and odor, rendering it unfit for the table.

Among the samples of olives received at the station this year were several that had been frost-bitten, either before picking or while awaiting shipment. These were separately made into oil as soon as possible. It was found that a delay of three days from the time the olives were frozen to the time of crushing and pressing, was fatal. The oil

was, to the eye, as clear, and to all external appearances, as good as that made from unfrozen olives, but the taste was such as to render it unfit for use. The odor was very disagreeable and very pronounced, and those who tasted the oil declared it "made from fermented olives."

When we consider that a delay of three days in crushing caused this, we can at once realize the importance of early harvesting, and therefore, of the selection of early maturing varieties to escape frost, for on a large scale it would practically be impossible to express the oil any sooner than three days.

This fact accentuates the importance also of picking the fruit as soon as it reaches true maturity, instead of leaving it on the tree any longer than is absolutely necessary.

From the University Experiment Stations it was learned that the Nevadillo Blanco was the first to be frost-bitten, the Nigierina second, and the Pendulina third. This being an exceptionally severe season, it was found that at the four stations where there were olive trees in bearing, all of the varieties were frozen before the first of January.

In later issues we shall give other portions of Mr. Hayne's report.

Dynamite for Deep Loosening of Soils.

Blasting the soil for tree planting is an old practice in the hard-pan districts of California, as our readers already know. In a paper recently read before the Oregon Horticultural society, Elmer Stearns made the following allusions to the practice and its benefits.

The use of dynamite has passed the experimental stage and is used extensively in many parts of the country. Dynamite can be handled with perfect safety and the total expense to prepare an acre of ground in this way is only a small item. The kind to use is the 30 per cent grade, which is considered strong enough for nearly all lands. Use one-half pound for each charge, unless your land be rocky, then use from one and one-half to two sticks to a charge. In preparing the charge, take a fuse six feet long, and on one end attach a fulminating cap. First make a hole in the end of a stick of dynamite with some small stick, a pencil will do; in this hole place the cap, and with a string tie the fuse and cap firmly to the dynamite stick, to hold the cap and fuse in place.

To prepare the ground for the charge take a crowbar or a two inch auger with a seven-foot shaft and make a hole in the ground six feet deep. Then place the stick of dynamite in the hole, and pour dry sand in the hole and fill it full. If no sand can be had, any soil will do if tamped hard with a wooden stick. Fire the charge in the usual way. The explosion will loosen the ground some distance below the bottom of the hole, and for many feet on all sides of the hole.

There is little or no danger from the explosion, as the ground only heaves a little bit and little or no earth is thrown in the air. The ground, however, will be shaken for 15 to 30 feet on all sides.

After the dynamite has exploded take a shovel and dig a hole sufficiently large to put the tree in, fill the excavation with surface mold and some fertilizer that will aid the growth of the tree and also assist in holding the moisture about the roots of the tree.

The water from rains or the ditch will go down as far as the dynamite has loosened the ground, and will be retained there until used by the tree roots or comes to the surface and evaporates. The surface evaporation can, however, be held in check by thorough cultivation of the soil.

As the roots go down in this loose soil they will always find sufficient moisture to make a vigorous growth and the ground will not check their lateral and downward growth, thus in one season roots will make a growth of two or three times what they would in hard or compact soil where the water could not penetrate on account of hard-pan or the hard baked soil of the dry seasons.

This large growth of roots makes it impossible for the tree to be blown down or out. The tap root will sometimes go down several feet the first season. We have often seen limbs make a growth of several feet during the season, and it is just as possible for the roots to do the same thing if the conditions are right for it.

By having the soil thus loosened for a depth of 8 or 10 feet this growth can be made, and at the same time a greater growth of time can be made, for their growth depends wholly upon the nourishment the roots get. The direct results of the dynamite method are larger and more even fruit, and also earlier ripening. This is easily accounted for by knowing that the water in the spring does not settle around the trunks of the trees as it does in compact soils, and also as the moisture is spread all through the ground it is fed to the tree more evenly and for a longer period of the season.

Many trees are injured or killed by the water settling around the trunks of the trees; pit fruits especially are easily injured in this way.

The dynamite would allow the water to settle, and at the depth of 6 to 10 feet the water in many soils would find a natural underdrainage.

CRACK AND HARM.

The Horse Industry from a Chicago Standpoint.

"To breed or not to breed" the mare this spring. That is the supreme question with many a farmer throughout the West. Little wonder, perhaps, that he does not know what to do, for certainly there has been little profit in horse breeding and raising during the last few years, and now future prospects can best be speculated upon. Over and over again it has been stated in the *Farmers' Review* that good prices were always to be had in the city for good, well-fitted horses of the right stamp, and in its last issue it says it has no reason to go back on this assertion. One has but to watch the market reports to see that what has

been asserted is true, and that the only disappointment about the matter is that high prices are infrequently quoted because the high-priced horses are not often supplied. The demand remains good; the supply does not increase, while never before have scrub horses been as abundantly offered. Indeed, this spring shows even an increased demand for good horses, for thousands upon thousands of "pilgrims," "plugs" and "pelters" have gone to the knacker's yard during the past winter, while not a few have died from starvation, and an equal number have been sacrificed to home treatment, or lack of it. This skimming of the dross of the horse kind cannot but have had its effect; the supply has surely been decreased materially, and soon it would seem even the average horse will be in demand at good figures, while we still contend that the ideal work or driving horse is worth as much as ever before, although buyers are, perhaps, scarcely so numerous as they were a few years ago. In Chicago during the World's Fair, and for six months prior to that event, boarding rates for gentlemen's horses were excessively high, leading to the sale of many animals at cheap rates. Since the fair times have been bad and money has been scarce, leading to the sale of thousands of horses which the owners considered they could not afford to winter. All of these horses have found a market, and at prices that, while they established a low rating for all, can but be regarded as temporary and due to exceptional circumstances and conditions. It has been more a changing of hands among dealers than legitimate every-day buying and selling, and is, we are happy to say, about at an end, so that country sellers will be better able to know where they stand when they have horses to sell than has been the case for over a year. Work is starting up fairly well in the cities, money is less "hide bound," so to speak, and men that parted with their drivers last fall are buying again and looking for better animals, and so, looking the entire situation over carefully, there would seem to be good reason for putting fresh faith in the future of the horse industry, and therefore it is our candid advice to farmers to go on as heretofore breeding horses, but with a better idea of the business gained from the experience taught by the late condition of the horse markets of the country. The old second-rate horses and mares should be gotten rid of, and in their place should be put the good mares the owner's "little faith" is willing to part with. Only the best attainable sires should be used, for no greater mistake could possibly be made than to use a "scrub" stallion this year because the horse business has been unprofitable. We feel confident that matters have come to a head, and that good times are bound to come for horse-breeder who have gone on and omitted breeding the best they know how and feeding and fitting them as they did in better times. For these men there will soon be a harvest of profit; for the breeders that are too impatient to wait for the turn of the tide there is as likely to be dire disappointment and failure in the new line of breeding they have taken up. We have never seen it fail that "big booms" in any variety or class of stock were speedily made sad "fizzles" by too many speculators rushing into the business and overdoing it. On the contrary, the man that has stuck to his business faithfully, through "thick and thin," has come out with a profit in the long run, and at the same time has had the satisfaction of keeping his "household gods" around him—the stock he has so long planned his faith to. In short, the man that formerly made a success of horse-breeding, that so far has continued in it, that still finds himself possessed of suitable stock to go on with, should do so by all means; while there is good reason for the "new beginner" to commence now, when so many older men are going out of the business.

POULTRY YARD.

Managing a Poultry Yard.

I do not claim to be the most successful poultry raiser in the State, but do claim to have some experience on the subject. After eight years' work at it I ought to know a little about successfully managing a poultry yard—not that one is ever through learning from others, and for this reason I am impelled to write this article, hoping it may help some beginner.

It would take numberless articles to give anything like what a true poultry raiser does to make his or her poultry yard a success, and even then practice is better than theory. If there was more real practical work and less theory, there would be more successful poultry raisers. Not that I condemn the practice of writing articles on our experience, for I believe that through the poultry journals we get our best ideas, and experience teaches the rest. But what I mean is that there are so many letters that are misleading—in fact, overdrawn—and new beginners think a fortune awaits them in the poultry business. Hence so many failures.

To be of benefit to each other we should ask and answer questions. I shall not go into the smaller details as to how I manage my poultry yards, for it would make too long an article, but I will give the main points.

I have about a hundred fine chickens of different breeds, from six to twelve in each pen. My yards are subdivided into yards 15x100, each separated by wire netting six feet high, and each yard is set to bearing fruit trees, which give ample shade. The houses are 4x8 and 8x10, boarded on the sides and latticed on the east side. The roosts are all on a level and the nests on the outside of the house, and opening on the inside. I have the droppings removed twice a week and spray once a month. The best thing I have found for ridding the houses of lice and mites is kerosene oil. I empty the nests and clean away the droppings and give the house a thorough spraying throughout. You can make up your mind there are no vermin left. I leave the nests until next day before rearranging them, as the grease would prevent eggs hatching. I then fill the nest with good wood ashes, placing a very little straw on top, and my house is ready for a month's using. I make a trip around after night to see if I can hear any sneezing among

METEOROLOGICAL.

Artificially Increasing Rainfall.

TO THE EDITOR:—The amount and distribution throughout the year of rainfall in California is a most vital question and one that attracts more attention than any other statistical statement of climatic conditions that can be issued. As much depends upon the distribution of the rain in the various weeks of the year, as upon the total amount that may fall in any given season. Heavy rainfall in December, January and February and light rains or none at all after the 1st of April are of little benefit, while light rain from November, at intervals of a few days, up to the middle of June make an ideal year for the agriculturist.

Due to conditions which are not necessary here to relate, the rains of California occur principally in the three winter months. The rainfall is heaviest in Del Norte and Humboldt counties on the north, from which it gradually decreases in amount along the immediate coast to San Diego in the south. In the interior it is heaviest in Siskiyou and Shasta counties, whence it gradually decreases to San Diego county. The amount of rainfall along the coast is from 77 inches in Del Norte county to 11 inches in San Diego county; in the interior from 40 inches in Siskiyou to 5 inches in the eastern part of San Diego county. From a line drawn east and west through the southern line of Sacramento county, northward the rainfall in California is 20 inches or more; south of such a line it is less than 20 inches. Twenty inches of rainfall in any year or season is ample for all purposes for vegetation when such an amount is well distributed through the various months, especially in the months when vegetation is maturing—from April to July. Over the section of California where the rain amounts to less than 20 inches in any year or season, or where it is badly distributed—i. e., when practically no rain falls from March to July—then irrigation is necessary to insure the successful growth of vegetation, be it cereal or fruit. There is a large portion of California where all conditions are favorable for the production of any product known to the temperate zone, and for many articles of the tropic and semitropic zone, save the absence of rainfall. This deficiency is overcome by the extensive irrigation ditches and consequent supply of water for supplying that which nature has failed to do. In years of drouth, as the present, even the irrigation ditch is guarded most jealously.

This prelude leads up to the question, Is there no way to help or assist nature to furnish man with water in the shape of moisture from the clouds? Within the memory of the present generation common school geographies spoke of and contained on the maps of the United States what was then termed the "Great American Desert." This desert has passed away. The questions then are, Has the rainfall

increased? What conditions have arisen to change the so-called "desert?" First, it should be known the section defined as a desert was not in reality a desert as the term is technically and generally understood. The semi-desert conditions which prevail have been overcome by the advent of railroads, settlements, cultivation of the soil, planting of trees, and last but not least, by irrigation. These are the causes which changed the "desert" into one of the most fertile sections of the United States and which will materially reduce the difficulty of nature's deficient supply of moisture, especially in dry or drouth years, in California.

The engineers in charge of the Mexican Central railway reported that in the building of the road it was noted that with the coming of the construction train, bearing great quantities of steel rails, that the rain fell in advance of the train at unusual times and in unusual quantities. It can be assured that in the construction of railways the electrical conditions of the country are disturbed that have an influence upon the precipitation. The cultivation of the soil allows of the moisture which falls to be absorbed by the soil rather than allowing it to run off, as is the case in hard and unworked soils; hence a greater amount of moisture is present, which, evaporating, produces a higher percentage of moisture in the air. The food for a storm is heat and moisture; hence the influence of the cultivation of the soil is facilitating the deposit of moisture.

The planting of trees serves a twofold purpose in this connection. The leaf surface of the tree is very great, when the aggregate is considered; hence can be seen the great amount of increased humidity obtained from the moisture which is thrown off by the leaves. Secondly—The roots of trees serve as a sponge, when taken in connection with the soil surrounding them. They absorb and retain moisture and allow its gradual escape to spring, thus affording a more constant supply to the streams, preventing their drying up and affording a greater amount of moisture to the atmosphere. The various systems of irrigation distributing moisture to the soil, which in turn is absorbed by the vegetation and finally evaporated, furnish a most satisfactory means of making the air more humid and of making the conditions more favorable for possible rainfall. All of these conditions combined add very greatly to the moisture of the air; hence they are food for the storm and facilitate the possibility of rain, when without these artificial means rainfall would be impossible. Therefore it may be considered that the opening up of the land to tillage, the planting of trees, the building of railroads and the general covering of many square miles with vegetation that were formerly barren wastes, have a tendency to retain the moisture from the clouds and this in turn renders the air more humid, so that there is an actual increase in the moisture which is beneficial to vegetation. In this connection the following from U. S. Department of Agriculture, Forestry Division, Bulletin No. 7, will prove of interest:

There is one region deficient in rainfall and water supply for which claims in behalf of an actual or possible increase of rainfall due to human agency are less often made, but which the preceding analysis

leads me to believe would not be unreasonable to anticipate. I refer to the San Joaquin valley of California. This valley is flanked by the Coast Range on the west and by the Sierras on the east. The moisture evaporated from the surface cannot escape from the basin, but will be largely precipitated either over the valley or on the sides of adjacent mountains which constitute its watershed. If, therefore, the increase in irrigation and in the extent of cultivated area produces a material increase in the evaporation, it seems reasonable to expect that this moisture will be restored by an increased rainfall in the valley and on the adjacent mountain sides. One consideration only would appear to retard and diminish this effect. The enclosure of the valley prevents that rapid indraft of air which renders possible a rapid vertical circulation; thus the activity of the whole process is rendered sluggish and the total amount of moisture passing through the cycle from evaporation to rainfall is smaller than with a more rapid circulation.

Unfortunately there is no long record of rainfall in California, or in any section of the semi-arid regions of the United States. At Sacramento and at San Francisco very accurate rainfall records exist from 1849 to the present time. Sacramento is not a good representative of the semi-arid section of California, to show the effect of the settlement and development of the country on the rainfall, while San Francisco is an ideal station to compare from, the latter station being out of the influence of any artificial means that might cause rainfall. The distance between the two stations is about 80 miles.

Using the records from those stations and grouping the years together in five year periods, we have the following results in percentages of the variations in the rainfall for each period from the normal:

	San Francisco.	Sacramento.
1850-54.....	minus 12	plus 4
1855-59.....	minus 4	minus 18
1860-64.....	plus 1	plus 2
1865-69.....	plus 12	plus 8
1870-74.....	minus 11	minus 13
1875-79.....	plus 2	minus 2
1880-84.....	plus 6	plus 22
1885-89.....	plus 3	plus 1
1890-94.....	minus 7	minus 1
Sums.....	(minus 34 plus 24)	minus 34 plus 37

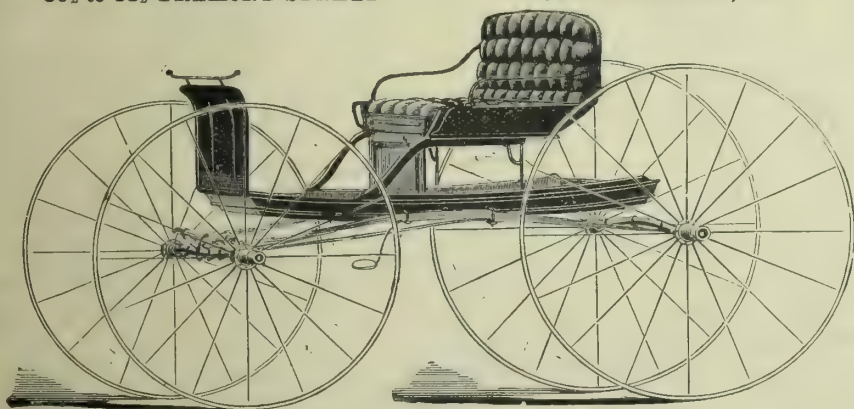
Showing that at San Francisco, in the total, there is a deficiency of 34 and an excess of 24, or ten per cent in favor of the former for the whole period of 44 years, while at Sacramento there is a deficiency of 34 and an excess of 37, or an increase of three per cent in the rainfall for the period, indicating quite clearly that the rainfall of Sacramento is on the increase, due to cultivation, tree planting, irrigation, etc., and it is reasonable to presume that the ratio of increase prevails in all sections of the interior, removed from the influence of the ocean currents. It is not to be understood that yearly there is a three per cent increase in the precipitation at Sacramento, but that in the aggregate there is that much of an increase. What the future may be present knowledge of meteorological science prevents an intelligent answer, but it is very reasonable to presume that the more development there is in the State the greater are the possibilities of an increase in rainfall.

Weather Bureau Office,
San Francisco, Cal., May 14, '94.

B. S. PAGUE,
Forecast Official.

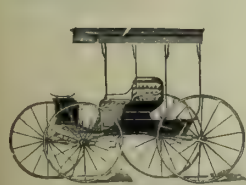
CALIFORNIA WAGON & CARRIAGE CO.

36½ to 44½ FREMONT STREET..... SAN FRANCISCO, CAL.

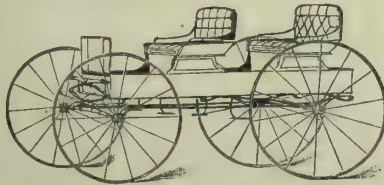


No. 31.—1-inch steel axle, leather trimmed. Price \$60.

HARNESS...\$7. BUGGIES...\$75. SURREYS...\$130



No. 129.—Price \$65.



No. 600.—1½ axle, 1½ wheel. Price \$65.



No. 51.—Price \$100.



No. 90.—1½ axle. Price \$125.

WRITE FOR CATALOGUE.

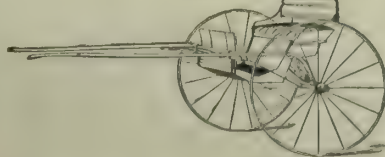
GOODS SHIPPED EVERYWHERE.



No. 55.—Price \$80.



No. 1.—1-inch axle. Price \$19.

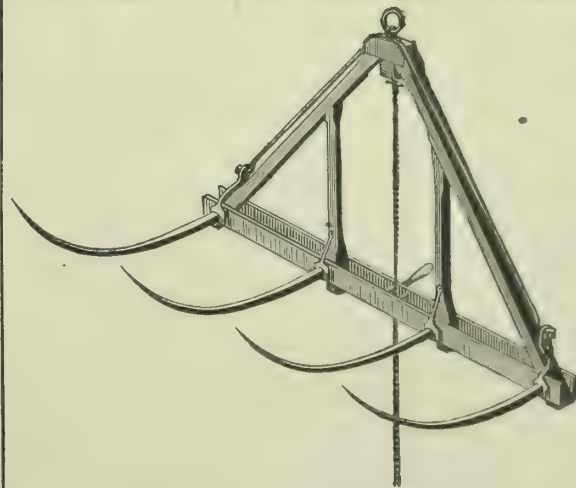


No. 19a.—1-inch axle. Price \$25.

CALIFORNIA WAGON & CARRIAGE CO.

36½ to 44½ FREMONT STREET..... SAN FRANCISCO, CAL.

JACKSON'S "LIGHT WEIGHT" FORKS



Made and Sold under the
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Patent:

No. 197,137.....Nov. 13, 1877

No. 210,458.....Dec. 3, 1878

No. 306,667.....Oct. 14, 1884

No. 403,019.....May 7, 1889

Other Patents Pending.

The purpose of this notice is to inform both farmers and merchants, who use or sell Horse Forks, that they must not purchase Horse Forks that infringe the above Patents; and to call their attention to the fact that certain horse forks, manufactured by F. E. Myers & Bro., Ashland, O., and imported and sold by the Deere Implement Company, of San Francisco, are direct infringements of the above patents, the manufacturers of the infringing forks having admitted in Court that their forks were an infringement of the above patents, and are now paying royalty for manufacturing and selling them east of the Rocky Mountains; and they have agreed not to sell any west of said Rocky Mountains.

All parties selling or using these infringing Horse Forks will be promptly prosecuted.

PRICES JACKSON'S "LIGHT WEIGHT" HORSE FORKS:

3-foot with four tines, very light Fork for Hay.....each \$25
3½, 4 and 4½ feet, with four tines, for Threshing Machines and Stacking Hay with my Walker Carrier....." 30
5 and 6 feet, with six tines, for Light Hauling or Large Loads....." 35

Extra Fork Tines, \$2.50 each. My tines are nicely finished and tempered. This fork is constructed on common-sense, scientific principles; no unnecessary weight in it.

—MANUFACTURED BY—

BYRON JACKSON MACHINE WORKS,

OFFICE: 626 SIXTH STREET, SAN FRANCISCO.

THE HOME CIRCLE.

Mr. Peters of Schoharie Moralizes.

Ye'd like to be a boy again? I wouldn't, ye can bet.
I'm satisfied jest as I am; age brings me no regret.
I'm havin' finer times these days than when I was a lad,
An' wishtin' I was back again's a wish I never had.

I wouldn't have to go to school for all the cash there be,
A-learnin' how to read and write and studyin' g'ography
With that red-headed teacher, with his frownin',
lammin' way,
To spank me 'cause I'd mix Maine up with Pennsylvania.

An' drivin' cows to pasture every day at 6 A. M.,
An' gittin' thrashed for fishin' 'stead o' keepin' track o' them,
Ain't got no sentiment for me. I never did enjoy
The trials that I allers got for bein' jest a boy.

An' furthermore, I'd ruther have the misery of life
I went through when it came to choosin' Marthy for my wife
To look back on an' shiver 'bout, jest as I now kin do,
Than havin' it a thing to come to be looked forward to.

An' as for chums, I wouldn't swap them little sons o' mine
For twenty thousand of the chums I had when I was nine;
An' when it comes to eatin', why, it sort o' suits my eye
To know that if I want it I kin eat a whole mince pie.

You fellers kin be boys again if so it pleases ye,
But where I stand jest now's the age of ages all for me.
I'm satisfied with what I am, old, gray, and bent withal;
It's sort o' pleasant to be old and know ye know it all.

The Mystery of Mustang Valley.

Written for the RURAL PRESS by D. A. Macdonald.

Mustang valley is one of those secluded places in the Livermore mountains, hemmed in by high ridges and lofty peaks, towering up on either side like mute sentinels placed there by Dame Nature to guard this fertile spot. Nature has lavished her gifts of flowers, shrubs and trees with a generous hand upon this sequestered place to adorn it with a mantle of beauty each spring, and the musical waters of the winding stream that courses down through the valley seems to sing a perpetual song of praise to the god of nature for the bestowal of those gracious gifts.

Our story dates back to the spring of '66—long before the hardy pioneer farmer invaded this mountain region in quest of a home. Since then the valley has changed in appearance as well as in name, and the Mustang valley of the long ago, with its tragic story enveloped still in mystery, is lost in the fields and orchards of the thriving farming community of to-day, and lives only in the memories of those who are familiar with the story of the valley. When grain farming began to take the place of stock raising in Livermore valley the stockmen were forced to retreat to the foothills and mountains to pasture their vast herds of horses and cattle, and the vaqueros soon became familiar with every peak, creek and canyon, in their rounds in search of stray stock.

Mustang valley, embracing an area of some eighty or ninety acres, became a rodeoing ground where the stock was rounded up every spring to be cut out and branded and soon became a well-known place to every vaquero and stockman in that section.

One balmy morning in the spring of '66 four stockmen rode over the divide above the valley. All of a sudden one of them exclaimed as he glanced down the beautiful slope below him, "What! a settler in the valley?" A look of astonishment spread over the countenance of each man as he looked down the valley and saw a newly-erected habitation, built of logs and shakes, on a point of rising ground near a bend in the creek below. "Who can the settler be?" queried one of the party. "We will ride down there and find out," said the first speaker, who was one of the leading stockmen of that section; "but it's strange that anyone with a family should settle in here in this isolated place while there are lots of good ranches yet to be taken up in the foothills, and there's a family there for I see two women outside." In a short time the stockmen rode up to the cabin and were greeted with a friendly *buenos días* (good morning) by an old Mexican, whose words, manner and appearance told in an instant that he belonged to the higher class of Mexicans, probably a descendant of one of the first families, of which Mexican aristocracy is so proud. The stockmen were invited to alight

and rest their tired horses in the shade, which they did, and a few moments after were asked their names and finally introduced to the family. The old man spoke very little English, and as all the stockmen in those days spoke Spanish fluently the conversation was carried on in that tongue. The family consisted of Senor Lopez (which he said was his name); his wife, a matronly old lady; their daughter, Inez, and Raphael, their son, a young man of about 22; and a tall, handsome young fellow who bore no resemblance to any of the family and was introduced by Senor Lopez as Ramon Torres, a young distant relative of the family and the affianced lover of his daughter, Inez.

Inez Lopez was charming as well as beautiful, and possessed that peculiar clear complexion seldom seen among Mexican beauties, and her clear soft-brown eyes seemed to be overflowing with love and affection as she glanced at Ramon and blushed when her father introduced him.

Ramon Torres was one of those tall, lithe, soldierly-looking fellows, in the prime of life, with bravery stamped upon every feature of his handsome face, and it is no wonder the fair Inez became a worshiper of his charms.

Senor Lopez was very reticent in regards to speaking of their former home and his reasons for immigrating from his native State in Mexico and selecting such an isolated place of abode in his declining years in the wilds of California. He was one of those peculiar, unapproachable men that we oftentimes meet from whom it would be useless to try to obtain information which he did not feel disposed to give, and any more information in regard to this mysterious family other than what he told the stockmen on their first visit could never be learned. He said that they came from Sonora, Mexico, where they had lived all of their lives up to that time, and they had wandered around until they found this place in Mustang valley, which came nearest to their ideal of a home to spend their last days in peace in. He stated that he had become tired of the political turmoil in his old home in Mexico, and found it impossible to retire from the active life he had always led, to the seclusion he had so long desired, without emigrating into a new country where he would be a perfect stranger, and he hoped to end his life in peace and quiet, surrounded by the beloved members of his family in the home they had selected in this pretty little mountain valley. He said they had ample means to secure them all the comforts of life they desired aside from what they could make the valley produce, for he stated that he intended to make his home a model little farm. After partaking of the welcome breakfast so kindly prepared for their visitors by Senora Lopez and Inez, and with an invitation to call again when they came that way, the stockmen bade the family good morning and resumed their journey to one of their camps some ten miles distant. On the way to camp the stockmen discussed the matter as to what might be the cause of the family deserting their native land and secluding themselves in this mountain valley. There must be some greater cause than Senor Lopez volunteered to explain. Then they speculated as to how or by what route the family came, for none of the ranchmen in Livermore valley nor any of the vaqueros in the hills had mentioned anything about the strangers being seen on their way coming in, and it was a mystery as to how they found the valley; so the stockmen concluded that some member of the Lopez family must have had some previous knowledge of that section before their settlement in Mustang valley. Arriving at that conclusion they dismissed the matter from their minds for the time being, until their return to the lone habitation in the valley on their way home to Livermore a few days later. They reached Senor Lopez's about noon and once more partook of his hospitality, and, after dinner, seeing that Ramon and the beautiful Inez were absent, the stockmen inquired if they had gone to Laddsville—the only town at that time in Livermore valley—to visit Mexican friends there. The old senor said no, that they had neither friends nor acquaintances out in Livermore, and they preferred not to make any, as they wished to live a secluded life, and, although they were glad to receive occasional visits from the stockmen of the country when passing back and forth, they preferred not to extend their acquaintance further. He said that Ramon had gone back to Mexico in order to arrange some business matters prior to making his home with them, and that Inez had accompanied him, as they were to be married before they returned. As the old man spoke of the marriage a strange and animated look came into his face and he gazed in silence for a moment out over the mountains in the direction of

the south and muttered something to himself. Then his face paled, and the fire of bitter hatred shone in his eyes for a moment, when a whispered remark from Raphael seemed to bring him back to his former cool and courteous manner, when he changed the topic of the conversation and never mentioned the names of the absent ones again during the stockmen's visit that day. Shortly after dinner the stockmen saddled up their horses, and, after thanking their host and hostess for their kind hospitality, with a friendly *adios* they started for Livermore. When they arrived in the valley they told the people about the strange Mexican family that had settled up in the mountains, and made inquiries as to whether any one knew them or had seen them on the way when they moved into their secluded mountain home. But as far as could be learned no one had either seen or heard of them before. The stockmen returned home and told the story of this mysterious Mexican family. Two weeks afterward the stockmen, accompanied by others, started to the mountains to round up their stock, it being time for the annual rodeo. They took the Mustang valley route, and on the way they talked about the strange settlers and wondered whether the gallant Ramon and the beautiful Inez Lopez had arrived in Mexico and were united by some old padre in the holy bonds of matrimony by that time or not. As the stockmen had started from Livermore before daybreak, it was yet early in the day when they reached the divide, and as they crossed over and came into full view of the valley below, they were astonished to find, instead of the house where they had been so hospitably entertained on their former trip, a small, winding column of smoke slowly rising up from a heap of ashes and charred and burning ends of the logs that formed the hospitable abode of the strange Mexican family at the time of their former trip to the valley. They urged their horses down the steep trail into the valley with all possible haste, and soon arrived on the scene. The sight that met their eyes caused the blood to run cold in their veins, and a sickening sensation overcame those hardy stockmen and made them faint and speechless for the time being. Although the most of them had been accustomed to scenes of barbarousness and cruelty all of their lives on the frontier, that scene made such a lasting impression upon their memories that it will never be erased as long as they live.

Among the still burning embers lay the charred remains of Senor Lopez. Near him lay the horribly disfigured body of his wife. In front of the door lay the dead body of the beautiful and lovely Inez, with the clothing torn almost entirely from her body, which was horribly mutilated. In her hand was still grasped a dagger, which had given the death thrust to the ferocious and brutal-looking black Mexican who lay dead close by her. Down near the creek lay the body of Raphael with a bullet hole through his heart, and a short distance away lay the form of the gallant Ramon, cut and shot to pieces, showing that a terrible struggle had taken place between him and the two dark-visaged murderers who lay dead beside him. From all appearances it seemed that the family were surprised and attacked soon after they arose in the morning, and being outnumbered by the murderous ruffians who attacked them, the conflict was short and fierce, and the ruffians who escaped burned the house after plundering it. What is the key to the mystery? Did Ramon and Inez meet or sight those murderers on their way to Mexico, and suspect their purpose, and return in haste, closely pursued by the murderers, to warn the rest of the family of the impending danger? Or did they only go to some place in the southern part of the State, and on their return were trailed by those fiends to their secluded home in Mustang valley? What could have been the cause for the complete annihilation of this whole family? It could not have been for robbery alone. Was it for some political cause for which Senor Lopez had to fly from his native country? Or was it the plot of some

designing Mexican of rank with revolutionary intentions, who found Senor Lopez a serious obstacle in his way, and hired those fiends incarnate to wipe the whole family from the face of the earth? Or was it the undying love that Ramon and Inez had for each other, and the union of those members of the Lopez and Torres families, which, perhaps, were sworn and deadly enemies, that was the cause of this great tragedy that the silent, sentinel peaks that still stand guard over the valley, alone witnessed? Those are questions that will probably never be answered, and the mystery that surrounds the tragedy of Mustang valley will never be cleared away. The creek still flows down through the valley with musical song, and soft breezes stir the needles of the same old pines on the mountain-side, and the high, sentinel peaks seem to say, "We alone possess the key to the mystery, but our lips are sealed forever." There is nothing left to mark the place where this terrible tragedy was enacted, and the ripening grain waves in the summer breeze to-day over the spot where the abode of the hospitable Lopez family once stood.

Gems of Thought.

Woman is the masterpiece.—Confucius.
Men have sight, women insight.—Victor Hugo.

Men make laws; women make manners.—De Segur.

Virtue is like a rich stone, best plain set.—Bacon.

Learning is the greatest alms that can be given.—Fuller.

The happiest women, like the happiest nations, have no history.—George Eliot.

Alas! how enthusiasm decreases as our experience increases.—Mme. Louise Colet.

In delicate souls love never presents itself but under the veil of esteem.—Mme. Roland.

The most fascinating women are those that can most enrich the every-day moments of existence.—Leigh Hunt.

Duty is carrying on promptly and faithfully the affairs now before you. It is to fulfill the claims of to-day.—Goethe.

You will never have more than three or four friends in the course of your life; your entire confidence is their right. But to give it to many—is not that to betray your real friends?—Balzac.

Common sense in one view is the most uncommon sense. While it is extremely rare in possession, the recognition of it is universal. All men feel it, though few men have it.—H. N. Hudson.

The animals to whom nature has given the faculty we call cunning know always when to use it, and use it wisely; but when man descends to cunning he blunders and betrays.—Thomas Paine.

A mother once asked a clergyman when she should begin the education of her child, which she told him was then four years old. "Madam," was the reply, "you have lost three years already. From the very first smile that gleams over an infant's cheek your opportunity begins."—Whately.

The Resources of Poverty.

Many a man since Romeo's apothecary, has plead: "My poverty, but not my will, consents." It would be commonplace to moralize upon this theme if it suggested nothing more or less than frequent occasion of crimes defined by law; but it comprehends all those concessions of honor and of dignity which are prompted by the pressure of want and mortification of shabbiness. It is one of the bitterest of the hardships of the poor that they feel constrained to maintain an attitude of invariable complaisance toward those upon whom they depend for subsistence.

There are degrees of poverty, and a vast deal depends upon one's conception of values. It is said that a man is as old as he feels, and, we believe, it is equally true that he is as poor as he feels. There are well-to-do

Highest of all in Leavening Power.—Latest U. S. Gov't Report.

Royal Baking Powder
ABSOLUTELY PURE

men who feel poor because they are not millionaires and, in point of fact, they are poor. We have seen a story—a kind of fable, no doubt—which tells how a traveler lost amid desert sands was dying of hunger, when he came upon what he believed to be a sack of dates, but which proved to be only a sack of pearls. The poor man fainted from sheer disappointment. A well-fed man in his place might have swooned for joy. The great thing is to have the right appetite, and it is only the honestly hungry man who elicits our sympathy. The trouble is—at least a very common trouble—that the real triumphs of life are sacrificed to unessential wealth. How many artists, how many writers, men of genius, have painted down, or written down, to the level of a vulgar popularity for the sake of paltry pelf! This aversal descent is easy, because it is a far simpler matter to please than to excel.

What the poor in respect to material wealth need above all things to understand, is the higher value of the resources within their reach. It has been recently said, and well said, that the world is full of men who are atrophied on every side, except that through which they are gaining their daily bread—men who have sacrificed to immediate success about everything that makes life worth living. The immediate practical value of culture is that it adjusts the man not only to his business, but to his life. It restores the balance so likely to be lost in the fierce competition and the perpetual strife. Culture can never be real, practical, downright enrichment of life which it ought to be until men have ceased to think of it as a luxury. In one sense it is just as widely open to the poor as to the rich. One pair of eyes, one pair of legs, one open mind, one honest heart, a few hours of leisure, a bit of country and a dozen books supply the elements of deep and genuine culture for any one who knows how to use them. It is not a question of privilege; it is a question of making the best of what you have. It is true that some men have far greater opportunities than others; but essential culture—that is, the ripening of the soul by contact with the best that has been thought and done in the world—is quite as much open to the man of limited opportunities as to the man of great opportunities.—New Orleans Picayune.

Fashion Notes.

Small bonnets will reign once more this summer.

A cloth cape in any chosen color is a safe investment. It should be very full and not too long. Quite gay colors are used.

New batistes come in tinted and white grounds spotted with white flowers and striped in open patterns like drawn work.

Sailor hats are worn quite plain, of smooth black, ecru or blue straw, with a high crown, narrow brim, and only a band of ribbon with a bow.

Lace is pretty, popular and effective. If there is any hesitation about the trimming of a summer gown, a compromise may be made on lace.

New shoes and slippers include a high-cut Oxford shoe of fine, black patent leather with tiny white buttons and a piping of white kid around the vamp.

Jet bonnets, which can be worn at all seasons, are a good investment. They are trimmed with violets or other small flowers, or loops and ends of light-colored velvet.

A new and beautiful material for trimming dresses is satin muslin. The surface is glossy like satin, and the texture is light and almost as transparent as India muslin.

Velvets are to continue in favor through the season, especially for trimmings, and dozens of yards of velvet ribbons are used on challee, foulard and China silk dresses.

Wide-ribbed pique is one of the fabrics for cotton gowns. They come in pale colors as well as white, and are made up by Paris dressmakers in very fanciful styles, trimmed very elaborately with lace and ribbon.

Fancy, rough straws, especially brown and ecru, are in favor for toques and Russian turbans. They are trimmed all around the crown with bunches of violets, either black, purple or white, and *choux* of yellow velvet in the Russian yellow and chrysanthemum shades. A black aigrette starts up on the left invariably, and sometimes on the right as well, the Russian aigrettes being almost as thick as a shaving brush.

A convenient dress for spring wear is of black serge, made with a plain full skirt interlined with light canvas to make it stand out from the waist; for this skirt two waists can be made—a simple waist of serge for the morning, and another of moire antique, made tight fitting, with a basque commencing at the hips, and some soft, creamy lace falling from the neck, making it a handsome dress for afternoon wear.

YOUNG FOLKS' COLUMN.

The Fisher Boy.

Little Jack lives close by the stormy sea;
The son of a fisherman brave is he,
Who sails away in a stout old boat,
The bravest and truest man afloat.

Little Jack with his mother stays at home,
But he loves on the sandy shore to roam,
And to be the first to catch a sight
Of his father's boat coming back at night,

And to be the first, when it comes to land,
To offer a ready helping hand;
And there's not in the town a lad so spry
In spreading the long net where 'twill dry.

And he helps the men who have worked all day
Unload the fish in the merriest way;
And when the cargo is all ashore,
He runs ahead to the cottage door.

There the mother waits, with the supper spread,
But stoops to pat fondly the curly head;
For fond and proud of her boy is she,
The lad who a fisherman brave will be.

And then he lies down to slumbers light,
He dreams of a boat with sails so white,
And he sails in dreams far over the sea;
And who so happy and gay as he?

Ah, the day be distant when from the shore
He may watch for the boat that returns no more!
When he turns to the cottage with weary tread,
And the mother weeps for the father dead!

—Harper's Young People.

Our Sociables.

We have revived the old-fashioned game of "forfeits" in our village, and all the girls and boys declare that they enjoy the merry sociables we have been attending during the winter.

It is extremely difficult to name forfeits that are not rude and unladylike, so we put our heads together and composed the following list:

1. Rub one hand on your forehead at the same time you strike the other on your heart, without changing the motion of either for an instant.

2. To keep silence and preserve a sober countenance for two or five minutes, whatever may be said or done by your companions.

3. Kiss your shadow in every corner of the room without laughing.

4. Repeat without mistake any difficult sentence your companions may appoint.

5. Make two lines of rhyme, or if one line be given find a rhyme to it.

6. Say five flattering things to the one who sits next you, without mentioning the letter I.

7. Pay a compliment, and undo it, to every one present.

8. Imitate, without laughing, such animals as your companions name.

9. Stand up in a chair and make whatever grimaces you are ordered, without laughing.

10. Laugh in one corner, cry in another and sing in a third.

11. Stand in the middle of the room and first make up a very woeful face, then a merry one.

12. Two may pay forfeits together in this way: They stand in separate corners of the room, one begins to walk toward the other with her handkerchief at her eyes, saying in a dismal tone: "The king of Catsland is dead!" The other, passing by her in the same attitude, sobs out: "Sad news! Sad news!" Again passing in the same way, they both repeat: "Alas! Alas!" This must be done without a smile.

Try our game of "forfeits," boys and girls. Perhaps some of the girls know two or three good forfeits. If they would contribute their mite we could make up a very interesting and amusing list. — Ruth L. Jacobs, Beaver Co.

A Second-Hand Baby.

Mrs. Kelly, the actress, is fond of telling a good story, and for her latest she claims absolute originality. One of her tradesmen, it appears, has just received an addition to his offspring. His son, a small boy, was taken to see the new arrival, whom he eyed very critically.

"Why, he's got no hair, father," was his first remark.

The fact was admitted.

"And he's got no teeth, father," was the next comment.

The circumstance could not be denied.

"I tell you what, father," was the final observation; "you've been taken in. He's an old one." — Tit-Bits.

Maud — "Why don't you give young Sewers some encouragement, if you love him?" Nell — "Oh, he ought to be able to press his own suit. He's a tailor." — Philadelphia Record.

DOMESTIC ECONOMY.

EGGS A LA TRIPE.—Put into a stewpan three ounces of butter; and when melted, stir in one tablespoonful of flour; when smooth, add four large onions that have been boiled and minced; simmer slowly five minutes, stir in two tablespoonfuls of cream, and cook five minutes longer. Slice six hard-boiled eggs and lay in this sauce. When hot through, send to table.

AUNT CHLOE'S FRIED CHICKEN.—Cut up the chicken an hour before cooking and lay it in salt and water. Take it up, wipe and dip it in a batter made of two eggs, a little flour, pepper and a little nutmeg. Fry in part lard and part butter. Put the chicken on a hot dish. Pour off the contents of the spider, and make a gravy of cream, butter, salt, pepper and a little nutmeg, thickened with flour wet in a little cold milk. Let it boil up and pour over the chicken.

BROWN BREAD.—Three pints of Indian meal, three pints of rye meal (both measured after sifting), one teaspoonful of salt. Mix them well together. Add one cupful of molasses, half a teaspoonful of soda and half a cup of yeast. Then mix the whole together with luke-warm water. Pour it into an iron kettle and let it stand until it begins to crack on the top. Put it into a moderate oven and let it bake five or six hours. Use unbolted Indian meal. The secret of this brown bread lies in having the meal coarse.

CHEAP SPONGE CAKE.—Three eggs, two tablespoonfuls of water and a teaspoonful of sugar, mixed together. One and a half cups of flour, two teaspoonfuls baking powder and a pinch of salt, stirred in quickly. Season with a teaspoonful of vanilla or juice of half a lemon. Bake in three jelly pans in a quick oven. For the filling, grate two good-sized apples, add the grated peel and juice of one lemon, one well-beaten egg, and sugar to taste. Boil five minutes and spread between the layers. This is very good if eaten fresh.

SCALLOPED EGGS.—Make a forcemeat of finely minced ham or tongue, fine bread crumbs, pepper, salt, a little minced parsley, and some melted butter; moisten with milk to a fine paste, and half fill some patty pans or scallop shells with the mixture. Break an egg carefully upon the top of each, dust with pepper and salt, sift some finely powdered cracker over all, put several bits of butter over the top of each egg, and put in the oven and bake till the eggs are well set, which will be in about eight minutes. Serve hot.

CURRY OF COLD ROAST BEEF.—Cut some slices of cold roast beef into rather small, square pieces and dredge them with flour. Slice a small onion and fry it a light brown in one heaping tablespoonful of butter; then pour in a quarter of a pint, or as much as you may require of the gravy from the meal, or gravy made from the bones and trimmings of meat. Add one tablespoonful of curry powder and the slices of meat. Set it over a brisk fire and stir it well together for ten or twelve minutes. Serve it with a border of rice round the dish, or rice in a separate dish.

APPLE PIE.—One quart of sliced apples, one teacup of water, one of sugar, half a nutmeg, yolk of one egg, a little sugar and milk, puff paste. Peel and slice the apples, add the water, sugar, peel of half a lemon grated and the nutmeg. Stew until tender, then set it away to cool. Line a shallow tin pie dish with a good paste; put in the stewed apple half an inch deep. Roll out some of the paste, wet it over with the yolk of an egg beaten with a little milk and a teaspoonful of powdered sugar; cut it into very narrow strips and lay them in cross-bars or diamonds across the pie; lay another strip around the edge. Trim off the outside neatly with a sharp knife until the paste loosens from the dish.

The distinguished John Bellows of England once asked his little boy what his history lesson was for that day. The boy replied that it was about Edward II, who was "a weak and extravagant prince." His father asked him if he knew what that meant. "Yes, I do," was the reply; "it means that he could not throw a stone very far, and that he put too much butter on his bread."

Miss Ethel (who has taken one term at an art school)—"Oh, what a soulful, dreamy picture! How calmly the moon is moving through the blue ether!" Rembrandt Jones (amateur artist, with much embarrassment)—"A—er—excuse me, Miss Ethel. I intended that for a pumpkin on a blue platter."—Vogue.

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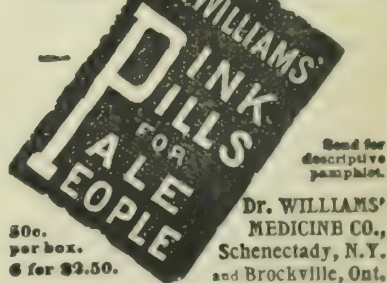
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PATRONS OF HUSBANDRY.

Random Thoughts.

By A. P. ROACHE, W. M. S. G. of California.

While sham and fraud go marching round,
Alas! Where can the truth be found?

Bennett Valley and Santa Rosa Granges will unite in a grand anniversary celebration at Bennett Valley on May 26th.

American River Grange will initiate a class and conclude with a harvest feast and open meeting on May 25th.

Watsonville Grange has issued a call for a meeting of fruit-growers, to organize for mutual protection, on May 26th. This grange will discuss Mr. Lubin's novel proposition the first Saturday in June.

The "political pot" has already commenced to simmer and now is the time for the farmer to stir and season the broth, if he would have it to his liking. Don't wickedly or carelessly stay home and let court-house rings and ward strikers nominate men who will represent their interests, and howl and swear because they don't represent your interest. If you don't take an interest in your own affairs, how can you expect them to? Discuss men and measures in your grange, not as party men or measures, but as American citizens laboring for the greatest good to the greatest number; step squarely to the front; nominate honest, faithful men; be sure there is a generous sprinkling of bright, intelligent farmers among them; don't go off on a party tangent; stand by your men till elected; give them to understand they are to represent the constituents who elect them; that they are expected to do honest work for honest pay, and the people will soon begin to wonder where all the good things come from which they have not tasted for years.

Sacramento Grange will hold its regular strawberry festival on May 25th, a cordial invitation to which the writer regretfully returned a negative answer on account of prior engagements.

The Executive Committee of the State Grange will meet at Santa Rosa on the 28th inst.

Sister W. W. Greer, our accommodating State Grange organist, will soon announce a list of songs to be practiced by the many excellent singers in our subordinate granges, that we may have some of those grand choruses at the State session in October. Ask for a few of those instrumental duets, Sister Greer.

All our literary sisters and brothers are requested to begin putting their wits to work for the production of something creditable for our October session. Don't say you can't; can't never yet climbed a steep hill, and the time is ample.

State Deputy Delos Wood of Santa Barbara county will soon take hold of grange work in that section with a will. Success to you brother, and may "never say die" be your motto.

Sisters and brothers, you can never fully appreciate the true value of the grand fraternity to which you belong till you go out in the grange and in the homes, and read the great, generous, loyal hearts and boundless depths of manhood and womanhood which are there revealed, and thank God, as I have, that the Grange develops something in an individual better than gold, higher than place, and as sweet as home can make it.

If hand in hand and soul to soul
Was the watchword of the day,
The vilest wrongs and the blackest sins
Would tremble and cower away;
And love and hope would mount the throne
In life's grim, terrible test,
And cheerily sing of joyous peace
And days of endless rest.

What a wonderful thing evolution would be if it only evolved the right thing in the right time. It has given us the Paddy boys, Oscar Wilde, the Willie boys, and the long-haired poets, supplemented by the chinch bug, the grasshopper, the army worm, the drouth, the hard times, and the industrial army. Verily, the earth moves in a great circle!

"If an ounce of blood is worth a pound of muscle,"
A grain of common sense is worth a universe of theory.

From the Organist of the State Grange.

TO THE EDITOR:—The time for holding our annual meeting of the State Grange is not far distant, and, as many granges hold few meetings during the busy season, I do not think it is too early to commence work on our music. The following pages have been selected from the new books, the "Grange Melodies": Pages 94, 111, 102,

115, 120, 137, 152, 160, 164, 114, 154, 156, 190, 130, 142, 125, 159, 128.

A good many of the grangers have already sent for the new books, and those who have not, I hope, will, for I know you will all be pleased and entertained with the bright songs the books contain.

Study the songs well so that the music may be one of the features of our next session. Fraternally,

MRS. W. W. GREER.

Sacramento, May 16, 1894.

The Secretary's Column.

A special meeting of the executive committee of California State Grange will be held at the office of the Secretary, Santa Rosa, Cal., Monday, May 28, 1894, at nine o'clock A. M., for the purpose of transacting such business as may properly be brought before said committee.

Don't forget the joint anniversary picnic of Santa Rosa and Bennett Valley Granges, at Bennett Valley Grange hall, Saturday, May 26, 1894.

The worthy master of State Grange, Bro. A. P. Roache, the worthy overseer, Bro. W. Walter Greer, and the worthy lecturer, Bro. S. Goodenough, are expected to be present and address patrons and friends of these granges. All are cordially invited to attend. A good time is assured.

Bro. O. L. Twitchell, secretary of Grass Valley Grange, under date of May 8th, says that they had the pleasure of listening to the eloquent addresses of Bros. Messer and Roache on the 7th. Although the attendance was not as large as desired, yet every one present was highly pleased and paid the strictest attention to every word that was said.

Bro. Frisbie of Yuba City gave his views as to building up the order and making the meetings interesting. His remarks were well received and greatly appreciated. A closed meeting was held in the evening, after which a sumptuous repast was served. Those who missed this meeting missed the best treat Grass Valley Grange ever had.

San Joaquin Pomona Grange meets Thursday, May 31, 1894, and no doubt much business will be transacted interesting to Patrons of San Joaquin county.

This office acknowledges receipt of *Our Grange Homes*, published weekly in Boston, Mass., the last two issues containing three to four columns of grange news descriptive of Bro. Messer's trip while in this State from his own pen.

This office acknowledges receipt of Annual Proceedings of Colorado and West Virginia State Granges, session of 1894.

Address all communications for California State Grange to Don Mills, Santa Rosa, Cal.

From Grass Valley.

Grass Valley Grange, although a little aside from the centers of grange interest, and therefore without the stimulus of association and competition with other similar bodies, is fully imbued with the fraternal spirit and attends well to its duties. In spite of distance and the expense of traveling, it never fails of representation at the State Grange. At the late Grange Congress in this city it sent two of its officers (Mr. and Mrs. R. S. Twitchell) who were among the most appreciative of those present.

Grass Valley Grange is slowly but surely growing, and it has recently enjoyed the encouragement of a visit from National Lecturer Messer, our State Master Roache, and District Deputy Frisbie. Under date of May 12th Mrs. Twitchell writes:

On May 5th we put a class of six sisters through the third and fourth degrees, with accompanying harvest feast; then the worthy national lecturer, the worthy master of California State Grange, also Brother Frisbie of Yuba City, arrived in our town on the 4 o'clock train on May 6th, were met by a committee previously appointed and sent to the Morgan House for accommodation. Monday forenoon they were taken to the famous Idaho gold mine, and at about half past two the lecture was in order. The worthy lecturer gave us as interesting a lecture as he did in Festival Hall at the Grange Congress, and almost entirely different, so we have heard two lectures from him and feel ourselves very fortunate. The worthy master then addressed us, which was a treat I can assure you. Then, after a song by the grange, we adjourned until half past 8 P. M., when we held a closed meeting, during which Brother Frisbie spoke to us very pleasantly under the head of "Good of the Order." After impromptu speeches by Messrs. Roache, Messer and others, the meeting took the form of a social reception, which was greatly enjoyed.

Appreciative Letter From Mr. Sage.

TO THE EDITOR:—Allow me, through the columns of your interesting paper, to express my appreciation of the kind and generous treatment I received from the Patrons of your State when in company with National Lecturer Messer and State Master Roache I visited several of the granges and attended the Grange Congress there. After bidding good bye to Brothers Messer and Roache, I started for Sacramento, where a pleasant surprise awaited me. Brother Daniel Flint took State Lecturer Goodenough and myself, behind a fine pair of thoroughbreds, over to Brighton, where a very interesting grange meeting was held, and an enjoyable day was spent, returning at night with Brother Flint where Sister Flint gave us a hearty welcome. The next forenoon Brother Flint took us out to his extensive hop ranch and over the city till we hurried to catch the train which bore us homeward.

We never shall forget the kindness of our California friends, and if business matters did not tie us here we should not be long in seeking a home in the land of fruits and flowers. As it is, we shall plan to take a party out there another winter and see more of your beautiful country. C. D. SAGE.
North Brookfield, Mass., May 14, '94.

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Miserable
IN THE
EXTREME.
Hands
COVERED
—with—
SORES.

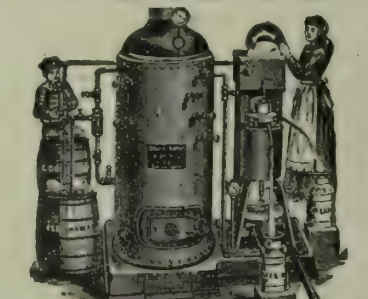
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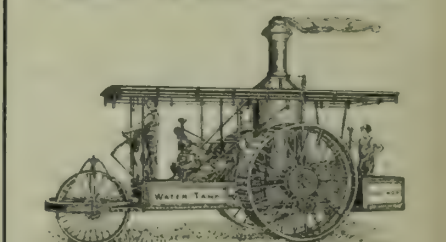
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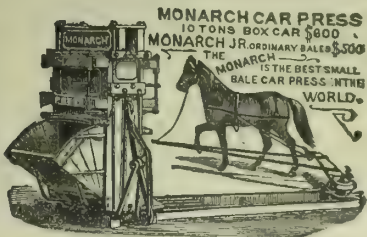
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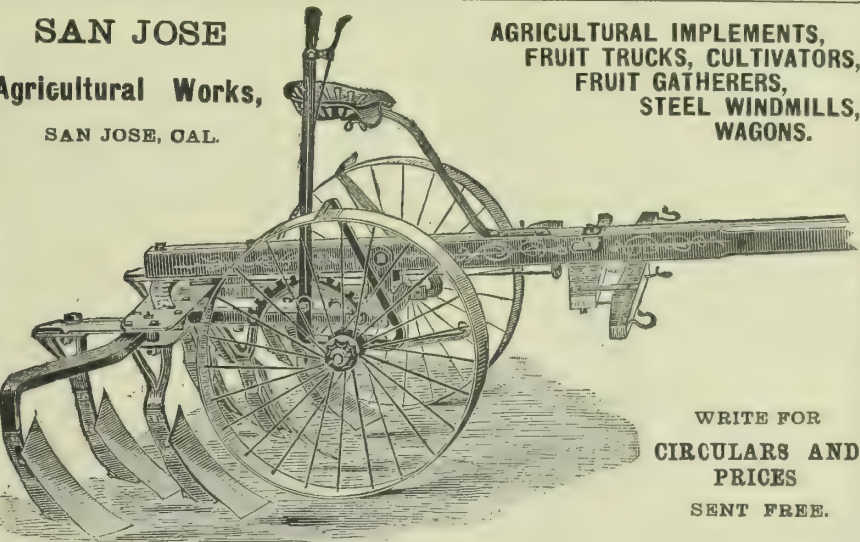
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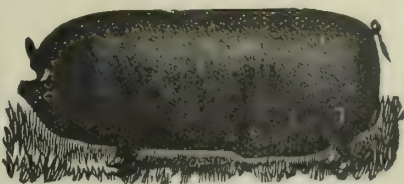


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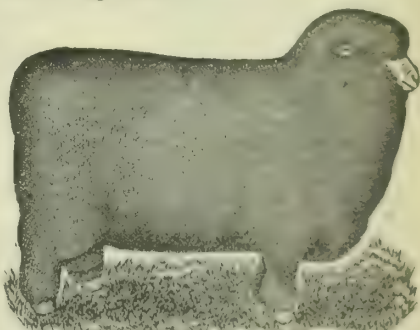
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AGRICULTURAL NOTES.

CALIFORNIA.

Kern.

Bakersfield Californian: Quite a business is being done in shipping baled alfalfa hay to various points south of here. The ruling price on board the cars is \$8 a ton, and after all expenses, freights, etc., are paid, there is a margin of \$4 to \$6 a ton for the dealers at the points to which consignments are made.

Bakersfield Californian: The irrigated grain on the Weed Patch is doing splendidly. One man reports a 40-acre field covered with grain that averages six feet high and so thick that he is sure of getting 200 tons of grain hay therefrom, or five tons per acre.

Kern Echo: Some grain and young alfalfa from S. N. Scott's place in Virginia Colony has attracted much attention of late. They were grown on land which, a few years ago, was thought to be too badly impregnated with alkali to be productive. But it now seems certain that such land is well adapted to grain crops. It has been remarked more than once this spring that grain on the alkali lands is looking better than any other. Such land holds moisture better than the lighter soils.

Bakersfield Californian: Dr. Lemke has killed 30 glandered horses in the vicinity of Tehachapi since the 26th of last month, and now believes that he has the terrible disease stamped out. This has all been introduced there by diseased stock that came from Tulare county. A matter of peculiar hardship is the case of L. F. Britte, who has lost 15 horses, all of them valuable animals, from this disease. He had no complaint to make, but, on the other hand, assisted the Health Officer and insisted that every infected animal be destroyed. But to lose \$1500 worth of horses (and his stock was of that value) is pretty hard on a man.

Los Angeles.

Pasadena deciduous fruit-growers have formed an association for co-operative drying and marketing. D. M. Smith is president and C. E. Tebbets is secretary.

The Los Angeles Times of May 19th thus sums up the situation in southern California: There was a change in the weather programme during the week in the shape of several showers of rain, which were quite light in the valleys but heavier in the mountain regions. There is some difference of opinion in regard to the effect of this precipitation. It has undoubtedly done some harm to the hay crop, while most of the grain was too far gone to be benefited by it. Frequent night fogs have to some extent taken the place of rain in the coast regions. It will be some months before we can know with certainty the approximate amount of the barley crop in this section, but from all that can be ascertained it will be a very short one. The only section of the southern part of the State where anything approaching an average crop of barley can be expected, is in the strip of land along the coast from San Luis Obispo to Orange county, and in a few moist spots or localities where irrigation is practiced. Much of the barley that was intended for grain has already been cut for hay, and some of it has given very poor hay. It would be well for growers who are able to hold their coming barley crop to do so, and not repeat the mistake of last season, when a large amount of barley sold at 50 cents or even less, and a couple of months later was selling at a dollar. There seems to be scarcely any doubt that higher prices will prevail for barley between now and the end of the year. The reports which come from various sections of southern California continue to indicate favorable prospects for the deciduous fruit crop, with the single exception of prunes, which, as stated last week, will be a lighter crop than was expected. They are not setting so heavy as they were expected to do, and many of them are dropping. Apricots are bearing heavily, and will have to be thinned considerably. There are a few in the market from the north, but they are very small in size, the only thing large about them being their price. There is a number of Eastern buyers in the State who have come to size up the fruit crop, which is a matter of more than usual importance to them this year, owing to the almost complete failure of the crop in many sections of the East. Some of these buyers complain that the fruit-growers of southern California have their ideas altogether too elevated in regard to prices, when the abundance of the coming crop and the business depression throughout the country are taken into consideration. It is said that some contracts have been made for apricots at Redlands at the rate of \$32 per ton. The orange crop is almost entirely disposed of, and what few oranges remain should be shipped as soon as possible, as the moist weather of the past few days, if followed by heat, will not tend to improve their quality.

Napa.

Napa Register: It would do the eyes of dwellers in drouth-afflicted portions of the State good to see the grain fields north of Napa—more particularly those of Oak Knoll and Eschcol farms—just now. The wheat stands thick and as high as the fences, while the heavy-headed and full-bearded barley nods yes to the promise of a great harvest. "I have traveled over the State a good deal in the past four weeks," said Mr. McDonald of San Jose, as he looked upon these fields yesterday, "but I have seen no grain to compare with this."

San Benito.

Hollister Advance: Haying started in earnest this week, and the mowers are humming in every direction. From all sections of the valley come the cheering reports that the yield is turning out much better than was anticipated. Land from which a yield of half a ton to the acre was expected is turned out a ton. An expert on hay matters estimates that the farmers of this county will have 10,000 tons of hay for shipping.

San Bernardino.

Chino Champion: Never since beet farming has commenced on the Chino ranch has the crop looked as fine, as healthy and as promising as it does today. On all the land where a stand was obtained, the beets are making a wonderfully vigorous growth. Even on the dryer land, where there are beets, they

bid fair to make a heavier crop than ever before. For the sugar-beet industry the most encouraging feature of this is the fact that in this extraordinary dry season, when every other agricultural crop in the country is suffering from drought, the prospects are splendid for a heavy tonnage of beets wherever they are now growing. There is scarcely any other farm crop that will not be "short" on account of the dry season; yet had it not been for the unusual continuous winds which prevailed, even our dryer land would have given a fair crop this year. As it is, the chief loss on the dry lands is the cost of seed, while a heavy tonnage on the damp lands bids fair to compensate for this.

San Joaquin.

Lodi Sentinel: Messrs. Huffman, Anderson and Carr have been making a vigorous canvass among the fruit men of this vicinity to see how they felt upon the proposition of establishing a Fruit Exchange here. They have seen almost every man within a radius of ten miles of Lodi who owns an orchard, and out of the entire lot only one refused to enter into a co-operative association. * * * Saturday, May 26, at 10 A. M., is the time set for the convention. The manner and expense of conducting the same will then be thoroughly explained, and Mr. B. F. Walton, the president of the State Fruit Exchange, will be present to give all information that may be needed.

Santa Barbara.

Santa Maria Times: The creamery is a great educator. It teaches the ordinary farmer that he does not know how to feed and care for cows, and tells his wife that she does not know how to make butter, although she may have been called an expert. Farmers who have never been able to lay up a cent the old way have invariably come out ahead after a number of years patronizing a creamery, and dairymen who have made a good living the old way have laid up riches after becoming thoroughly acquainted with the new way. The creamery tells how to keep more cows on the same number of acres and how to get more butter from each cow and a better price for the whole of it, at a less cost of production. It is the way to financial success and the other way is the other way.

In speaking of thinning, the Santa Maria Times remarks that no rules can be laid down. This much can be safely said: No one ever thins too much. Many go over their trees twice and still leave too much on. Some claim that apricots for drying do not need thinning, but no greater mistake could be made. Dried as well as other preserved fruit must be large and perfect in order to command profitable prices. The first object of thinning fruit is or should be to keep the trees in healthy condition for future crops, the second object being to secure a marketable fruit this year. A large limb allowed to overbear for one year will bear inferior fruit the next year, while small limbs and twigs allowed to overbear (especially the peach) will not bear at all next year.

Solano.

Woodland Democrat: A Solano fruit-grower, who tried to employ white labor exclusively last year, says he is not willing to try the experiment this season unless a better class of labor comes along than is camped along the creek now. He is quite confident that three-fourths of the men now pretending to look for work wouldn't hold a job longer than a week if they had the chance.

Sonoma.

Santa Rosa Republican: C. Sawtelle, one of our leading fruit-growers, is having a commodious fruit-drier erected on his thrifty place below town, and will handle his own fruit crop this season. Many other fruit raisers intend following Mr. Sawtelle's example.

Two trains of 18 cars each, carrying about 3000 sheep to each train, have arrived at Santa Rosa. One of the consignments was from Fresno and the other from Madera. The sheep belong to the firm of Shoober, Beale & Co., of San Francisco, and the pastures failing in the southern country, they were shipped to Santa Rosa, and from here they will be driven to the ranges in Mendocino county. Two more train-loads of sheep of about equal number are to arrive in a few days.

Sonoma Index-Tribune: Already a number of new buyers have entered the field for this season's crop. Twenty-five dollars per ton for peaches and apricots has been offered several of our farmers. The offer was refused, as fruit is money this year, and the outlook is very promising for the orchardist. In regard to the vineyards which were badly nipped by Wednesday morning's frost, many of the wine-growers take a hopeful view of the disaster wrought by the visitation. They say that wine is way down and a partial failure of the grape crop will revive the market and cause grapes to go up, in which case a half-crop at fair prices is better than a full crop at \$8 per ton. At the least calculation, the grape crop in Sonoma valley will be cut down one-half, if not more, by Wednesday morning's frost.

Index-Tribune: Hay cutting on the Senator Jones 4000-acre ranch, south of town, is in full blast. Twelve or fifteen mowers and a large force of men are engaged in cutting and stacking the hay. The yield will be large. Nearly 900 acres in barley, which will be headed and threshed, will yield 60 bushels to the acre. The Jones ranch this season will put some money into the Senator's pocket, who has spent over half a million dollars in reclaiming and improving the tract, which altogether embraces 19,000 acres, only 3500 of which has been put under cultivation.

Yolo.

Knight's Landing letter in Woodland Democrat: A man from San Francisco has been in this vicinity buying horses and mules for the Sandwich Islands. I learn that he bought a span of mules from N. Myers & Co. and six head from Ed. Roberts. The price ranges from \$75 to \$100 each for good mules. * * * The farmers were delighted when the clouds began to disperse and the sun shone out once more. The hay crop is a big item with them this year, and as a great deal of it has already been cut, continued cloudy and moist weather means a tremendous loss. If the weather should clear up now without further showers the loss will only be to hay, and very trifling at that.

The wild blackberry crop has begun to ripen in

the vicinity of Knight's Landing. It will not be so large as last year.

Blacks letter: The farmer who ten days ago was predicting a crop failure and dire distress among the agriculturists, now acknowledges that he was worse scared than hurt. The grain is filling out well, under the influence of the prevailing cool weather and south wind, and the general opinion now seems to be that the average will be better than it was last year. Of course all this is written on the supposition that there will be no rust, as the result of rain, and that there will not be more than the usual amount of north wind.

Winters Express: The Express desires to say to all those who want to work in the orchards about Winters that there is no work now. Nor will there be until about the middle of June. The apricots are not yet ripe enough to ship, excepting the Pringles, and all will be shipped eastward as long as they are not too ripe to bear transportation. So, in a word, do not come here expecting work until after the first of June.

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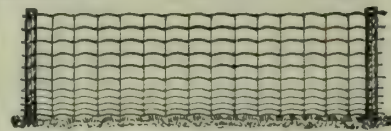
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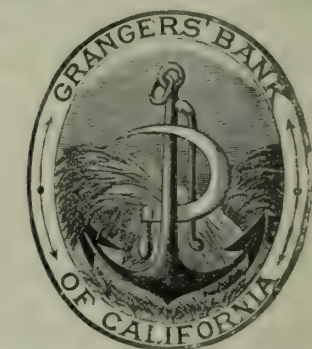
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S. F. MARKET REPORT

Market Review.

SAN FRANCISCO, May 23, 1894.
The local wheat market is lifeless, and there is nothing to indicate any immediate improvement. Standard shipping Wheat is worth about 87½¢ per ctt., but there is no demand and matters could hardly be more lifeless than they are at the present time. Milling wheatchanges hands at a range of 97½¢ to \$1.05 per ctt.

Barley.

There was a better tone in barley on Monday, but it did not last over night. The feeling is undoubtedly better, but there is little doing. Yesterday and to-day there has been a dragging trade. We quote: Fair to good feed, 96½¢ to 97½¢; choice bright, 98½¢ to \$1; Brewing Barley, \$1.10 to \$1.15 per ctt.

Dried Fruits.

Stocks are small and transactions are not large enough to make the quotations more than nominal. The promise is good for liberal yield of both Apricots and Peaches, while Prunes are likely to turn out better than was expected a week or two ago. We quote as follows: Apples, 6½¢ to 7½¢ for quartered, 7¢ to 7½¢ for sliced, and 9¢ to 11¢ for evaporated; Pears, 6¢ to 8¢ per lb for bleached halves and 2¢ to 4¢ for quarters; bleached Peaches, 11¢ to 12½¢; sun-dried Peaches, 8¢ to 9¢; Apricots, nominal; Prunes, 5½¢ to 6¢ for the four sizes, and 4¢ for small; Plums, 5¢ to 6¢ for pitted, and 2¢ to 3¢ for unpitted; Figs, 3¢ to 4¢ for pressed and 1½¢ to 2¢ for unpressed; White Nectarines, — to —¢; Red Nectarines, — to —¢ per lb.

Raisins.

We quote as follows: California Layers, 60¢ to \$1; loose Muscatels, in boxes, 50¢ to 75¢; clusters, \$1.25 to \$1.50; No. 1 loose, in sacks, 2½¢ to 3¢ per lb; No. 2 do, 2¼¢ to 2½¢; Dried Grapes, 1½¢ to 1¾¢.

General Produce Market.

OATS—The arrival of over 10,000 ctt. from Washington yesterday threw a damper on the situation, though asking prices were not lowered. Buyers, however, are holding back, in the belief that the market will make a turn in their favor in the near future. We quote: Milling, \$1.20 to \$1.30; Surprise, \$1.37½ to \$1.45; fancy feed, \$1.27½ to \$1.32½; good to choice, \$1.15 to \$1.25; poor to fair, \$1.10 to \$1.15; Black, nominal; Red, nominal; Gray, \$1.12½ to \$1.20 per ctt.

CORN—There is spasmodic buying, and, when a customer does appear, his purchases are of small volume as a rule. Stocks are liberal, though not excessive. A carload of Nebraska Corn arrived yesterday. Quotable at \$1.22½ to \$1.25 per ctt for Large Yellow, \$1.30 to \$1.32½ for Small Yellow and \$1.25 to \$1.27½ for White.

CRACKED CORN—Quotable at \$27.50 to \$28.50 per ton.

CORNMEAL—Millers quote feed at \$27.00 to \$28.00 per ton; fine kinds for the table, in large and small packages, 2¼¢ to 3¼¢ per pound.

SEEDS—We quote: Mustard, brown, \$2.25 to \$2.50; Yellow, \$3.00 to \$3.50; Triese, \$2.50 to \$2.75; Canary, 3¢ to 4¢; Hemp, 3¼¢ to 4¼¢ per lb; Rape, 2¢ to 2½¢; Timothy, 6½¢ per lb; Alfalfa, 11½¢ to 13¢; Flax, \$3 to \$3.25 per ctt.

MIDDINGS—Quotable at \$19 to \$21 per ton.

BRAN—Quotable at \$16.50 to \$17 per ton.

HAY—The demand is moderate and receipts are ample to meet all immediate wants. Arrivals of new are becoming more free. New Wheat sells at a range of \$10 to \$13; new Wild Oat shows similar margin. Wire-bound Hay sells at \$1 per ton less than rope-bound hay. Following are the wholesale city prices for rope-bound hay: Wheat, \$12 to \$16; Wheat and Oat, \$11.50 to \$15; Wild Oat, \$11 to \$13; Alfalfa, \$9 to \$12; Barley, \$10 to \$13; Compressed, \$11 to \$14.50; Stock, \$10 to \$12.50 per ton.

FEED—Manhattan Horse Food (Red Ball Brand) in 100-lb cabinets, \$8. Manhattan Egg Food, 100-lb bags, \$11.50.

HOPS—The market remains inactive, there being no inquiry from any source. Quotations nominal at 13¢ to 16¢ per lb.

RYE—Arrival yesterday of 352 sks from Washington. Trade slow. Quotable at \$1.15 to \$1.17½ per ctt.

BUCKWHEAT—Quotable at \$1 to \$1.15 per ctt.

GROUND BARLEY—Quotable at \$22.50 to \$23.50 per ton.

POTATOES—Buyers are giving the preference to new. Trade is of fair proportions. We quote new: Common, 50¢ to 75¢; Early Rose, \$1.25 to \$1.50; new Peerless, 65¢ to \$1.25 in sacks and \$1.25 to \$1.50 in boxes; Sweet, \$1 to \$1.25 per ctt. We quote old: Early Rose, 25¢ to 35¢; River Burbanks, 30¢ to 50¢; River Red, 20¢ to 30¢; Oregon Burbanks, 45¢ to 75¢ per ctt.

ONIONS—In good supply. Quotable at 40¢ to 55¢ per ctt for new.

DRIED PEAS—We quote: Green, \$1.50 to \$1.75; Blackeye, \$1.60 to \$1.65; Niles, \$1.50 to \$1.75 per ctt.

BEANS—Very little trade in progress. There is rather firm holding, but buyers decline to purchase beyond actual wants. We quote: Bayos, \$2.50 to \$2.70; Butter, \$1.75 to \$1.80 for small and \$2 to \$2.10 for large; Pink, \$1.90 to \$2; Red, \$2.25 to \$2.60; Lima, \$3 to \$3.40; Pea, \$2.35 to \$2.50; Small White, \$2.40 to \$2.65; Large White, \$2.40 to \$2.50 per ctt.

VEGETABLES—Asparagus is less in favor as other varieties increase in supply. Rhubarb is plentiful. The exhibit of Green Peas is large, but there is good shipping trade and stocks clean up

well. Cucumbers are coming in freely, and lower prices may soon be expected. Green Peppers are only in moderate offering. New Garlic will be in season within two weeks. We quote as follows: Cucumbers, 35¢ to 50¢ per dozen for common and 50¢ to \$1 for good to choice; Asparagus, 50¢ to \$1 per box for the ordinary run and \$1.25 to \$1.50 per box for choicer quality; Rhubarb, 20¢ to 50¢ per box; Green Peas, \$1.50 to \$1.75 per sk; Garden Peas, 2½¢ to 3¢ per lb; Summer Squash, 4¢ to 6¢ per lb; String Beans, 5¢ to 7¢ per lb; Refugee Beans, 7¢ to 8¢ per lb; Wax Beans, 5¢ to 6¢ per lb; Marrowfat Squash, 20¢ to 25¢ per ton; Hubbard Squash, —¢ to 1¢ per lb; Green Peppers, 25¢ to 35¢ per lb; Tomatoes, \$1 to \$2 per box; Turnips, 75¢ per ctt; Beets, 75¢ per sack; Parsnips, \$1.25 per ctt; Carrots, 35¢ to 40¢; Cabbage, 50¢ to 60¢; Garlic, —¢ to 1¢ per lb; Cauliflower, 60¢ to 70¢ per dozen; Dry Peppers, 17½¢ to 20¢ per lb; Dry Okra, —¢ per lb.

FRESH FRUIT—Cherries continue in liberal receipt, the arrivals being about 3000 boxes a day. Apricots are a little more of a feature, the supply yesterday morning being 70 boxes. Currants come in slowly. We quote: Cherries, white, 15¢ to 40¢; black, 25¢ to 65¢; Green Apples, 25¢ to 50¢ per box; Apricots, \$1 per large box; Currants, 60¢ to 65¢ per drawer.

BERRIES—Some fine Newcastle Raspberries arrived yesterday. Strawberry receipts were 501 chests. We quote: Strawberries, \$3.50 to \$5 per chest for Sharpless and \$5 to \$6 for Longworths in baskets and \$6 to \$9 in drawers. Gooseberries, 1½¢ to 2½¢ for common, and 5¢ to 6¢ per lb for the English variety.

CITRUS FRUIT—The demand for Oranges is falling off. Offerings of really attractive stock are quite limited, while the fresh fruit season is now well advanced and custom is therefore more scattered. Lemons and Limes are in fair request. We quote: Fair to choice Navel Oranges, \$1.50 to 2.50 per box; Seedlings, \$1 to \$1.50; Mexican Limes, \$4 to \$5 per box; Lemons, Sicily, \$4 to \$5; California Lemons, \$1 to \$1.25 for common and \$1.50 to \$2.50 for good to choice; Bananas, \$1.50 to \$2.50 per bunch; Pineapples, \$2.50 to \$4 per dozen.

HONEY—Stocks are small, while crop prospects are not flattering. The local demand is light and there is no shipping inquiry. We quote: Comb, 10½¢ to 11½¢ per lb for bright and 9¢ to 10¢ for dark to light amber; water white extracted, 6¢ to 6½¢; amber extracted, 5½¢; dark, 4½¢ to 5½¢ per lb.

BEESWAX—Quotable at 24¢ to 25¢ per lb.

BUTTER—Arrivals of fresh Butter continue of liberal volume and prices still shape favorably for the consuming interest. We quote as follows: Fancy Creamery, 18¢ to 19¢; fancy dairy, 17¢ to 18¢; good to choice, 15¢ to 16¢; store lots, 12¢ to 14¢; pickled roll, new, 19¢ to 21¢ per lb.

CHEESE—Quotations remain steady, and dealers are not inclined to make concessions. We quote: Choice to fancy, 9¢ to 10¢; fair to good, 7½¢ to 8½¢; Eastern, ordinary to fine, 14¢ to 15¢ per lb.

EGGS—Supplies more than equal the demand, and prices have downward tendency. We quote: California ranch, 15¢ to 17¢; store lots, 12½¢ to 14¢; Eastern, 14¢ to 15¢ per dozen.

POULTRY—The market has changed but little for a week past. Large young Poultry continues in good demand at rather firm figures, but old fowl and very small young stock are in poor request. We quote: Live Turkeys—Gobblers, 9¢ to 11¢; Hens, 10¢ to 12¢; Roosters, \$3.25 to \$3.50 for old and \$7.50 to \$9 for young; Broilers, \$2 to \$3 for small and \$4.50 to \$5.50 for large; Fryers, \$6.50 to \$7.50; Hens, \$3 to \$4.50; Ducks, \$3 to \$3.25 for old and \$4.50 to \$5.50 for young; Geese, \$1 for old and \$1.25 to \$1.50 for young; Pigeons, \$1.25 to \$1.50 for young and \$2.50 to \$2.75 per dozen for old.

WOOL—The market does not exhibit any particular activity. Nevertheless, good Wools attract attention, and moderate transactions are daily consummated, one firm reporting sales for the week of over 90,000 pounds spring and fall. The weekly circular of Thos. Denigan, Sons & Co. says: "There is nothing of special interest to note in local Wool affairs. Trade the past week was lighter, for the reason that previous purchases had been large, and, therefore, the scourers are not doing so much until they can dispose of what they have already bought. Shippers have bought sparingly, and are not at all anxious because reports from the East are not encouraging; indeed, it would seem that the Eastern markets are getting weaker all the time, notwithstanding the terribly low prices now ruling, so that there is no comfort in doing any business, as bottom never seems to be touched." We quote spring: Year's fleece, ½ lb., 5¢ to 7¢; Six to eight months, San Joaquin, poor, 5¢ to 6¢; do fair, 7¢ to 8¢; Oregon and Washington: Heavy and dirty, 6¢ to 7¢; good to choice, 8¢ to 10¢; valley, 10¢ to 13¢. We quote fall: Northern defective, 5¢ to 6¢; Southern and San Joaquin, 3¢ to 4¢.

There is more Catarrh in this section of the country than all other diseases put together, and until the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease, and prescribed local remedies, and by constantly failing to cure with local treatment, pronounced it incurable. Science has proven catarrh to be a constitutional disease and therefore requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, Ohio, is the only constitutional cure on the market. It is taken internally in doses from 10 drops to a teaspoonful. It acts directly on the blood and mucous surfaces of the system. They offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address F. J. CHENEY & CO., Toledo, O.

Sold by Druggists, 76c.

RUSHFORD HOLLOW AXLE FARM WAGON.

EVERY AXLE GUARANTEED.

BEST WAGON IN THE WORLD.

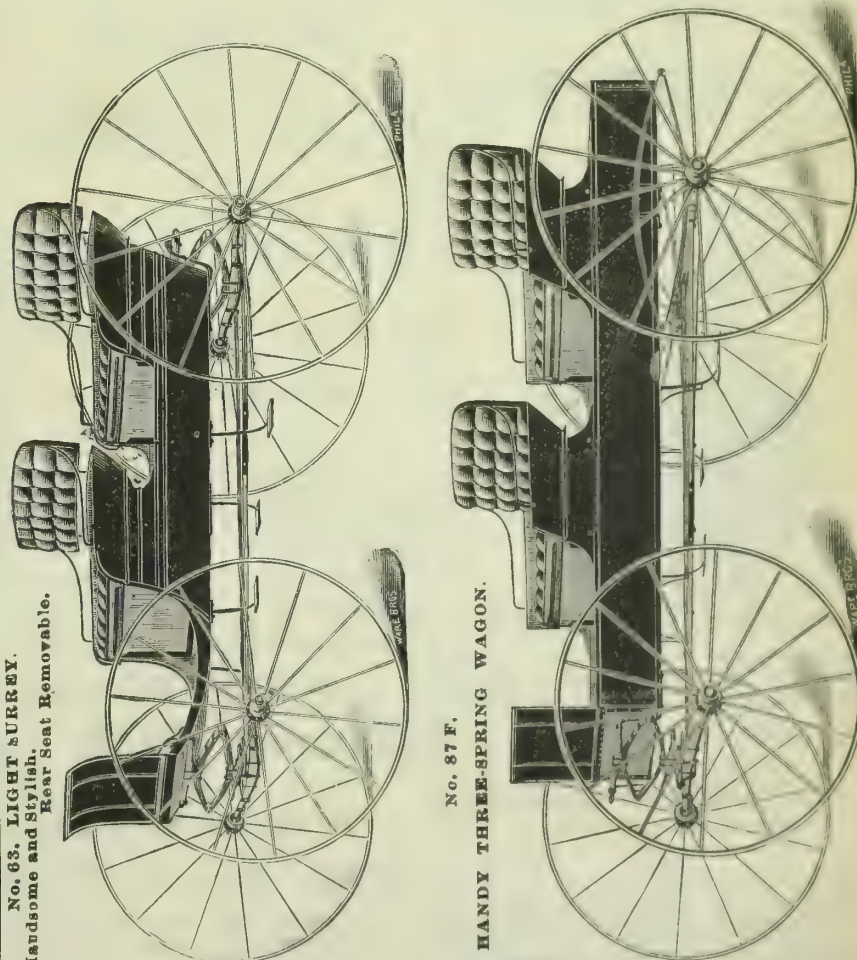
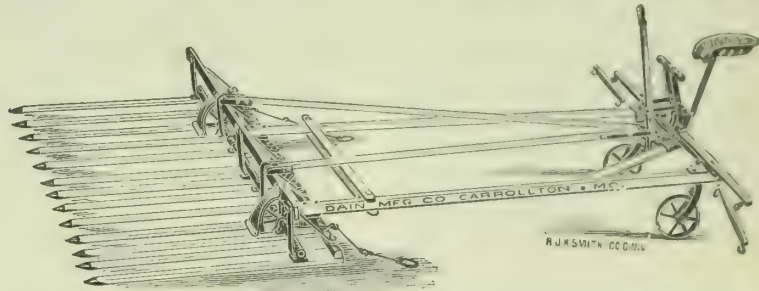


THE BEST IS THE CHEAPEST.

THE DAIN POWER LIFT PUSH RAKE.

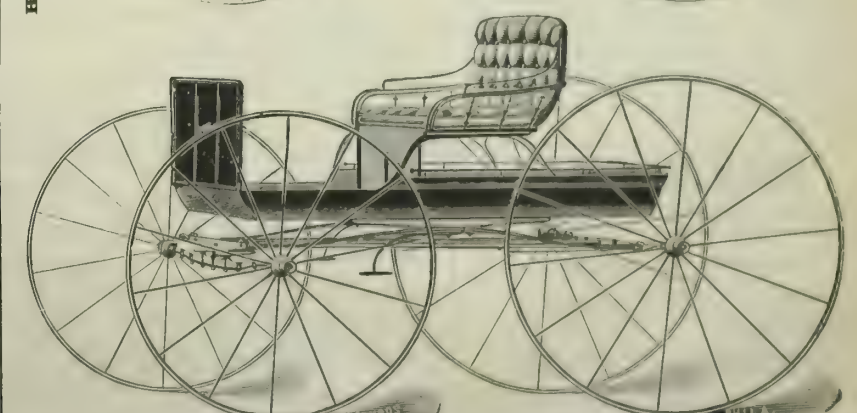
4 WHEELS, 14 FOOT.

With Power Lift, Horse Guide, Automatic Lever, Tubular Steel Axle, Metal-Pointed Teeth, Steel Spring Seat, Etc.



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No. 87 F. HANDY THREE-SPRING WAGON.



No. 1. JERSEY ROAD WAGON. \$80.

OUR STOCK WILL ARRIVE ABOUT JUNE 1st.

They have Three Reaches, Sarven Wheels, Full Paneled, Large Backs, Genuine Leather Trimming, Nickel Rail around Body, and Handsomely Finished Throughout.

HOOKER & CO., 16 and 18 DRUMM ST., SAN FRANCISCO.

GRANGERS' BUSINESS ASSOCIATION, GENERAL COMMISSION HOUSE.

OFFICE, 108 DAVIS STREET, SAN FRANCISCO, CAL.

Warehouse and Wharf at Port Costa.

CONSIGNMENTS OF GRAIN, WOOL AND ALL KINDS OF PRODUCE SOLICITED.

ALSO ORDERS FOR GRAIN BAGS, Agricultural Implements, Wagons, Groceries and Merchandise of every description solicited.

E. VAN EVERY, Manager.

T. R. BALLINGER, Grain Salesman.

They Fall Up and Get Hurt.

The fish that live at enormous depths are, in consequence of the great pressure, liable to a curious form of accident. If, in chasing their prey or for any other reason, they rise to a considerable distance above the floor of the ocean, the gases of their swimming bladder become considerably expanded and their specific gravity greatly reduced; up to a certain limit the muscles of their bodies can counteract the tendency to float upward and enable the fish to regain its proper sphere of life at the bottom, but beyond that limit the muscles are not strong enough to drive the body downward, and the fish, becoming more and more distended as it goes, is gradually killed on its long and involuntary journey to the surface of the sea.

The deep sea fish, then, are exposed to a danger that no other animals in the world are subject to—namely, that of tumbling upward. That such accidents do occasionally occur is evidenced by the fact that some fish, which are known to be true deep sea forms, were discovered dead and floating on the surface of the ocean long before our modern investigations were commenced.—Popular Science Monthly.

A horrid suspicion of cannibalism hangs about the advertisement of a St. Louis man—"Wanted a good girl to cook, and one who will make a good roast or broil and will stew well." Almost as barbarous is a farmer near Fulton, N. Y., who posted this notice in his field: "If any man's or woman's cows or oxen gits in these oats, his or her head will be cut off, as the case may be."

"Patrick, were you a minor when you landed in America?" asked the naturalization officer. "No, your honor; I was a bricklayer."

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MONTEREY CYPRESS
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Everything for the Garden.
Catalogue Free.

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A practical, explicit and comprehensive book embodying the experience and methods of hundreds of successful growers, and constituting a trustworthy guide by which the inexperienced may successfully produce the fruits for which California is famous. 600 pages. Fully illustrated. Price \$3. Postpaid. Send for circular. DEWEY PUBLISHING CO., Publishers, 220 Market Street, San Francisco, Cal.

HORSE SENSE

IN A FEW WORDS.



Stubblefield
April 8/94

"Ordinary" Mowers. Gentlemen, You have got the hardest pulling mower I ever backed up against. I stockled one of them two years ago and stuck to it till it knocked me out. The draft is the heaviest I ever saw. Why don't you pattern after the McCormick No. 4 Steel Mower? Its draft is extremely light making it very easy on horse flesh. Yours truly C. Horse

THE WORLD'S FAIR

Committee, who tested the McCormick No. 4 Steel Mower in the only regular exposition field trials, in a heavy growth of timothy and clover, said, in their official report: "The efficiency of the machine is thus, under fair conditions, nearly 70 per cent. Ordinary figures for ordinary mowers are at least twenty pounds higher in total draft, with an efficiency of not above 60 per cent., which latter figure good machines should be expected to exceed." The McCormick is the lightest draft, and most effective grass cutter yet produced. [Highest Medal awarded.]

McCormick Binders, Reapers and Mowers are built by the McCORMICK HARVESTING MACHINE CO., CHICAGO, and are for sale wherever grain or grass is grown.

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OLIVE TREES.

ALL KINDS OF
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Send and get book on Olive Culture.

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CAULIFLOWER SEED, of large kind called the PISA; originally from Italy. Some raised by an Italian in Los Angeles county. Samples for trial furnished free. Apply to S. W. LEVY & CO., 218 & 220 Washington St., San Francisco.

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A fine assortment, best varieties, free from pests of any kind. Prunus Simoni, Bing, Rostraver and Murdoch Cherries, Black California Fig; Rice Soft Shell and other Almonds, American Sweet Chestnuts. Preparatiens Walnuts. Hardy mountain grown Orange Trees. Our Oranges have stood 22 degrees this winter without injury. Dollar Strawberry, the best berry for home use or market. Address C. M. SILVA & SON, Lincoln, Placer County, California.

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Deciduous Fruit Trees Our Specialty.

THE MOST COMPLETE ASSORTMENT OF

GENERAL NURSERY STOCK GROWN ON THE PACIFIC COAST.

1,000,000 TREES FOR THE SEASON OF 1894-95 IN STOCK.

Acknowledged everywhere to be equal to the best. Guaranteed to be healthy and free from scale or other pests. Send for catalogue and prices. Correspondence solicited. Address

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The Fruit Tree Planting Season being over for this season, attention is called to

Flower and Foliage Plants in Great Variety.

CHRYSANTHEMUMS, the best of the best, now ready. Fine young plants for fall blooming. Ageratum, Achyranthus, Cyperus alternifolius, Palms, Fuchsias, Geraniums, Carnations. FINE PLANTS AT LOW FIGURES.

A great variety of well-grown plants of the most favorite sorts. Send for catalogue. A magnificent stock of Fruit Trees being grown for next season.

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Residence: Sausal Fruit Farm.

FOR THE SEASON OF 1893-94.

BUDDED ORANGE TREES, of leading varieties, one and two-year buds, also a small lot of choice budded and seedling LEMON TREES. Sweet Seedling Oranges, 1 to 4 years old. Shade and Ornamental Plants. Prices to suit the times.

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GRANGERS' BUSINESS ASSOCIATION.

Principal Place of Business, 108 Davis St.,
San Francisco, State of California.

NOTICE:

There are delinquent upon the following described stock, on account of an assessment levied on the eleventh (11th) day of April, 1894, the several amounts set opposite the names of the respective stockholders as follows:

Names.	No. of Certificate.	No. Shares.	Amount.
Adams, D. Q.	250	8	\$ 30 00
Ashley, Geo. W.	246	6	22 50
Adams, Amos.	326	12	45 00
Baker, John.	268	8	30 00
Barber, M. R.	258	8	30 00
Barber, Orpha.	257	4	15 00
Barber, Elam B.	259	4	15 00
Bangs, J. L.	87	10	37 50
Blythe, Mrs. A. E.	53	2	7 50
Brown, Sherman.	49	8	30 00
Brake, G. W.	44	1	3 75
Carr, Nelson.	61	20	75 00
Carroll, M.	57	8	30 00
Clark, Jas. A.	59	10	75 00
Clark, Annette.	60	4	15 00
Campbell, J. C.	267	10	37 50
Campbell, J. C.	355	100	375 00
Campbell, J. C.	388	27	101 25
Campbell, J. C.	408	463	1,736 25
Dewey, Mrs. A. T.	382	2	7 50
Ewer, W. B.	222	10	75 00
Frost, T. G.	77	2	7 50
Frye, W. H.	76	20	75 00
Gates, T. M.	340	2	7 50
Gray, M. L.	7	28	105 00
Huntley, Joseph.	170	4	15 00
Huntley, Mrs. J.	171	4	15 00
Hollenbeck, H. M.	238	8	30 00
Hollenbeck, Mrs. H. M.	239	8	30 00
Jewell, H. M.	111	35	142 50
Ketcham, M. T. E.	139	13	45 00
Ketcham, T. E.	140	28	105 00
Learned, D. A.	131	20	75 00
Larkey, John.	184	30	112 50
Leffingwell, Sr., Wm.	333	5	30 00
Leffingwell, Jr., Wm.	332	8	30 00
Mitchell, J. W.	122	190	712 50
Mitchell, J. W.	395	23	105 00
Mitchell, J. W.	214	12	45 00
Mitchell, J. W.	420	70	262 50
Marshall, A. S.	373	11	41 25
Marshall, A. S.	387	9	33 75
Morris, J. R.	241	80	300 00
Morris, J. R.	242	12	45 00
Montpellier, A., Trille	467	200	750 00
McReynolds, S.	10	8	30 00
McMahon, Mrs. L. E.	174	20	75 00
Nuckoll, N.	174	4	15 00
Nuckoll, Mrs. S. A.	175	2	7 50
Naglemaker, John.	477	10	37 50
O'Brien, J. G.	253	20	75 00
Pittman, Mrs. C. J.	197	5	22 50
Pittman, Carrie.	198	4	15 00
Proctor, W.	217	40	150 00
Russell, Mrs. C. B.	462	40	150 00
Roe, Miss C. E.	397	40	150 00
Sawyer, Jackson.	16	4	15 00
Smith, E. M.	168	20	75 00
Swain, R. C.	179	8	30 00
Strentzel, J.	187	2	7 50
Sayward, J. W.	323	4	15 00
Steckter, Mary E.	348	2	7 50
Steckter, John.	347	2	7 50
Steckter, P. J.	346	2	7 50
Smith, S. R.	454	16	60 00
Smith, S. R.	455	20	75 00
Tuck, J.	313	36	135 00
Tillotson, G. W.	190	4	15 00
Van Sandt, A. A.	200	4	15 00
Vincent, J. F.	243	10	37 50
Wilson, E.	130	6	22 50
Walker, Robert.	185	16	60 00
Whitney, Mrs. S. D.	442	2	7 50
Young, A. J.	193	2	7 50

And in accordance with law and an order of the Board of Directors, made on the 11th day of April, 1894, so many shares of each parcel of such stock as may be necessary, will be sold at public auction at the office of the Corporation, No. 108 Davis street, San Francisco, Cal., on FRIDAY, the 16th day of June, 1894, at two o'clock P. M. of said day, to pay delinquent assessments thereon together with costs of advertising and expenses of sale.

CHARLES WOOD,
Secretary Grangers' Business Association.
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Pumps fitted up for all depths of wells, ready to put in.

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Now that the interest in the culture of the orange is extending so as to embrace nearly all parts of the State, a book giving the results of experience in parts of the State where the growth of the fruit has been longest pursued will be found of wide usefulness.

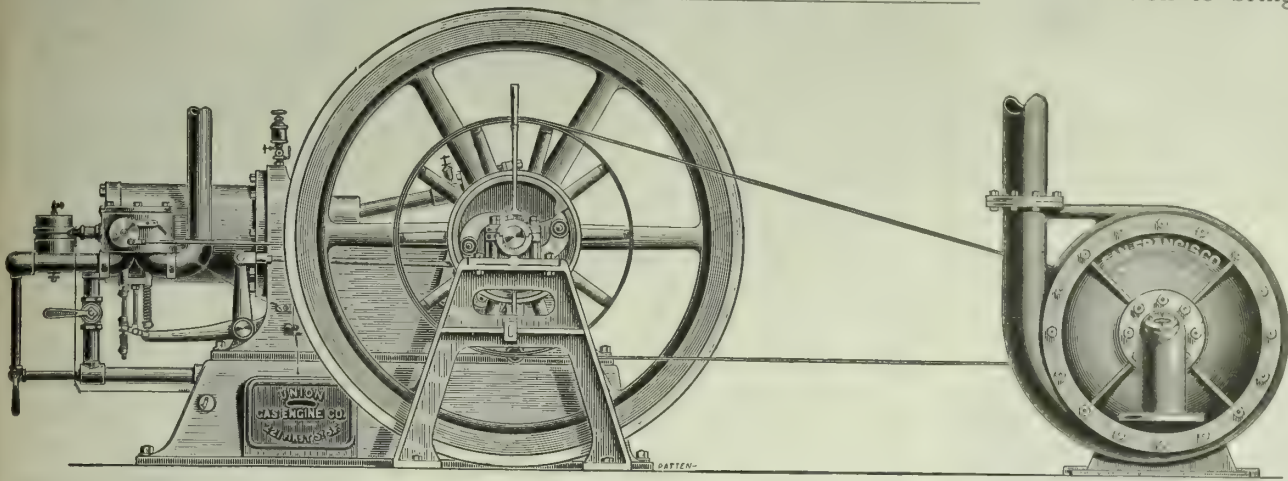
The book is sent post-paid at the reduced price of 75 cents per copy, in cloth binding. Address DEWEY PUBLISHING CO., Publishers, 220 Market St., San Francisco.

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Many so-called gasoline engines are now on the market which are direct infringements of our patents, and it is our intention to bring suit against the various infringers. As the law holds the purchaser, as well as the manufacturer, we would advise parties who have already purchased other gasoline engines to obtain from the sellers of such engines A GOOD AND SUFFICIENT BOND PROTECTING THEMSELVES IN CASE DAMAGES ARE OBTAINED AGAINST THEM, as it is not the policy of this company to work a hardship on innocent parties, but the law makes no such provision.



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Wax or Paraffine Paper, as well as a large variety of other Papers for the wrapping and packing of Green and Dried Fruits and Raisins.

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GEM STEEL WINDMILL With Graphite Boxes.

Guaranteed more durable without oil than other mills that are oiled. Practically these mills require no attention. TRULY A GEM, and worth its weight in Gold. It combines beauty, strength, durability and simplicity. Governs itself perfectly, is easily erected, and is sold on its merits; in fact, it is the best mill on earth. The mill is made entirely of Steel and Cast Iron. Each one of our Gem Windmills is guaranteed.

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Feed our Poultry Food and you will have healthy chickens and lots of eggs. Ask your dealer for it.

Genuine only with RED BALL brand. Recommended by Goldsmith, Marvin, Gamble, Wells, Fargo & Co., etc., etc. It keeps Horses and Cattle healthy. For milch cows; it increases and enriches their milk. 619 Howard St., San Francisco, Cal.

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An elegant residence in Berkeley for sale cheap. New house, 10 rooms, finished attic. All modern improvements. Lot 50x125. Near University grounds. Particulars of:
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Also Choice Building Lot in Town of Palo Alto. Send for Circulars.

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Loans negotiated on first-class securities. Mines and mining prospects of guaranteed value sold on working bonds. O. H. DWINELLE, Grand Hotel, San Francisco, Cal.

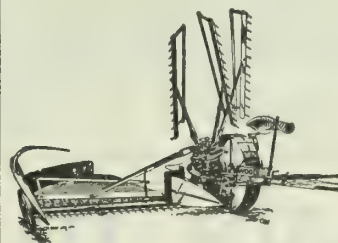
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24 POST STREET.....SAN FRANCISCO.
FOR SEVENTY-FIVE DOLLARS
This College instructs in Shorthand, Type-Writing, Book-keeping, Telegraphy, Penmanship, Drawing, all the English branches, and everything pertaining to business, for full six months. We have sixteen teachers and give individual instruction to all our pupils. Our school has its graduates in every part of the State. SEND FOR CIRCULAR. E. P. HEALD, Pres. O. S. HALLEY, Sec.

GOOD WORK.

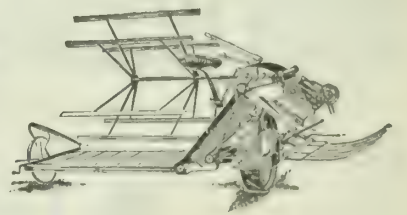
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HAY RAKES.

REAPERS,
MOWERS.



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The WALTER A. WOOD machines are good. The leading improvements in the last 40 years have been Walter A. Wood inventions. Wood machines this year are better than ever. If you have a Walter A. Wood you have the best machine made and can handle your crop, or any crop, economically, easily and thoroughly.

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THREE
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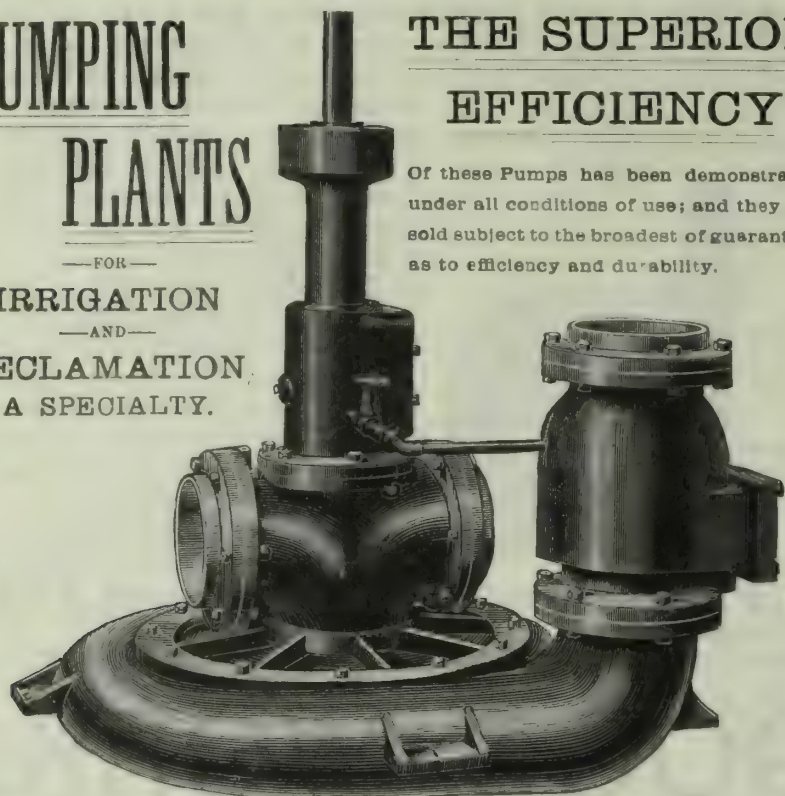
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The Situation as to Horse-Breeding.

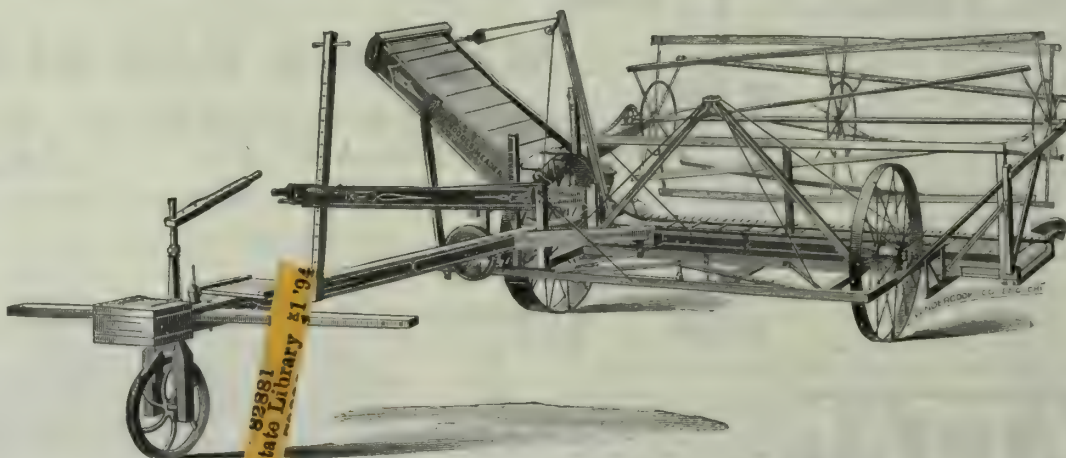
Before giving up the breeding of horses and declaring the business dead, will it not be well to take a candid practical view of the case, and before throwing away an advantage already gained, consider well what has brought on present conditions, whether the causes are likely to continue indefinitely, and if not, how best to take advantage of the change when it comes. Nearly every kind of business has had its boom and reaction during the last twenty years, and the horse business has been one of them. Its effects have been and are felt over a wider extent of country than almost any other business, because it is so intimately connected with every other. Many breeders attribute the present condition of the horse market to over-production, and the introduction of electricity. The over-production has been entirely of the cheaper grades, and this class is what is being displaced by electricity. Electricity can never take the place of the heavy draft or fine coach horse. General business depression has had more to do with the fall in the horse market than anything else. Nearly every one is economizing and doing without or making the best of what they have. That this condition will last long no one believes. A renewed demand is among the certainties of the future. When this fresh demand comes there will be a short supply to meet it, because of the falling off in breeding for the past three years and the probable continuance of it for a year or two to come. Horses, as a rule, are short-lived animals. The visible supply is being used up at a very rapid rate, and the fact that it takes five years to produce a horse ready for market is lost sight of by the croakers who are now and have been for three years crying the horse business down. Another fact is that the best time to engage in the production of any staple commodity is when it is down and not when it is booming. So many farmers have learned by sad experience that they cannot produce salable horses from ordinary stallions and have given up the attempt, that the chance for those who can and do raise first-class horses in the future will be greatly improved. Taking past experience and a candid view of the future of this country, it would seem that now is the right time for those farmers who are favorably situated to take hold of high-class horse breeding in earnest. They can now secure a choice selection of mares at moderate cost and buy first-class stallions at "rock-bottom" prices. The latter can now be bought cheaper than they are likely to be again for years, for the reason that this year will about use up the stock of imported stallions on hand and good ones cannot be imported to sell at prevailing prices. Think on these things. Should not, under the circumstances, the owners of mares be more particular than ever in their choice of stallions and breed more judiciously than ever for the inevitable future market? The present conditions are simply the result of bursting boom bubbles. This country is not going to destruction; business is settling down to a sound basis, and a healthy reaction is sure to follow. A revival in general business will bring a quick and strong demand for horses, and the man who then has good ones can name his own price for them. The main point in breeding is the choice of a stallion, and care should be taken to buy only the best and from a reputable importer.

There has been lately landed in San Francisco the finest lot of imported Percheron and French Coach stallions ever brought to the Pacific Coast. This stock ranges in age from two to six years, and was selected in France by the veteran importer, Leonard Johnson, who for many years was foreign buyer for M. W. Dunham, of Wayne, Ill. Mr. Johnson has personally selected and brought to this country over Two Thousand Horses, and is universally acknowledged to be the best judge of Draft Horses in America. Each animal in this lot is a good one, not only individually, but of the best possible breeding, as is attested by the certificates of registry in both the Percheron stud-books of France and America. A satisfactory guarantee given that each stallion will get sixty per cent of colts. This is a rare chance to get a first-class stallion, as no such stock as this has ever been offered for sale here at as low figures as this will be sold for. Time given on approved paper. STABLES—Close to Midwinter Fair, on Fifth avenue, opposite Race Track, next door to Scott & McCord's Feed Store, San Francisco, Cal. Take Geary street car. For further information and catalogues, address the Secretary of the American Percheron Horse Breeders' Association, S. D. THOMPSON, OCCIDENTAL HOTEL, SAN FRANCISCO.

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Vol. XLVII. No. 22.

SAN FRANCISCO, SATURDAY, JUNE 2, 1894.

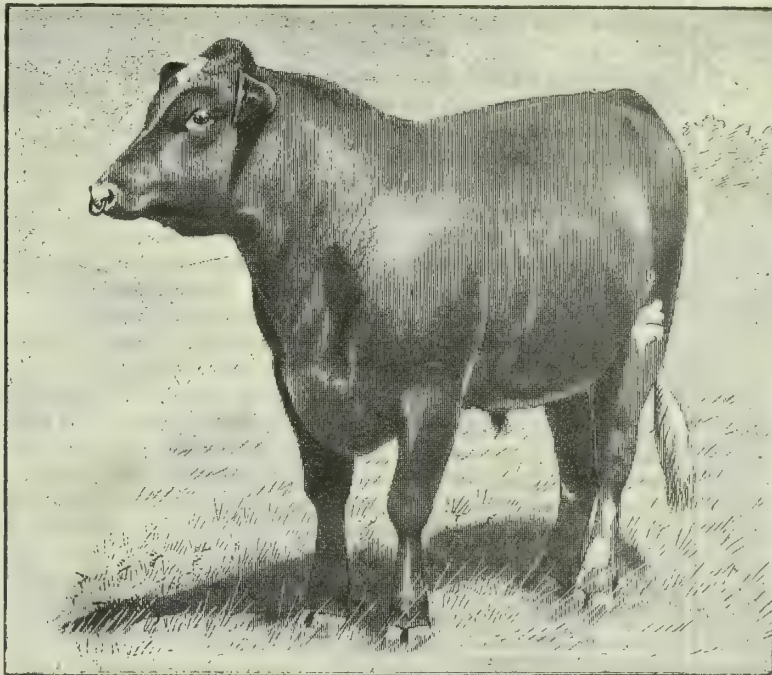
TWENTY-FOURTH YEAR.
Office, 220 Market Street.

A Princely Hereford.

Our readers have not heard much of late of the Herefords, but we judge it is time to make another allusion to this famous beef breed, for we know that an order for a young Hereford bull lay for some days in the hand of one of our local dealers before it could be satisfactorily filled. To tell the truth, we apprehend that some of our breeders of choice breeds have lowered their standards a little and possibly have become a little careless since the quiet times began and prices fell so low. There is a temptation to relax effort, of course, when values decline, and yet this is the very worst policy and throws the breeder wholly out of the line of promotion when the revival comes. People who have bred carelessly, and allow their records to lapse, will find that they have nothing but common beef stock when the demand comes for animals with straight, true and trustworthy pedigrees. And this revival is sure to come. These world-beating breeds are not to be snuffed out by a decade of dullness in California; they will stand for centuries and progress upon the lines upon which their present excellence was attained.

But we intended in this place merely to show our readers a splendid Hereford, of which the *Breeders' Gazette* in a recent issue said: "A description of the bull is useless when Palmer's capital likeness is in evidence. The artist has caught him perfectly, coat and all, the picture lacking only breath, size and the rich coloring of the original to convey an absolutely correct idea of the bull's character. He is not as big as a barn and correspondingly bare, but carries his 2150 pounds in compact form on short legs. His broad burly body presents a wealth of flesh, hair and substance which throws the Hereford enthusiast into raptures, while in point of finish and disposition he is simply superb. He is as neat as he is thick, and is one of the friendliest of all the good-natured even-tempered animals on the farm."

The bull is Hesiod 2d 40679, owned by J. A. Funkhauser of Plattsburg, Mo., and he is counted by many of the best expert judges to be the best Hereford bull in America to-day. He has won a long string of prizes, but has no World's Fair record, because his owner, being one of the judges, could not, of course, show his own stock.



A POLLED SHORTHORN BULL, OTTAWA STAR.

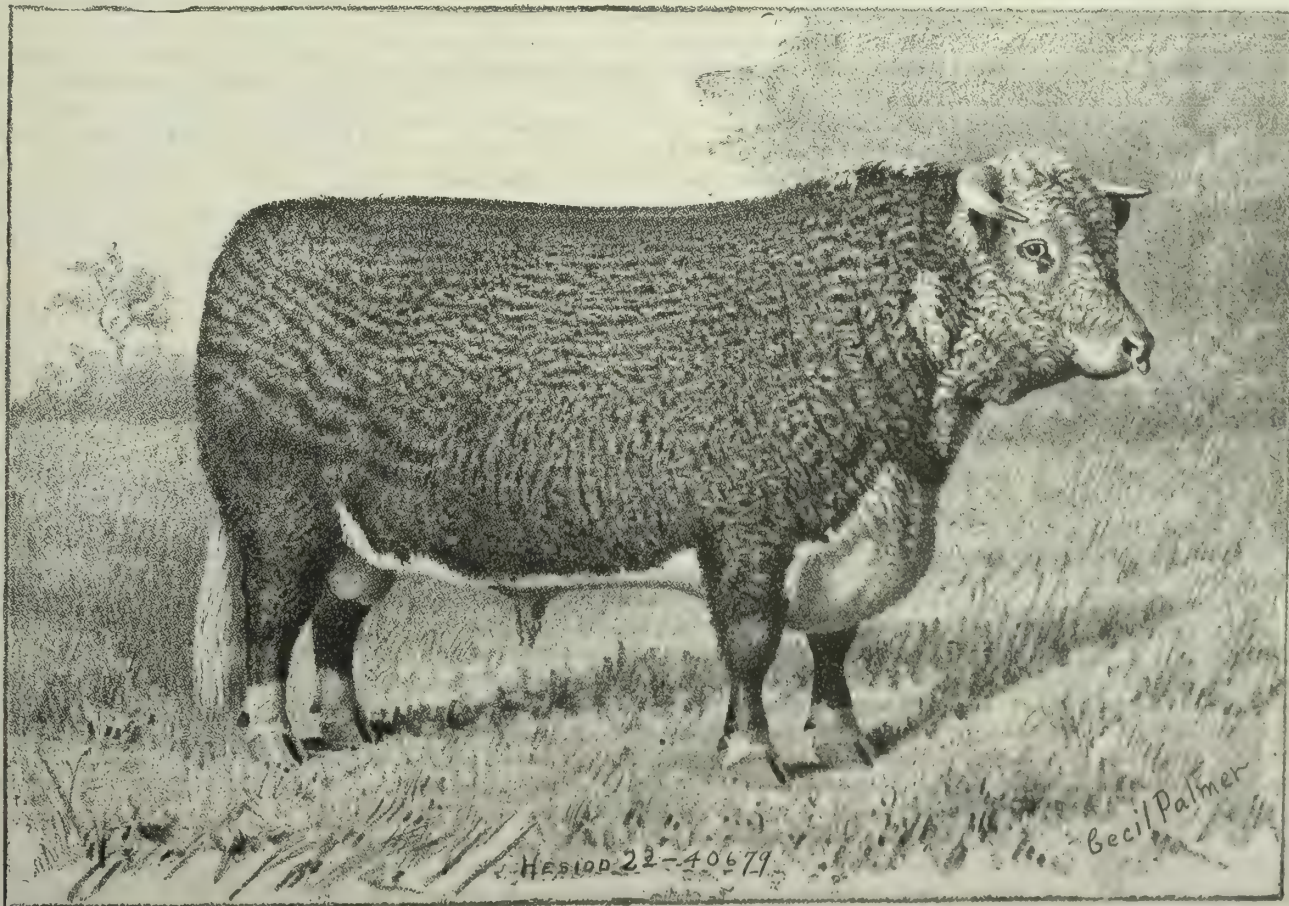
THE British Government in India has gone into the dairy business, to the extent of establishing dairy farms in places where troops are stationed, for their exclusive bene-

blood to one-sixteenth, while the offspring still maintained the desirable polled character.

It is a fact for breeders to ponder that it has been possi-

ble to dilute the original mulley blood so greatly and yet maintain the tendency to smooth polls. Very few calves of the later generation show horns. The prepotency of some bulls is so great that fully 75 per cent of their calves are polled when they are bred to long-horned cows.

The first engraving on this page shows a good representative of the "Polled Durham," which is the name chosen for the race. He is Ottawa Star 113109, standing at the head of a small herd owned by F. A. & J. W. Hills, Delaware, O. The owners are sons of Chauncy Hills, who for many years was actively engaged in rearing Shorthorns, and is keeping of late years a large flock of Shropshire sheep. While intro-



PRIZE-WINNING HEREFORD BULL, HESIOD 2D 40679.

fit. Frequent outbreaks of enteric fever having been traced to polluted milk supply, the dairy farms were established with manifest gain in the health of the troops.

ducing the new blood represented in the cut, with a view of joining the ranks of breeders of polled cattle, they have retained a number of females which trace back to stock imported or bred by Mr. Hills, Sr.

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ALFRED HOLMAN.....Editor
E. J. WICKSON.....Special Contributor

San Francisco, June 2, 1894.

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The Week.

California's latest indulgence in the unusual is proving, on the whole, rather pleasant. Such a rain in the last week in May should of course ruin everything, but it did not. Of course it soaked some hay, cracked some cherries, sanded some strawberries and so on, but it did so many other better things that nearly all people who were hurt in some things were helped in others to a greater degree, and such a rain goes on record as something different from a disaster. If we should have much more of this sort of experience, we expect some people would be radical and thoughtless enough to admit that California would after all be generally better for summer rains, but we hope this form of treason will never be indulged in.

It is rather a novel experience to have fields come to the last week of May almost arid and bare, and then get wet enough to plow and plant corn—and yet that is just what has been done within a week. People who move fast on such land can also sow beans, beets, carrots, sorghum, squashes, etc., if they have a retentive soil in a cool region and cultivate thoroughly. No doubt the rain will not only hold up much natural growth of forage, but will give to many catch crops which they hardly dreamed of getting this summer. And so people generally like the rains and speak well of them.

And here again comes in the comparison which is odious. The atmospheric disturbance which brought us gentle showers carried flood storms to Oregon and the Columbia river region and frost and snow to parts of the East. Whenever nature gets in motion, California usually takes the spring seat in the vehicle.

THE Senate has confirmed the nomination of Charles D. Walcott of Utica, N. Y., to be director of the Geological Survey in place of Major Powell, who has occupied the position for many years. The change has special interest to our constituency because of the relations of the Survey to the irrigation. We had the pleasure of acquaintance with Director Walcott many years ago and have watched his career since that time, and we are pleased to bear witness to his fitness for the important place to which he has been called. He has been with the Survey for a long period, and has been closely connected with its conduct. His promotion will give general satisfaction. He has intimate knowledge of agricultural affairs as well as abstract science, and will, we expect, give full attention to pressing Western problems.

Agriculture in Congress.

It seems very difficult for the throngs of lawyers in Congress to understand what the Department of Agriculture is and what it is for. We are not at all sure that they try to understand, but we grant them that much honesty as a gratuity. The misfortune is just as great either way.

It seems from Eastern exchanges that the appropriation of funds for the maintenance of the Department of Agriculture excited considerable discussion, and an outline of the speeches shows how great is the misconception of the work of the department and what interests are naturally enrolled against it. We read that at one of the sessions of the House the feature of the proceedings was an attack upon the monthly crop bulletins issued by the Department of Agriculture by Representative Marsh of Illinois. He denounced them as a fraud upon 30,000,000 of people of the United States, and said that they were issued only in the interests of speculators in farm products. He supplemented his speech with a motion to strike out the appropriation of \$100,000 for the gathering of the information contained in these reports and their publication, but this was defeated.

We would not do Mr. Marsh an injustice, but the fate of his proposition to abolish the statistical branch of the Department's work leads us to think that his motive was so conspicuous that his advocacy of the proposition was enough to kill it. Probably Mr. Marsh thinks that statistics emanating from Illinois are good enough for the grain-growing and bread-eating world, and it is a serious inconvenience to the Chicago statisticians to have government figures go out from Washington. Those great manipulators of values in Chicago could fix up things much more satisfactorily to themselves if they had a clear field. But Mr. Marsh and those of his opinion are a quarter of a century behind the times. It is clearly discerned now that an important question of any civilized government is to gather and promulgate industrial and commercial statistics which shall be wholly above all individual or class interests, and shall be, to the highest attainable degree, true and trustworthy. We do not claim that all the statistical exploits of the Department have attained their ideal, but we believe that their motive has been grossly slandered by Mr. Marsh, and that the people propose to have the work go on until the system and method of statistical work shall be the best attainable. They propose that the industries of the country shall be hampered as little as possible by the falsity and greed of great gambling centers like the metropolis of Illinois, and the way to ensure that result is to guard the purity of statistics to the utmost. No organization but the general government is a proper source for industrial statistics. It should unquestionably be arranged that the government statistician should not be subject to the political changes at Washington. They should be experts of the highest rank and should serve for life unless impeached for good cause.

But though Congress seemed to perceive the shallowness of Mr. Marsh, they did not, or would not, detect the same quality in other reformers of the Department. We read as follows:

A large portion of the afternoon was devoted to a discussion of the distribution of seeds by the Department of Agriculture, and after a vigorous fight, led by Pickler of South Dakota, Ray of New York and Wilson of Washington, an increase of \$30,000 was made in the appropriation for this purpose over the amount recommended by the committee in the bill, thus making the appropriation \$160,000.

Mr. Wilson said that the appropriation for the distribution of seed was about the only one that really benefited farmers. They were not interested, and the knowledge was of no value to them, in pathology, ornithology, mammalogy, pomology and the rest. Whether or not some bird of the paleozoic age was or was not supplied with teeth was of no possible consequence to the farmers. What they wanted was something practical to improve their condition, and, so far as he was concerned, if this part of the bill was to be cut down, he was of opinion that it was time to sing the doxology for the Department of Agriculture.

This shows in a most glaring manner the ordinary Congressional misconception of the scope and value of the Department. We find high praise and a mass of money for a branch of work which as pursued for years has been a crying abomination. Every head of the Department for years has endeavored to free it from the evil of Congressional seed distribution, and still the waste of money goes on because Representatives like to shower their districts with their seed perquisites. The Government should continually search the world for new seeds and new plants, and secure their introduction and acclimatization, but to pack up common seeds for free distribution is wrong. The country has been flooded with poor seeds and lively weeds, because Congress has insisted that the Department should furnish so many thousand parcels to each Congressman, and the conditions have resulted in the purchase and distribution of trash which no self-respecting seedsman would admit to his premises. The distribution of new seeds and plants should go on, for in this way much value has been

secured, but the debasement of the business should be made impossible.

The exaltation of this seed business and the cry against the new and valuable work which the Department is doing in the study of animals, birds and insects destructive to crops and the other chief divisions of its work, show how lamentably ignorant the Congressman is on the whole subject. The unutterable nonsense of Wilson of Washington as to some geologic bird should bury him beside the fossil he maligns. Such things as he means to cite are not pertaining to the question at all. The most practical information in agriculture nowadays is that which is brought in from the frontiers of scientific investigators of all agencies and phenomena which affect the farmer's work and the nature of which he is himself powerless to secure. While Mr. Wilson is waving his ears in the District of Columbia, his constituents in the newer Washington are groping along trying to learn the conditions of a new country and to master the difficulties which beset the experimental cultures and new industries they are trying to establish. The new States have most need of the work of the Department in the sciences underlying agriculture and if the Representatives of such States would demand that the government money should not be frittered away on cheap seeds, but should be given to industrial exploration and experimentation in the new States, they could do something to advance the prosperity of their constituents and make their States better known and appreciated.

But we despair of such action. Until agriculture can be decently represented in Congress it is not likely that Congress will understand agriculture.

The Cottonseed-Oil Monster.

Our olive-growers, who are striving against the sale of cottonseed oil under the guise of the finer oil of the olive, should know what a great interest they have to antagonize and shape their effort accordingly. The Baltimore *Manufacturers' Record* of May 15th publishes a history of the growth of the cottonseed-oil industry in the South. In 1880 there were forty cottonseed mills, with an aggregate capital of \$3,500,000. There are now 300 mills, having a combined capital of about \$30,000,000. At present about 1,500,000 tons of seed are annually used by the mills, yielding to the farmers about \$18,000,000 a year for a product which until recently was regarded as waste material. The total output is about 1,500,000 barrels or 60,000,000 gallons of oil, 500,000 tons of cottonseed meal, 750,000 tons of hulls, and 30,000,000 pounds of linters, the aggregate value of which will average about \$30,000,000.

We give upon another page an outline of two irrigation propositions which have taken the form of Congressional bills. Still another is reported by telegraph which is said to please the irrigation experts at the capital better than any previously introduced. It originates with delegate Joseph of New Mexico and provides for the appointment of an irrigation commission to consist of Government engineers to supervise the work. The Secretary of the Interior is authorized to have geological surveys made and maps prepared for the use of the commission. Three per cent bonds are to be issued to pay the expense of the work. Whenever a sufficient amount of arid land has been irrigated, it is to be opened for settlement and sold to heads of families for ten per cent above the actual cost of reclamation. The bill also provides for the sale of timber on the public domain in square quarter-sections to the highest cash bidder. The description of the measure thus given is too meager to warrant any opinion of its feasibility. We shall have more of it later.

For Moles.

TO THE EDITOR:—Can you tell me how to kill moles? This season being so dry, whenever you irrigate they plow up small plants and it's almost impossible to plant anything in the shape of small plants or seeds and not have them ruined. A florist advised me to watch morning and evening and when they were at work to dig down two spades, one in front and the other behind, and throw them out. During two years all I have caught is two, because that is as many as I have ever seen working. They work at night. E. A. BONINE, Lamanda Park, Los Angeles Co.

Most mole-killers use either the method described or the mole trap, which is an arrangement for plunging a fork into the body of the animal as he raises the ground against the trigger which sets free the spring. The mole trap is usually satisfactory in firm ground, where the mole has to raise the surface as he plows along in a shallow temporary runway. In soft ground the shovel method is generally used.

The latest treatment we have heard of, and for which much is claimed, is to make holes in the runways with a sharp, round stick and pour into the runway about a gill of kerosene at each of the openings, which are made about a rod apart. We have not had occasion to try this, and simply give the recipe for what it may be worth. Judging theoretically, we should consider it possibly effective, because of the well-known keen scent of the mole which coal oil might be expected to offend. He ascertains the presence of his prey largely by scent, and coal-oil vapor, which is quite pungent and persistent, might seriously interfere with his business. We would like to hear of any trials of coal oil which may be made.

From an Independent Standpoint.

In the Populist convention at Sacramento, after a very warm fight, Mr. J. V. Webster won the day. He got a majority of the votes on first ballot and on motion of his principal competitor, Mr. Fowler of Fresno, was declared the unanimous choice of the convention for Governor. To the party at large Mr. Webster will unquestionably be a very acceptable candidate. He is a man of earnest nature and profound convictions, and his ardent and combative temperment fairly represents the spirit of the Populist movement. He is the sort of man who has an opinion for which he would fight or die on any subject that can be named, is not readily moved by arguments and is entirely beyond the reach of persuasion. He has a strong but undisciplined mind, and his reading, while wide in its range, has been of a sort to stimulate his partisan and passionate tendencies. He is a man whom one must always respect and like for many excellent qualities both of mind and heart, but whom it is very often impossible to approve. In debate he will be a hard man to meet, for he has all the resources for bitter and effective controversy, including the love of a fight for its own sake.

Before the public in general, Mr. Fowler would probably be a stronger man. He has scholarship, a cultivated manner, moderation and refinement of speech and the judicial pose of mind. Such a candidate would win to the cause of Populism hundreds, possibly thousands, from the old party ranks who are kept away from it by its radical and passionate aspects. But, in truth, whatever the future of the party is to be—and the *RURAL* believes that the victorious political force of the next decade will grow out of it—it is not ready at this time for such leadership as Mr. Fowler would give it. It is now doing the rough work of agitation which precedes reorganization upon practicable lines—just as abolitionism preceded and cleared the way for Republicanism—and for this hard work something stronger than smooth manners and something warmer than exact judgments is essential. While Mr. Webster will frighten away a good many conservative persons who would have given their support to Mr. Fowler, he will, unquestionably, make a noisier campaign and will rouse in more people the inquiring state of mind which precedes effective political organization on new lines.

The platform endorses the Populist statement of principles put forth at Omaha two years ago; demands the initiative, the referendum, the imperative mandate and proportional representation; favors municipal ownership of gas and water systems, street cars and other public utilities; favors nationalization of railways and telegraphs; favors postal savings banks, compulsory education with school supplies at public cost; demands an eight-hour day, abolition of the contract system on public works, sanitary inspection of mines and increase in liability of employers. Coming down to the financial question, it declares that "contraction of money in circulation has reduced the prices of all products about one-half," and demands a reduction of twenty-five per cent in the salaries of all State and county officials; demands repeal of the national bank laws, a new issue of treasury notes and free coinage of silver at the ratio of 1 to 16. It pledges such a reduction in State expenses as will save the public \$2,000,000 annually and to do away with the pernicious fee system. Its miscellaneous provisions call for the ballot for women; for a graduated income tax upon incomes over \$20,000 per year for the benefit of kindergarten schools; demands employment of the unemployed by the Government; opposes all propositions to sectarianize the public schools; declare it unseemly for any flag save the stars and stripes to fly over public buildings. It opposes the Olney bill extending time of payment of the Union Pacific debt; favors construction and ownership of the Nicaraguan canal by the Government; recommends absolute prohibition of Chinese and Japanese immigration. On the liquor question it declares practically for local option under the principle of the initiative and referendum. The final clause ordains that in no future convention of the Populist party shall any office-holder have a seat; and opposes fusion with any other party. No direct reference is made to the tariff question—a very remarkable omission.

Upon this platform the following ticket will stand: Governor, J. V. Webster of San Luis Obispo county; Secretary of State, M. McGlynn of San Francisco; Controller, John S. Dore of Fresno; Treasurer, F. N. Barton of Placer county; Attorney-General, Louis Luekel of Los Angeles; Supt. of Public Instruction, T. F. Bassett of Shasta; Clerk of Supreme Court, L. M. Landsborough; State Printer, E. C. Hurlburt; For Judges of the Supreme Court, E. W. Gibson of Oakland and H. M. S. Buck of Humboldt, Thos. V. Cator was enthusiastically endorsed for the U. S. Senate.

All the conditions which make political discontent at this time lend force to the Populist movement. Foremost of all is the financial question. It is now a general conviction that whichever of the old parties elects the President, the gold-standists are sure of a champion in the White House. The failure of Mr. Cleveland to keep the promises made during the Repeal fight last year has disheartened many Democrats, just as the continued devotion of the Republican leaders to the money interest has disheartened many Republicans. And as the hope of relief in the matter of financial legislation at the hands of the old parties dies out, the sentiment for bimetallicism increases. More and more the people of the United States are becoming convinced that we shall not have normal times and equal justice until a new money system including an enlarged use of silver shall be established; and more and more it is growing in the public mind that the work of financial reform must be the business of a new political organization. The old parties have too many entanglements to take up the job in a way to carry it out successfully. The Democratic party is not strong enough to go straight to the mark against the protests of Cleveland, Whitney, the Standard Oil Company, Tammany Hall and its other conservative elements. The Republican party is in precisely the same position. No matter how smoothly either of them talks its platform, there is in the public mind small hope that the success of either will in fact involve a determined aggressive fight with the great financial powers of the earth for the rehabilitation of silver.

In the matter of the Nicaraguan Canal, neither of the old parties is acting in good faith. Both have declared for it but neither does anything in the way of really promoting it. The plain truth is that every dollar invested in railroads in this country is opposed to the canal project; and that is the reason why all the canal bills offered in Congress are of an impracticable sort. It is not desired, in the political world, that the canal should be built, and the purpose of the bills put before Congress is not to promote the project, but to defeat or delay it. All this, gradually dawning upon the public mind, makes another cause for discontent with the old parties.

The tariff question has been the paramount political issue for years, but neither party has taken any steps toward settling it on a practical and satisfactory basis. When the Republicans were in power they made a law which cannot be defended, because it gives special advantages to special interests and favors the organization of trusts. Now the Democrats are in power they propose to swing the pendulum as far the other way, and in attempting to do it, have plunged the country into industrial distress. Both parties seem to be seeking, not a satisfactory and permanent settlement of the matter, but such a temporary adjustment as will serve to shape things right for the next election. They study, not to promote the public welfare, but how to confound the opposition party.

Coming to the new questions—nationalization of railroads, regulation of laws affecting rights of labor and capital, etc., etc.—the old parties are silent. They are afraid to leave the beaten track, to reach out in new lines; and they seek to stifle the new issues and to hold back the progressive thought of the times. And this past year of stress has marvelously promoted progressive thought. Many who till now have been deaf to all appeals for social or fiscal reform, content with their own well-being and indifferent to all else, have been taught by hardships personally suffered that there are harsh inequalities and bitter cruelties in the present order of things. Whoever has gone much among the common people—among those who live by the sweat of their own and not of other people's brows—knows that in this year 1894 there are widely maintained some views relative to the rights and wrongs of our property system and the responsibilities and duties of government which a brief while back would have been called absurd and heretical. Seasons like this of the past year open up new horizons and make new political motives—all of which must, to a greater or less degree, profit any political movement which promises earnestly to make things better.

These conditions and considerations, with others which could be named if it were worth the while, explain why the Populist party exists and why it is growing. It attracts not all, indeed, who are discontented with their old affiliations, but some of them, and it gains perceptibly as a political force. In 1892 it polled in California 25,311 votes out of 269,586, or a little less than 9½ per cent. This year it will do better—it may possibly double its vote—but anything like positive success is hardly to be considered as a possibility. It may succeed—probably will—in times to come; but it will not be until it has pruned down its principles to a shape which prudent men will deem safe, and until it shall learn to choose for its leaders men sound

in knowledge, moderate in temper, fair in mind and wise in judgment. This is a development yet to be attained.

The first State to vote this year is our neighbor Oregon, and the day is Monday next. The interest natural to such an event at such a time is heightened by the fact that the contest is practically between the Populist and the Republican parties. The Republican candidate for Governor is Judge Lord, a man of high character and attainments, and his Populist-Democratic opponent is Nathan Pierce, who as a fusion candidate for presidential elector carried the State for Weaver two years ago. The fight is being hotly waged. Pennoyer, who is serving his second term as a Democratic Governor, and Boise, formerly a Republican chief justice of the State, are assisting Pierce in his campaign. On the other hand, Lord has the support of the conservative men of both parties. Whatever may be the result as to the governorship it is scarcely to be doubted that both Republican candidates for Congress will be returned. The material interests of the State—now sadly depressed—are bound up in the Republican tariff policy, and it is believed that irrespective of party the people will take this occasion to fire a loud gun—the first in the fight for the 54th Congress—for the cause of Protection.

It seems a hard lesson for the labor unions to learn that the right to labor is as sacred as the right to strike, and that when this right is denied the whole power of society must be called to its defense. At Cripple Creek, in Colorado, and at various places in the coke regions of Pennsylvania, union strikers are violently using men who voluntarily take up the work which they have voluntarily laid down, and several bloody collisions with the authorities have resulted. In such cases such collisions are inevitable, for it is a duty which Government owes to its humblest citizen to protect him in the right to do any legitimate work he may choose to do. To fail in this would be to fail in the fundamental obligation of protection which is the primary motive for the existence of government. In attempting to deny this right to non-union men the strikers seek to put the rules of their Order above the laws of the land; and they thus array against themselves that vast body of patriotic and humane sentiment which always stands for law as against license. Nobody of sense denies the right to strike—to quit work singly or in a mass if its terms be not satisfactory, but the right to do this implies the equal right of the next man who comes along to take up the rejected job if it suits him. The right to strike is no whit more sacred than the right to work; and it would be a sad day for mankind if either the one right or the other were to be lost.

Crops and Markets.

We quote the following from Bulletin No. 6 of the State Fruit Exchange, dated May 30th.

Apples.—Are uneven, but appear generally to promise well.
Apricots.—Show rather an improvement, as even in the districts most injured by frost there will be more fruit than was at first reported.
Cherries.—Are gone in the earliest districts. In the later Black Tartarians have been badly cracked by the rain in some cases, and in others not seriously. There is no doubt, however, of considerable injury. In the later districts the Royal Anns are not reported as far enough along to crack.
Grapes.—Are not far enough along to judge of. They have been injured by frost in some places.
Peaches.—Will certainly be a very large crop.
Pears.—Are not reported as so good this week. They are doubtless dropping, and opinions differ as to whether, on the average, it amounts to more than a proper thinning.
Prunes and Plums.—Are of course reported a little more cheerfully as the fruit grows larger. The rains are materially helping this crop.
Almonds.—Seem to promise the largest crop we have ever had.
Olive.—Are blossoming well everywhere.
The rains have materially helped all fruit crops except such as are now ripe. In some parts of the Santa Clara valley the accompanying winds did considerable injury.
Eastern Crop Reports.—We have many reports of crop conditions at the East, which are somewhat conflicting, but the weight of evidence favors a large crop of fruits, except peaches in the Southern States. There are reports of injury done by late storms in the Northern States, especially New England, but it would be surprising if any storm at this season of the year could materially injure a well-set crop of apples.

Market Report.

FRESH FRUITS.

Cherries seem to have been arriving East generally in good condition, and have sold at auction at from 40 cents for Rockports to \$1.95 for Black Tartarian, which are the extremes that have come under our notice. Black Tartarians have generally run from \$1 to \$1.50. Some sales to packers are reported, ranging from 2½ and 3 cents for Black Tartarian to 4 cents for Royal Ann. At 4 cents a pound for cherries in bulk, the cost to the shipper from common points to Chicago is about 90 cents for full 10-pound boxes, exclusive of commission, which, of course, varies with the price received. This allows 1800 boxes to the car, which, as a prominent shipper informs us, is as much as is safe to load in a so-called 12-ton refrigerator car.
Apricots.—Much less buying of fruit for drying is reported this week, \$20 per ton having been reported from one southern county.
Peaches.—The same county reports \$12 as offered for peaches. We hear of no offers from canners for peaches or apricots.
Prunes.—It has also been a dull week in prunes, one sale only

at \$50 having been reported from Santa Clara county. The rains appear to have stopped all transactions.

DRIED FRUITS.

The lots of dried fruits and raisins remaining in growers' hands are too few to justify taking space in the BULLETIN for prices of the crop of 1893. If growers still having fruit on hand will communicate with us we will give them the condition of the market. It is the opinion of all that the crop of 1893 will be consumed before the new crop comes in, but from now on sales are likely to be slow and prices uncertain. It must be remembered that the increasing efforts, not only of ourselves but of Eastern growers, to push fresh fruits into the smaller markets, tends to produce a yearly increasing competition with the last of the dried fruits of the preceding year. The prices of the remaining stocks of dried fruits will be affected largely by the views of buyers as to prices of new crop. No one will take much risk of carrying stock over at prices higher than the new crop is likely to bring. There is now almost no sale for less than carload lots of prunes in this city.

Our latest Chicago quotations are:
2-crown raisins, bags, 3 cents=\$1.80 f. o. b. coast.
3-crown " " 3 1/2 to 4 " = 2.30 " "
4-crown " " 3 1/2 to 4 " = 2.55 to 2.80 " "

(50-pound boxes about the same.)

3-crown London layers, 85 cents.
Prunes moving slowly about as follows:
4 sizes, equal quantities, 6 1/2 cents=\$5.05 f.o.b. coast.
50-60 " " 7 1/2 to 8 " = 6.30 to 6.80 " "
40-50 " " 8 to 8 1/2 " = 6.80 to 7.30 " "

All the above subject to usual commission. Market much weaker than a month ago.

In regard to the prices of the crop of 1894 there ought to be at present no serious thought on the part of growers. The business in hand now is to bring the crop to maturity in the best possible condition. If there is one thing sure in this world it is that poor fruit will be cheap. If at any time we quote very high prices for dried fruits, it will most certainly be for fruit of a quality to compete successfully with canned goods on the tables of the well to do. When two weeks since we spoke of the orders firm in hand in this city for two carloads of apricots at 15 cents or as much less as they could be had for, they were for a new foreign market, and the goods desired were the large, rich, meaty fruit grown by thorough-going orchardists, and put up by men who understand their business. There is no doubt whatever that a large foreign and domestic trade for that kind of fruit can be got and kept at prices approaching that figure, but upon that basis the little, white, skinny, curled-up fruit that comes from half-cultivated, unthinned orchards, might not bring seven cents—and be dear at that. By watching our reports it will always be noted that the best prices for fresh fruit are offered in the most wide awake and best organized fruit countries, and they are offered there because orchardists have deserved that by proper cultivation and thinning and careful curing. They can obtain for their dried fruit prices to correspond.

No one can with any safety predict the average prices of any dried fruit for this year. We begin to know fairly well what we have to sell, but we do not know well what we shall have to compete with, nor do we know whether the market we shall sell in will be better or worse than now; nor on raisins and prunes do we yet know certainly what the tariff will be. The sound, safe business principle for all farmers to work on, either this year or any other, is to produce the best fruit possible, get ready to dry it, and, when dried, sell it. We shall by that time know what it will bring. If, in the meantime, he can sell his best sizes for canning or shipping, at rates which, added to what he can probably get for his dried culls, pay him a living rate, let him do so. That is done in all those districts in which fruit-growers have money or credit to harvest their new crop without mortgaging it by advances. When a grower has produced fairly large fruit, is prepared to dry it, and knows how to do it well, he is independent. One year with another, the selling fruit fresh for drying, before the pits are hardened, and especially the lumping of orchards, will result in loss to growers. Of course they occasionally make good trades, but all the chances are with the buyer.

The market for dried apricots will soon "open," and the first goods offered will be those bought by dryers in the southern counties at from \$18 to \$25 per ton, or at lump sums for the orchard.

Fresh and Dried Fruit Prices Compared.

Many growers are at a loss to know, when offered prices for fresh fruit, what prices they must get from dried fruit to pay them equally well. The following table, compiled last year from the experience of the West Side Fruit-Growers' Association in Santa Clara county, will be found a fair guide:

FRUIT.	EXPERIENCE OF THE WEST SIDE ASSOCIATION.				Net average prices per ctn. realized for dried fruit, after paying all expenses.			
	Equivalent net prices per ctn. of dried, compared with prices per green ton, on basis of shrinkage of 1891.				1891.			
	Cost of drying per dried pound.....				1892.			
Pounds green to make one dry.	1891.	1892.	1891.	1892.	1891.	1892.	1891.	1892.
Moorpark apricots.....	5 1/2	6 1/2	9 8 1/2	11 12	13 81	15 12	\$7 35	\$15 00
Other apricots.....	6 1/2	7 1/2	11 37	12 91	14 10	16 66	6 50	13 13
Early peaches.....	5 1/2	6 1/2	9 75	11 12	12 50	13 37	5 50	11 00
Late peaches.....	5	6	9 00	10 25	11 50	12 75	None dried.	Not sold.
French prunes.....	2 1/2	3 1/2	4 56	5 19	5 83	6 46	\$5 3 1/2	\$8 87 1/2

† The prices given for prunes are for the four sizes. The general average will vary a little either way in different years as the prunes run large or small.

The above table was prepared for Santa Clara county, where, except for peaches, rates less than \$30 per ton for fresh fruit seldom need to be computed. For the benefit of less ambitious districts we add the equivalent prices at \$20 and \$25 per ton, viz.: At \$25 per ton—Moorpark apricots, \$8.56; other apricots, \$9.81; Early peaches, \$8.37; late peaches, \$7.75; French prunes, \$3.87.

At \$20 per ton—Moorpark apricots, \$7.25; other apricots, \$8.25; early peaches, \$7; late peaches, \$6.50; French prunes, \$3.25.

The meaning of this is that the buyer who pays the named prices per fresh ton must get the corresponding prices per dry pound net to get even, provided his shrinkage is the same, as well as his expense of drying and sacking. Interest at 8 per cent on plant and something for depreciation is reckoned in cost of drying. The grower who, with his family, do the work, and who reckons no interest on drying ground or plant, and allows nothing for depreciation, would, upon the face of it, save most of the cost of drying.

In regard to shrinkages, growers must estimate for themselves, as they vary more or less. The greatest variation is among the different varieties of peaches, as to which we refer to the experience of the Campbell Association in Bulletin No. 4 (May 16th).

The shrinkages of the East Side Fruit-Growers' Union of Santa Clara County for 1893 were as follows:

Apricots (all varieties).....	5.56 to 1
Peaches " " " " " " " "	6.04 " 1
Pears " " " " " " " "	7.11 " 1
Nectarines " " " " " " " "	8.00 " 1
French prunes.....	2.66 " 1
Silver prunes.....	3.18 " 1
German prunes.....	2.86 " 1
Egg plums.....	4.98 " 1

Crop Condition and Outlook.

Reports of the Recent Rains.

Following is a synopsis of the crop bulletin for the past week issued by Director Barwick, of the State Weather Service:

The average temperature for the week ending May 28th was: For San Francisco, 57°; Eureka, 50°; Red Bluff, 66°; Sacramento, 63°; Fresno, 68°; Los Angeles and San Diego, 60°. As compared with the normal temperature there was a deficiency of heat over the State, being 2° at San Francisco, 4° at Red Bluff, 3° at Sacramento, 2° at Fresno, 5° at Los Angeles, and 3° at San Diego. The rainfall shows an excess above normal for northern and central California and a deficiency over southern California. The excess being at San Francisco, .52 of an inch; Eureka, .06 of an inch; Red Bluff, .29 of an inch; Sacramento, .66 of an inch; Fresno, .03 of an inch, while Los Angeles and San Diego were deficient .07 of an inch each.

The cool and partly cloudy weather with rains have greatly helped all summer crops as well as late sown grain, and while all grain crops as well as hay will be short they are much greater than would have been harvested were it not for the most favorable weather for these crops.

On the other hand, cherries were almost ruined in the early fruit belts of the State and but slightly injured in the later districts. Some fruits were knocked off by the high winds, also some wheat lodged, and considerable hay damaged by the extraordinary rains during the latter end of the week.

High temperature 96° at the Agricultural Experiment Station near Tulare City, Tulare county. The lowest being 37° at Hydesville in Humboldt county.

SISKIYOU (Ager)—Weather good for growing crops. Some damage done to young trees and fruit on the 25th by the severe winds. Rainfall, .19 of an inch. Highest and lowest temperatures, 88 and 44 deg. (Yreka)—Fall-sown grain is heading and looking fairly well, with prospects of an average crop. Late-sown spring grain benefited by the late rains, but will not amount to much. Rainfall, 1.27 inches. Highest and lowest temperatures, 90 and 38 deg. (Fort Jones)—The rains very acceptable to the farmers of Scott valley.

DEL NORTE (Crescent City)—Grass is good throughout the county, and grain is looking fine.

TRINITY (Trinity Centre)—The weather very beneficial to the grass and grain crop.

HUMBOLDT—Heavy dews, with rains occasionally, cause everything to look well. Strawberries ripening. Rainfall, .17 of an inch. Highest and lowest temperatures, 70 and 37 deg.

LAKE (Upper Lake)—Cool, cloudy weather very beneficial to hay and grain, which bids fair to be an average crop. Fruits of all kinds look well. Vines very flourishing. Corn planting is well under way. Hop-growers report the prospects very good. Rainfall, .04 of an inch. Highest and lowest temperatures, 77 and 46 deg. (Middleton)—The cool, cloudy weather of the past week has greatly benefited the growing crops. (Kelseyville)—Prunes and pears, the leading fruits of this vicinity, were cut short by the frost, and not more than half a crop will be harvested. The quality will be excellent.

MENDOCINO (Covelo)—Rainfall, .14 of an inch, and for the season 46.29 inches. Crops look well. Haying begun. (Ukiah)—Recent rains injurious to hay and pasturage, but a great benefit to grain and summer crops. Rainfall, .79 of an inch. Highest and lowest temperatures, 79 and 43 deg.

TEHAMA (Red Bluff)—Haying retarded by the cloudy weather. All fruits doing well. Rainfall, .11 of an inch. Highest and lowest temperatures, 85 and 52.

BUTTE (Chico)—Crops and fruits continue fair. The wind and rainstorm injured cherries, apricots and cut hay; damage only nominal. (Gridley)—Fruit and cereal crops still improving. Slight damage to hay from the rain, which amounted to .92 of an inch. Highest and lowest temperatures, 87 and 56 deg. (Oroville)—Hay cutting about finished, and the crop is a fairly good one. Fruit outlook in this county is for big crops. In a few localities the fruit was slightly damaged by frost, but 90 per cent of the orchards in the county will bear good crops, both deciduous and citrus. The olive trees are white with blossoms, and unless injured by north winds the olives will produce a bigger crop than they ever have before.

GLENN (Willows)—Summer-fallowed grain around Butte City will be as good as it ever is, and will turn out better than any part of the plains in this county.

SUTTER (West Butte)—Heads of late-sown grain are so heavy that it breaks the straw and falls to the ground. Blackbirds have destroyed much of the early-sown barley. Potato crop light and small. Rainfall, .13 of an inch. Highest and lowest temperatures, 86 and 55. (Yuba City)—The rains have greatly benefited the grain fields. Some fields which looked as though they would not pay for harvesting will now make a fair crop, and almost anywhere in the surrounding country can be seen splendid fields of wheat, heading out thick, with good plump heads of good color. Late barley looking extremely well and will make a fair crop. In the orchards and vineyards the trees and vines have almost doubled their rich green foliage, and the fruit is swelling rapidly, and early varieties showing signs of ripening. Vegetables and garden truck also receives an impetus in growth by the refreshing rains, and the general outlook is much improved.

YUBA (Wheatland)—The large quantity of hay cut will be seriously

damaged by the rain and winds of the last few days. Grain, where heavy, is badly lodged; otherwise it will be benefited, especially the late sown. It is feared the cherries are badly damaged and picking had to be suspended. Rainfall, .61 of an inch. Highest and lowest temperatures, 80 and 51. Indications are that Bear river hop yards will yield but half a crop. Hops which were trained early are already in burr and the vines have stopped growing.

PLACER (Newcastle)—Fruit thinning going on. Berries and cherries being shipped. The rains have benefited the meadows and have done no serious injury to fruits. Rainfall, .31 of an inch. Highest and lowest temperatures, 78 and 48.

SACRAMENTO (Sacramento)—The rains have done more harm than good. The cherry crop is ruined by being split open. New straw-berries are scarce, but will be plentiful in a few days. Cut hay not cocked will be badly damaged. All late crops and potatoes greatly benefited. Highest and lowest temperatures, 77 and 51 deg. Rainfall, .76 of an inch.

YOLO (Dunnigan)—Tule land grain coming out finely and with favorable weather from now to the middle of June a good crop is assured. Some farmers are still plowing and sowing wheat and barley on the tule lands. The plowing is done as fast as the water recedes and the grounds get in condition. Buckwheat will be harvested early in June, and the next crop sown in August. Milling or May corn is still being sown. (Davisville)—The apricot crop will be considerably larger than last season. (Esparto)—Haying completed and crop small. (Winters)—Grain is coming out in fine shape. Every day improves the prospects, as the damp, cool weather came in the very nick of time.

SOLANO (Vacaville)—Fruit crop generally improving every day. Cool weather very beneficial to all crops. Cherry shipments about over and apricots are being shipped in car lots. Hay, being nearly all cut, was badly damaged by the rains. (Denverston)—Haying in full blast and crop very short. Rainfall, .80 of an inch, which is likely to do serious damage to fruit and hay.

NAPA (Yountville)—Haying begun and better than expected. Cherries somewhat damaged by the rains. Grape crop will be short on account of damage from frost of a week ago. (Monticello)—The grain fields are looking fine in this valley and will make a good average crop, though hay will fall short of last year's crop, and that was only about one-third of a one.

SONOMA (Forestville)—Even temperature has caused rapid growth of all cereal crops and other farm products. Rains damaged hay laying in windrows and also the cherry crop to some extent. Peach thinning about over in this vicinity and also in Green valley. Hop-growers pleased with present prospects, as the outlook for a heavy crop was never more encouraging. Rainfall, one inch. Highest and lowest temperatures, 70 and 48. (Cloverdale)—Very little hay down, consequently little of it damaged. Rainfall of 1.58 inches will be of great benefit to late hay and summer crops. Benefits grass in places about as much as it damages it in others. Highest and lowest temperatures, 75 and 51. (Bennett Valley)—Hay not damaged because but little cut. The growing crops materially benefited by the showers and the cool weather. Hay not worth cutting two weeks ago will now soon be valuable. (Santa Rosa)—No doubt the grape crop has been seriously impaired by the frost. Reliable reports from half a dozen different sections of the county show the vineyards on the lower levels have suffered. Even the vineyards of Asti did not escape injury. Weather not favorable for hay, although there is much of it cut. Crops in this vicinity are looking particularly well. Hops are doing finely. Cherries not so plentiful as last year. There are big prospects for peaches. Bartlett pears will be a fair crop, and more apricots than ever before.

ALAMEDA (Pleasanton)—Fogs, clouds and rain detrimental to hay and cherries, but for sugar beets and other root crops it has been very beneficial. Hops looking well and thrifty, with prospects of a heavy yield. Rainfall, .16 of an inch. Highest and lowest temperatures, 80 and 44.

SANTA CLARA (San Jose)—All growing crops benefited by the rain, but some hay that was cut will be slightly damaged. Rainfall, .36 of an inch. Highest and lowest temperatures, 78 and 41. (Santa Clara)—The cherry crop now ready to be picked is the largest ever grown in this valley. Apricots not so heavy, but still will be a good crop. Occasionally, an orchard will be found injured by the frost, but on the whole the yield will be larger than that of the average year. The peach crop is also a large one. Prunes are short, this being an off year for that fruit. There will scarcely be one-third of a crop. Pears, like prunes, will be a partial failure. The almond crop will be one of the largest ever known. The value of late rains to hay and grain is very great. Up to May 1st these crops were regarded as failures, but since the rain it is seen that, while not equaling the large crops of past years, they will be fairly good. Hay has not grown high, but is quite thick and of excellent quality. Wheat and barley have taken new life since the rain and will yield probably double what was expected a few weeks ago.

AMADOR (Oleta)—Vegetation rushing under favorable weather. Hay that was cut and not cocked was somewhat damaged. Late winter-sown hay benefited, as well as grass in the foothills, by the late rains and cool and cloudy weather. Fruit prospects good. Rainfall, 1.50 inches. Highest and lowest temperatures, 76 and 51 deg.

SAN JOAQUIN (Lodi)—Rains beneficial to wheat, barley and potatoes, but slightly damaged the hay that was cut. Vegetables and berries are doing well. Grapes are in bloom and promise a large crop. Too cool for melons, which are very late. Rainfall, .60 of an inch. Highest and lowest temperatures, 78 and 50 deg. (Stockton)—Cool, cloudy weather and rains very beneficial to wheat and but slight injury done to hay.

FRESNO (Easton)—Fruit making good progress. Peach thinning completed. Much complaint of grapes dropping from the stem. Grain farmers are cutting hay. (Huron)—Several heavy sand storms. Highest and lowest temperatures, 85 and 55 deg. (Fresno)—Sand storm of 20th lodged considerable grain, shook off young fruit and broke tree limbs. Highest and lowest temperatures, 84 and 52 deg. (Reedley)—Grapes setting fairly well. Hills Valley of Sand Creek region will have a fair crop of grain. (Fowler)—Sand storms damaged vineyards by knocking off the bloom. Light showers of no benefit.

LOS ANGELES (Neenach)—Haying begun. Cool weather is helping barley to fill well. Highest and lowest temperatures, 89 and 44 deg. (Los Angeles)—Weather unusually cool for the season, with cloudy or foggy nights and mornings. Beans and corn benefited by such weather, but warmer weather desired for fruits. Highest and lowest temperatures, 74 and 48 deg., with a trace of rain. (Colgrove)—Cool with fresh ocean breezes, and conditions favorable to fruit. Melon vines beginning to run. Many acres being planted to onions. (Pomona)—Continued morning fog keeps the grain growing but is bad for haying, which is in full blast. Orange crop not definite as the dropping is not yet over. Highest and lowest temperatures, 86 and 46 deg.

RIVERSIDE (Arlington Heights)—The deciduous crop throughout Riverside section promises to be a fairly good crop this year. The orange crop promises to be large. The honey crop in this section is a failure. The bee men on the hills are already feeding their bees. Those situated near the orange groves expect to pull through this year with perhaps a fourth of a crop. Many of the dry ranchers are renting land under the canals and sowing millet, beets, etc., to keep their stock alive. The average maximum and minimum temperatures for corresponding week last year was 84 and 50, as against 76 and 46 this week. The absolute highest and lowest temperatures this week, 80 and 46. (San Jacinto)—The rains will help some of the very late sown barley and will make the temperature better. Very little damage to hay that was cut.

SAN DIEGO (Valley Center)—The recent rains and fogs have brought corn and beans out in fine shape. (San Diego)—Slightly warmer and very dry weather has prevailed during the week. Very little dew has fallen, owing to cloudy nights. Fruit prospects look promising, but warmer weather is needed. Haying is about over for the season. Highest and lowest temperatures, 66 and 49, a total deficiency of temperature during the week of 22 degrees.

HORTICULTURE.

May Meeting of the State Horticultural Society.

The regular monthly meeting of the State Horticultural Society occurred at the usual place in this city last Friday afternoon. Owing to a combination of counter attractions and bad weather, the attendance was light, but the meeting was one of the most instructive and interesting of the year. In the absence of President Lelong, Mr. J. C. Shinn was chosen to preside, but later gave up the chair to Vice-President Coates. Among the visitors were Mr. W. S. Manning of London and Mr. S. A. Clarke of Oregon.

Mr. Walton on Fruit Marketing.

The first formal proceeding was the reading of a paper on Fruit Marketing by Mr. B. F. Walton, president of the State Fruit Exchange. In it, Mr. Walton emphasized the relationship of the fruit industry of California to the general business of the State, and from this basis proceeded in a philosophic but practical way to define the policies essential to its welfare and expansion. It needs scarcely to be said that he looks upon intelligent co-operation in the preparation of our fruits for market, and in the selling of them, as the only safe rule of action. Following is his paper in full:

Mr. President and Gentlemen:—Marketing the fruit crop of 1894, the subject for our consideration to-day, is of sufficient importance to command the attention of not only fruit-growers, but the wisest judgment of all business men as well. The volume of general business to be done depends upon the amount of money that can be distributed among the people through the productive industries. Nearly all these industries are now sadly depressed.

Following the low price realized for the grain crop last year, the present crop is a comparative failure and will but little more than meet the requirements of our own State; hence the usual amount of money coming to us from foreign shipments will be materially lessened. Wool, wine, lumber and live stock are barely paying expenses. Our mines and manufactories are distributing but little among the masses.

Therefore the large fruit crop now so nearly assured, with perhaps an important second in the promising yield of hops, is about all that can be hopefully relied upon to supply the money that is to determine the amount of business to be done, and the degree of prosperity to be enjoyed by our people during the coming year.

Hence, in the distribution of our horticultural products at this time, errors of judgment, or methods which will fail to bring the largest possible money return, will be a calamity to the State. The California Fruit Exchange has diligently urged all growers of deciduous fruit, through local organizations and neighborhood drying associations equipped with the most approved appliances, to provide for drying their entire crop, and, by an intelligent and uniform system of grading, packing and storing, meet throughout the year the market requirements for a staple article of food. This would place each grower in position, with reference to the three channels of distribution, namely, dried, fresh and canned fruit, to control the situation and supply each channel with all that could profitably be disposed of. Without some such provision much of this crop will be wasted or shipped at a loss. The plan of selling fresh fruit, at auction, inaugurated by the California Fruit Union and generally adopted in all large cities, together with the formation of numerous local shipping associations which make it possible for small growers to concentrate their fruit and send it forward in carload lots with all the advantages of the larger grower, has done much to increase the volume of the fresh-fruit business, until it has assumed proportions requiring a large per cent of the crop and many thousand active men to supply the demands of the industry in its various branches. During the rapid development of all promising industries, there has always been a severe struggle for supremacy among the more prominent dealers, when the vital interests of both producer and consumer have been either entirely ignored or treated as of secondary importance. During this contest for supremacy the industry always suffers, and its development is often retarded for years if not totally destroyed. The fresh-fruit industry is now suffering from this condition. The extent of this affliction and the length of time it may continue depend upon the ability of the fruit-growers of this State to manage in their own interest the distribution and sale of fruit in its various forms, by some comprehensive and judicious system of co-operation, with a view to more firmly establishing this important industry on lines embracing the best interests of all, and leading to the rapid development of the resources of the State.

With this in view, a series of experiments should at once be entered upon looking to f. o. b. sales of all fresh as well as canned and dried fruits. With more prompt and better transportation facilities, with improved cars and a more perfect knowledge of the carrying and keeping qualities of different varieties of fruit, and a willingness on the part of growers to allow whoever invests money and helps to distribute and sell our fruits to make a liberal profit, this can easily be brought about, and do away with much of the dissatisfaction and loss caused by the present system. Such dealers would very soon arrange among themselves to supply the various markets, either by dividing the territory or providing for a distributing agency clothed with authority to furnish each market to the extent of its requirements only. When these things are done, the true value of our fruit crops will be generally recognized by all.

Mr. Fairbank's Paper.

Following Mr. Walton, the secretary read the following paper by Mr. H. A. Fairbank, manager of the National Fruit Association. It was a very meaty statement of facts important to the fruit-growers of California. Following is its full text:

Mr. President and Gentlemen:—Your secretary wrote me under date of May 16th asking that I give my views as

to the probable demand and the ways and means by which our fruit crop of 1894 could be handled to the best possible advantage.

I thank you for the honor, and in replying would say that, knowing as you do that this is our busy season, I trust you will overlook the crudeness of this paper.

First, as to the probable demand. The stock of the canners, to the best of my knowledge, is pretty well exhausted, and many report orders as already coming in from the East greatly in excess of those of the past two years. We anticipate unusual activity in this direction, while the dried fruit outlook is even more promising.

In the Fresno district a great deal of fruit is being contracted, largely by Chinamen, at prices which will admit their drying the entire crop if necessary, though they anticipate shipping East quite a portion. Eighteen and twenty dollars per ton has been paid for entire crops, the purchasers taking all the output of the various varieties.

With all others, the canners felt the effect of the stringency, and last year could not secure the necessary advances from the banks to enable them to make their purchases; but to-day the money lenders have largely recovered from their scare, and in a quiet way are seeking to place at interest the large amounts they have been holding for emergencies the past twelve months. So we look for a very largely increased pack by the canners, while the prospect of good prices being realized for dried fruits is very flattering. We learn that some sales have already been made of fancy dried apricots at 12½ cents per pound for future delivery.

When we turn our attention to the Eastern shipping of our fruit, we certainly have cause to anticipate very satisfactory results from such ventures. In Michigan the crop is reported injured fully 50 per cent. While the fruit in the orchards near the lake, where the large body of water tempers the cold, is not so badly hurt, that of all the inland fruit farms is almost a total failure. It is Georgia which seems to offer California shippers the most competition in the fruit line in the middle and western markets, and from this State comes the well-substantiated report that the crop is totally destroyed by the "freeze" of April 26th.

Looking toward the extreme Eastern markets, we find the following state of affairs: Within a radius of five miles from the Courthouse in New York City there are five million people. Last summer they were well supplied with domestic fruit, as the number of cars of peaches from the States of Maryland, New Jersey and Delaware ran from 150 to 200 cars per day. The largest number of carloads of peaches sold in New York in any one day during the summer of 1893 was 315.

These peaches sold all the way from 25c to 40c per basket of 45 pounds, or would probably average 34c per pound. How different is the prospect for the coming season. Maryland and Delaware, instead of having, as last season, 4,000,000 baskets of peaches, equivalent to 8,000,000 boxes as we pack them, will not have over 200,000 baskets, and these will doubtless be very largely consumed locally, and not find their way to any of the large markets, while New Jersey, 100 miles farther north, strange to relate, will have a very fair crop, which is estimated at 600,000 baskets, but from their time of ripening they offer our peaches very little competition, as they do not mature and become ready for shipment before September 1st. It has previously been noted that during last season's wonderfully heavy receipts the prices of domestic peaches averaged about three-quarters of a cent per pound. At this same period California peaches in 18 to 20-pound boxes were selling at the ruinously low price to us of from 40 to 70c per box, or equivalent to an average of three cents per pound, which only proves conclusively that our fruit is largely given the preference over the home grown. At the same price, because of our heavy freight charge, we could not expect to make any money.

Just within the past few days we have word that very severe weather has again been experienced in the New England States, the thermometer indicating the freezing point, so that what little fruit escaped the first "freeze" has been caught by this second cold snap.

From the best information we can secure, though there has been no fruit circular as yet issued, the railroad rates will remain the same as last year, but we are promised a very marked improvement in the matter of time in transit. The railroads have prepared a table showing that trains of fruit will leave Sacramento daily at midnight and be run on a schedule allowing 120 hours to Chicago. These trains will be made up entirely of ventilated cars, and, though run on this fast time, will go at the existing rate for slow freight of \$250 per car of ten tons. Refrigerator cars will not be taken on these trains, but will consume seven days in their journey to Chicago. If this schedule is adhered to without deviation, it will be a great boon to our growers. As it has been, it was absolutely impossible to know how to pick the fruit for shipment, as in some instances word would come back that fruit brought little because it was "too soft," and the grower, in trying to remedy this evil, would next be informed that fruit picked at about the same degree of ripeness "arrived hard and green and sold low."

The explanation of this would be that in the first instance the fruit was twelve days en route, while in the second case the fruit, being exactly the same at starting, was only eight days in transit and had not ripened up. But the sending of trains on schedule time will obviate all this difficulty.

We understand that one of the refrigerator companies has, the past winter, built a great number of larger cars, both as to carrying and ice capacity, so that, having been properly iced in California, they can without risk be run through to Chicago without re-icing. This is also a great improvement, as in giving out the information as to the making of a schedule for special fruit trains, the railroad company stipulates that refrigerators which have been re-iced en route will not be carried forward on the same train, as trains will not be held, but that such cars will be dropped out and picked up by the next train.

To one who has carefully observed the sale of California

fruits in the East the past two years, it is very evident that we must seek new markets and consequently a much wider distribution. There are thousands of new acres coming into bearing each year, and orchards already bearing are sending away a largely increased output. Where five years ago we sent about 3000 carloads of fruit, last year, notwithstanding the prices were the lowest ever realized, there were some 5000 carloads forwarded, and the increase will be much greater in the next five years. There was a time, and that not long ago, when Chicago could and did take, at paying prices to the grower, all the California fruit which found its way over the mountains. New York up to within six years had hardly received a carload of California fruit direct; last season it handled nearly 1000 cars.

There are probably fifty towns in the United States which can, with profit to the shipper, handle our fruits in carload lots. It may be possible that we do not need all these this season but we will soon, and we cannot wait until that time and then expect to ship to them and have the venture successful from the start. The people have to be educated to use our fruit and the handlers must be assured that they can rely upon a steady supply so they can furnish their customers without having to ship in by express from some large city which is receiving daily, before they will countermand their orders placed with brokers and depend upon direct shipments to their own town.

If this pioneer work is not done now and these markets developed and a demand stimulated, a little later, when we find we must use them or accept ruinously low prices in the older markets because of oversupply, we certainly will wish we sent even a tenth of our present supply, although at a seeming loss, to these cities and so prepare the way for future heavy shipments. The strawberry people in Illinois have on a smaller scale gone through the same experience, until you can now find their berries in Denver, St. Paul and Galveston, as well as Chicago and the near-by cities. When they began branching out they did so at an actual loss, as at that time the immediate cities would take at good prices their whole crop and now they are all benefited and see the wisdom of the few who persevered in the pioneer work of opening up and developing new markets.

In point of information as to prices being realized in the various cities, the California shippers, although from two to three thousand miles away from the markets they seek to supply, are better informed than those in any other fruit section of the United States. There are a number of firms and corporations which realize now that the fruit-shipping industry of California will not only be the leading business of the State, but shortly one of the largest in the United States as well, and they are laying the foundation accordingly for an immense business. Take for instance the corporation with which the writer is connected. It has members in 27 cities of the East. These report daily by wire the sales of California fruits by themselves or others in their respective cities. Should it be cars of their handling they quote the prices realized in the sale of each variety of fruit in the car belonging to each shipper. This is sent from the Sacramento office by telephone to each shipper and a letter also written him, giving not only the sale of his fruit in this particular market, but also quoting all the other markets as well, so that, though 3000 miles away, each shipper knows each day exactly what his fruit sold for on the morning of the same day. This is much more than can be said of many who ship domestic fruits from points within a day's ride of the large Eastern cities. Shippers are given this information freely and can themselves decide on the destination of the cars they may be loading, if they are so inclined.

In the matter of returns great and beneficial improvements have also been made over the old method of shipping one month and receiving remittances from one to two months later. The day following the sale the account sale is made out and with a catalogue and check for proceeds attached is mailed direct to the shipper of the fruit. Should it happen that the fruit went forward in a ventilated car, taking the new schedule time of five days for transit, allowing one day for making up accounts and four days to ensue between mailing and delivery of the letter, and you will have ten days as the time necessary in which one can send fruit from California to Chicago, have the same sold and receive the net proceeds of such sale. We learn that it takes even longer than this often for fruits to be sent from Georgia or even from Michigan to Chicago and the returns to be had of the sale of the same. California people can congratulate themselves on the strong competition which has brought about such splendid results. In addition to facilitating promptness, the auction method of selling throws a safeguard around the sale which commends it to all shippers. Any one can, if desired by shippers, attend the sale and note the prices realized on any particular lines. Prices set down on the printed catalogue sent out by the auctioneers can be compared with such private marked catalogue and the figures verified if one desires further proof, though to a great majority the auctioneers' figures are ample evidence, as their reputation and consequently their success depends upon their accuracy and absolute honesty of the catalogue they issue.

Under the above conditions of Eastern crops and with such facilities at your command, it would certainly seem to us that you have every reason to expect a very profitable year for your fruit shipments.

General Talk on Crop Conditions and Prospects.

Upon call of the roll under this head, Mr. Walton reported that there was no notable change in the situation in Sutter and Yuba counties since last report. Either through Mr. Kells' admonitions, or from some other cause, the orchards about Yuba City had been treated to a vigorous thinning during the past few weeks. The prune crop would be light—probably about a half crop—but other fruits were in good condition. Since the rains, apricots were speckling somewhat, but this was not regarded as serious.

Mr. E. F. Adams said that in his home neighborhood, in the Santa Cruz mountains, prunes promised a good crop. He noticed some little drooping, but it was not serious.

Speaking generally, he said that from the present outlook the State would have about a half or a five-eighths crop of prunes.

Mr. Parkinson of eastern Contra Costa said that in his neighborhood apricots showed a tendency to rust, which was new to the district. But much more serious was the fact that pears were dropping heavily.

Mr. Bancroft of Contra Costa said that from his observation, prunes would be about a half crop. Bartlett pears were dropping and plums would make about a third of a crop. Apricots, pears and almonds were in good promise.

Mr. Hatch, speaking from information received in various ways, said that he thought the prune crop in the State at large would be short about one-half. In his own special locality of Suisun, there would not be more than a one-third crop. In Santa Clara there would be a half crop. New orchards would probably bring the total up to something like fifty per cent of last year's product. There would, he thought, be no scarcity of peaches, apricots and pears, and as for almonds there would be double the product of any former year. It was not possible to say what the effect would be upon prices of almonds. Nobody wants more than a sackful at a time until the tariff question is settled. As to fruit prices in general Mr. Hatch advised growers not to look for anything fancy, for the times, he said, are too hard. Eastern people cannot pay high prices for anything until general industrial conditions are better.

Mr. Coates thought this was good sense and timely spoken. The financial and other conditions of the country were not, he said, such as to warrant extravagant prices, and it was not wise to build up hopes only to be disappointed in the end.

Mr. J. C. Shinn of Niles thought there would be more fruit in the Eastern orchards than we had been led to believe. We should know better what to look for from that quarter after the "June drop."

Mr. Freeman, manager of J. K. Armsby & Co., commission merchants and large handlers of California dried and canned fruits, being called upon, said that it was his practice to discourage any arbitrary attempts at the fixing of prices. Mr. Walton, he said, had summed the matter up in his paper just read, the better the methods of preparing and selling, the better it will be for everybody. There are, said Mr. Freeman, two sources of market making—speculators and consumers—and it is the latter that must be depended upon in the long run. We can set a price but we can't make people pay it. In dried fruits more than in almost any other food product, a raise in the price stopped consumption. An attempt in this line had lately been attempted by certain speculators and had failed. Prunes bought in this market for six cents were now being sold in Chicago at the same price. We can, it is true, maintain prices in a certain sense, but the moment we go beyond the power of the consuming public to buy, we fail. This year there is good reason to hope for fair prices, but he doubted if there would be anything in the way of fancy prices, for the reasons given by Messrs. Hatch and Coates. Speculators, he thought, would have little to do with prices, and in the main they would be based on consumptive demands.

Mr. Clarke of Oregon spoke of conditions there and said fruit production was doubling and trebling each year. This season, he thought, the surplus for export would be 1000 carloads, of which 500 would go to markets east of the Rocky mountains. He thought the Oregon prune was bound to find favor in the Eastern market.

Responding to a question from the chairman, Mr. Freeman said that he regarded the Oregon prune as a good food product, but that it had yet its fight to make in the Eastern market.

In General.—Mr. W. S. Manning of England, being called upon by the chair, explained briefly a theory held by himself and others, that fruits and nuts should be the whole food of mankind. His remarks occasioned a good deal of amusing banter; and he was invited to set forth his theories at the next meeting.

The general subject for consideration at the next meeting will be SULPHURING, and Mr. H. P. Stabler of Yuba City and Messrs. J. T. Grant and G. A. Bean of San Jose will be asked to give their experience and opinions.

FRUIT PRESERVATION.

Value of Co-operative Drying Associations.

Mr. Joseph C. Shinn of Niles gives a local journal an admirable letter on the advantages of association in fruit handling. Though the subject has become somewhat trite, and the facts well known, still Mr. Shinn's manner of presenting the matter may be valuable even outside of the region which he desires to awaken to a sense of its needs. For this reason we quote as follows:

The idea was started, or at least talked of a little, last year by the members of the local "Farmers and Fruit-growers Association," a kind of horticultural club, as you know, which "meets round" in this region and discusses "scale bug" and other things, principally "scale bug." Well, this year this association has taken up the movement for co-operating drying in earnest, and its members have with others agreed to take quite a block of stock in an association or union for that purpose when formed, and, as the more fruit we can get to handle the cheaper we can handle each pound of fruit, I write you a few explanations of the subjects and methods of such associations in the hope that more may be interested and join.

Co-operative drying unions are not an experiment, nor are they new. Such associations have been in operation for a number of years in the San Jose region and elsewhere and I have yet to hear of a failure. There may have been, but where there were I feel sure that there were some special reasons, by way of improper organization, unsuitable men for managers, or some special reasons for such failure that do not exist in most cases. As I said before, I never

yet heard of a case of failure, and it stands to reason that if we can each one of us dry fruit himself, on poor grounds, with an inadequate supply of trays in many cases, poor arrangements for bleaching and storing, and no machinery for grading, dipping, etc., or tracks for easy handling, we can do better in a well-arranged drying ground where we can afford to have all these things and an abundant supply of help. We will not only dry the fruit cheaper, but we will make a better article of fruit.

The facts of the case bear me out in this statement, for the fruit dried by those San Jose co-operative associations is vastly superior to even the best that is dried in this region, and will command a higher price per pound, and sell more readily than ours. This is not because our green fruit is not equal in quality. It is fully as good as theirs, but we cannot handle it properly in the small quantities that are grown in the separate orchards. It must be brought to some central point, and where there is a complete plant for all the processes required, and there cared for by an expert, who, by the way, had best be obtained from San Jose, or from some other point where they are more used to drying than we are here.

Now as to the methods of organization and handling. A grower takes stock to the extent of the acres of fruit that he expects to dry—one share at a par value of \$15 for each acre. He is to be called on for only \$10 an acre now and the rest will not be required until he gets some money from his dried fruit. When his fruit is ready to dry he hauls it in, it is run through a grader and he is given a receipt for so many pounds of such and such grades. The grades are dried separately and when dried are weighed into the warehouse, and when the full accounts of the season's drying are in it is known to a fraction of a pound how much of each grade of dried fruit belongs to each grower, for the percentages of loss by drying are carefully kept.

All this fruit is stored in a good and properly arranged building and under care of a man who understands the management and care necessary to keep it in proper condition, and under such conditions it becomes negotiable property and the Union can easily borrow money on it for the account of growers who need help as soon as the fruit is out of their hands. It is probable that half the value of fruit in store at any time could easily be borrowed. Then, when in the opinion of the directors the proper time comes to begin selling, there is a great advantage—even greater than in the drying—by having large quantities of fruit of well-established grades together. A buyer from the East, to whom we have previously sent samples, wires: "Send car prunes, such and such grade;" or, "such grade peach or apricot," and, after arranging price, the goods are loaded, his agent sends check and that is all there is about it. On the other hand, when a small grower wishes to sell he has two tons, four tons, or perhaps ten tons of mixed fruit—a few apricots of several grades as to size and of a dozen colors. His peaches are worse, because he had to peel a few hundred pounds, and his prunes are unsalable, because they are ungraded, and a buyer will never be able to count as few to the pound as he can.

His only way to sell this "job lot" is to take samples and "hawk" them around to the various San Francisco buyers. After cooling his heels in the offices of a dozen or so he finally gets an offer and ships his fruit down. If fruit has gone up he will probably get a check, less freight and drayage, in a few days, but if fruit has gone down, nothing short of a suit at law will prove to the buyer that the samples given were not vastly better than the fruit sent in, and, as a small grower cannot afford a suit about a few hundred dollars' worth of goods, a reduction of from 10 to 25 per cent is accepted, to suit the convenience of the buyer.

The grower, after being nipped a few times this way, tries selling on commission. The merchant says he will get all the goods are worth. Say they will bring so and so, and urges that they be sent to him, as he is doing the largest business of any in the State, etc. Goods are sent. After a long time are sold and returns made—less commission, less freight to San Francisco, less drayage to warehouse, less storage, less insurance, less drayage to cars, less freight East, and I do not know how many other charges. Now, I do not mean to insinuate that the commission man is cheating any one. What he makes, if he is honest, as a few of them are, is only his five per cent commission, which is little enough, and all these charges must in some way be paid by the product handled if people will have it handled in this retail way, whether they sell on commission or otherwise. If handled in quantity, it can, as I said, be sold by sample, or inspection, f. o. b., and cash paid before the fruit leaves the hands of the grower, and not only all these charges saved, but a higher price obtained per pound on account of established and well-known reputation, and the fact that a buyer knows that he can get a round lot of what he wants, and will not have to take a lot of fruit that he don't want in order to get what he does want.

Now a few words as to the general disposition of drying in this region. There are several things in its favor, among the principal of which are cheap and abundant help or labor and cheap materials. We can get our fruit cut and handled 25 per cent cheaper than they can in the interior of the State, and we can get lumber, sulphur, etc., etc., cheaper than they can there. On the other hand, they can dry quicker there than we can, but with a good supply of trays there need never be serious difficulty here.

The price of the dried product has for a number of years past set the price that the canners will pay, and they figure very closely to pay a little less than they estimate the fruit to be worth for that purpose. This they will continue to do, for there will always be some growers who cannot afford to fit up for drying, or who must have the money the minute it is off the tree, and who will each year be able to supply the small per cent of the crop which the canners can use.

The canning industry has of late years fallen more and more behind in the race with the dried product, and though it is increasing from year to year it is entirely inadequate to the immense output of the State at present. Of course canners may make a mistake and pay more than the fruit

is worth, as the few who made contracts at \$30 a ton last year did when they could buy later for \$7, but growers may be sure that such mistakes will not be made often enough to be of any practical benefit and that the real value of fruit for drying will be a little higher than its value for canning. If this be so, is it not advisable to dry in the way that will give best results at the least expense?

THE IRRIGATIONIST.

Irrigation Measures Before Congress.

A bill introduced by Doolittle of Washington appropriates \$100,000 for the purpose of ascertaining the subterranean water supplies in Idaho, Montana and that portion of the States of Washington and Oregon lying east of the Cascade mountains and ascertaining the localities in these States where the sinking of artesian wells can be profitably undertaken. The work can be under the direction of the Geological Survey.

Sweet of Idaho has introduced the following bill: That, subject to all rights, inchoate or perfected, all lands of whatever nature and rights thereto, including water rights now belonging to the United States, situated in Nebraska, Nevada, South Dakota, North Dakota, Montana, Washington, Oregon, Wyoming, Idaho, Colorado, Kansas and California, and in New Mexico, Arizona, Oklahoma and Utah, are, with full and complete jurisdiction thereover, granted to said several States and Territories, the grant to each of said States and Territories to be of the lands contained within its present boundaries and territorial limits. The President shall issue letters patent for the same to the several States and Territories whenever any of said States and Territories shall, by act of its Legislature, accept the disposition of lands as herein provided within the time specified.

This act shall in no manner affect any Indian lands nor lands held in trust for or for use by Indians, nor mineral lands, nor shall it apply to Alaska.

The Governors of Utah, Arizona, Oklahoma and New Mexico shall, with reasonable time after the passage of this act, call special sessions, if need be, of their several Legislatures to pass upon provisions of this act and questions herein submitted to them, and may, from time to time, call such other sessions of their respective Legislatures as may be rendered necessary.

The benefits of this act shall not accrue to any State or Territory which shall not have accepted the provisions thereof within four years from its approval, as soon as practicable after the issuance of letters patent to any State or Territory for lands therein situated, and from time to time thereafter as occasion may require, it shall be the duty of the Secretary of the Interior at the expense of the United States to cause to be delivered to the proper authorities of such State or Territory all maps, records, books and papers, or certified copies thereof, in case it may be necessary to retain the originals in the General Land Office, which may be necessary to such State or Territory for the proper control, administration and disposition of such lands.

No State or Territory accepting the cession of lands herein provided shall in any case sell, lease or dispose of said lands in greater quantity than 160 acres to any one person, corporation or association, nor shall any such State or Territory in any manner impair or abridge the homestead privileges now granted to soldiers and sailors under the land laws of the United States.

Also the following: That to encourage reclamation of arid lands and the cultivation and sale thereof in small tracts to actual settlers, there is hereby reserved for purposes in each of the States to which the desert land law of the United States is applicable, one million acres of surveyed public arid lands in said States respectively. This is to be selected by each of said States within ten years after the passage of this act, and from the date of such selection to be thereafter withheld from other disposal, except as hereinafter provided; provided that any lands so reserved which shall not be reclaimed within five years from the date of their selection or as to which the State has not expended or caused to be expended \$3 per acre in works intended for reclamation of such lands, as now required by the United States desert land law from the claimant thereunder, shall be released from such reservation and become subject to the disposal as other public lands of the United States.

After proclamation by the President any State accepting the conditions of the act is authorized to make all necessary regulations governing the manner or extent of reclamation and to make all contracts to cause lands to be so reclaimed by actual settlers. As rapidly as the State may furnish proof that any of the lands are so reclaimed and occupied by actual settlers, patents shall issue to the State for said lands, provided that the States shall not dispose of more than 160 acres of land to any one person, and the net proceeds derived by each State from the sale of said lands shall be held and expended as separate funds to aid the work of reclaiming lands so reserved, the surplus, if any, shall be devoted by the State to reclaiming its other arid lands. All lands, exclusive of timber and mineral lands, which will not without irrigation produce some agricultural crop shall be deemed arid lands within the meaning of the act, which fact shall be ascertained by affidavit of two or more witnesses filed in the Land Office of the district in which such lands may be situated at the time of selection thereof.

Where there is no adverse claimant decision of the Register and Receiver as to what are arid lands shall be final, provided that this act shall not be construed to authorize the leasing of lands or the disposal or use of them by the States in any way whatever, except to secure their reclamation, cultivation and settlement. This act shall also apply to Montana and Kansas and to States that may be formed out of the Territories of Arizona, New Mexico, Oklahoma and Utah when admitted.

Sub-Irrigation.

We are glad to see that all the mid-West experiment stations are not going daft over sub-irrigation. It is good enough, perhaps, in its place, but it is spread altogether too widely. Below are the conclusions reached by the Utah station:

1. Sub-irrigation, whether by large open drains or by the cement-pipe system, fails to supply moisture enough for growing crops.
2. The lateral movement of water was too slow to furnish the requisite supply for the evaporation of plants, being at the rate of a very few inches per day.
3. The sub-irrigated soil was warmer than the surface-irrigated soil.
4. The atmosphere around the plants, to the height of 12 inches, was warmer by sub-irrigation than by surface irrigation.
5. The sub-irrigated plat did not contain as much moisture as the surface-irrigated plat.
6. It is concluded that for the college farm the lateral movement of water cannot be made rapid enough for maximum crop growth.
7. The system is too costly for ordinary farm crops.

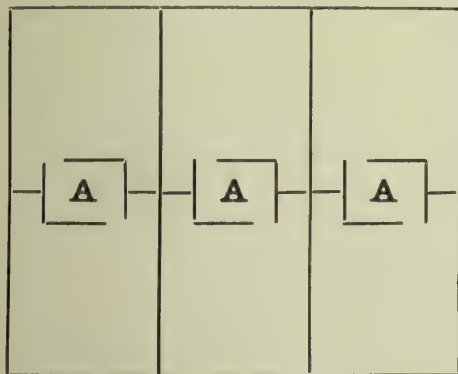
POULTRY YARD.

Managing a Poultry Yard.

C. T. Abbott, Coronado Beach, Cal., writes his experience for the *California Cultivator* as follows:

After keeping chickens for several years in a half-hearted every day kind of a way, I determined to go in for it in earnest. I therefore one fall fenced in a piece of land, 180 feet by 150 feet and set out three yards as the accompanying plan shows. My idea in building the houses (AAA) down the center was to be able to run the chickens on one side and grow vegetables, etc., on the opposite side one year, and the next year to reverse the order of things, by growing vegetables where the chickens had been and running the chickens where the vegetables had been the previous year. To effect this, all I had to do was to close the door on the south side of the chicken house and open it on the north, or vice versa. By this means my chickens had fresh grounds every year and I had a well manured vegetable garden every year.

The houses I built just large enough to hold a rooster and from 15 to 20 hens (Minorcas). I had six laying boxes in each house, the roosts were placed not one above the other as is general, but parallel with each other, some two feet from the ground and from side to side of the house. When the roosts are one above the other all the chickens



wish to roost on the top roost and often knock each other off in their attempts to all crowd onto the top roost.

The houses were perfectly air tight with a door on the north side towards one end of the house, a window in each house, two ventilators in the roof—for ventilators I used anti-smoking chimney cowles with weather vane at top which caused them to revolve with the slightest wind so that the mouth of the ventilator was always turned away from the wind thus effectually preventing any wind or draft from entering the ventilator and always allowing all impure heated air to freely escape from the inside. I also had sliding ventilators at sides of houses but above the roosts, which I opened when necessary. I think chickens are benefited by as much fresh air as possible but should be carefully guarded against all drafts. I kept the houses as clean as possible by removing the droppings every day, fumigating them with sulphur every two or three months and thoroughly whitewashing them every six months with a mixture of water, lime and carbolic acid. The roosts were all made to slide out and were frequently scraped and washed with hot water. I renewed the earth in the chicken houses as often as possible, which is the best way to keep away disease—earth being Nature's best deodorizer and disinfectant. In each run I erected a small shade shelter into which the chickens could run out of sight and out of the heat. Each shelter was provided with a dust bath, consisting of dried earth, sifted ashes and sulphur. The chickens had fresh water given them every morning.

My staple feed consisted of bran, middlings, oatmeal, wheat, buckwheat, corn and barley. The aim I had in feeding was never to allow the chickens to get their crops full to repletion till just before bedtime, at the same time to keep them always with something in their crops but looking about for something more. I wished, however, after their long night's fast, to get something nutritious into their systems as early as possible in the morning and, as nutriment is more quickly derived from bran and meal which is already ground and so ready to be immediately assimilated without being ground by the chicken's gizzard, I gave them early every morning a hot mash of scalded bran mixed with sometimes middlings, sometimes oatmeal till it formed a dry, crumbling mass. This I gave them in a trough in

their houses—I fed them with this only sparingly to allay their hunger and add a little fuel to the fire. Whilst they were eating this I scattered some grain, wheat or buckwheat, on the ground in the yards raking it into the ground with a heavy rake. Hunting for this hidden grain kept them going pretty well all day. In cold weather, after feeding them the mash, I kept them in their houses till the sun had warmed the air. Just before roosting time I gave them a good feed of either wheat or buckwheat. I used buckwheat as I knew that the French, who are so successful with their fowls, use this kind of grain very extensively and I found that my fowls did very well upon it, and had it been cheaper I would have used it much more, especially in winter time. I believe it to be the best of all grain for both young and full grown chickens. Every day the yards were supplied with plenty of green food and as often as possible I gave them raw meat and pounded bones. I kept plenty of sharp grit, gravel and everything I could find of a shell-forming nature always before them in boxes raised a foot or so off the ground to keep the dirt from being scratched into them.

I occasionally fed them sprouted barley. Barley is easily sprouted in a wet sack and is greedily eaten by chickens. To increase laying in winter or at moulting time, I gave them an occasional handful or two of hemp seed or a little red pepper in the morning. A little tincture of iron or saffron placed in the water is a good tonic, the latter especially during the moult.

My fowls always kept very healthy, and being much with them, I learned to know the best layers and best workers, saved their eggs and bred up a flock of exceptional layers.

Oregon Experiments With Capons.

Bulletin No. 31 issued by the entomological department of the Oregon Experiment Station contains a very interesting article on the subject of capons and caponizing, by Professor F. L. Washburn. We quote the following:

A capon is an altered rooster. Like a steer, a capon is more quiet, lays on more flesh and fat, and remains tender for many months after the operation. Birds 17 and 19 months old that have been caponized have been killed here and their meat found extremely delicate and tender. If kept the proper length of time they will weigh from 20 to 30 per cent more than a rooster of the same age, and in most Eastern markets will bring from 18 to 40 cents per pound. After the operation the wattles do not grow. They do not chase the hens, and neither fight nor crow. They are very hearty eaters for the first few months after caponizing, but after that consume about the same amount of food that ordinary fowls do. If the operation does not succeed in removing all the testicular matter or the sack enclosing it, the glands grow—sometimes to an enormous size—and assume distorted shapes. It is then that the bird is known as a slip. He gains fat and better flesh than a cockerel, grows rapidly, and for a time resembles in outward appearance a capon; but after three or four months the comb and wattles grow, the bird develops a crow, and chases the hens worse than a rooster. The period of gain has at this point ceased, and the bird should be killed at once. In some markets the meat of a slip brings nearly as much per pound as that of a capon.

Many are of the opinion that the operation is cruel, but it is no more so than the operation performed on calves, pigs and colts. It is performed quickly, and the bird begins to eat soon after being released from the caponizing board. An inefficient operator will not lose over two per cent of the birds operated upon, and any chick so killed dies from hemorrhage, and is as good for table use as if death had been caused by beheading. Caponizing instruments are sold in sets, at from \$2 to \$5 and over. The instruments actually necessary are a sharp pen knife, a spring or spreader to keep the ribs apart, a caponizing canula, a delicate steel hook, and a pair of small sharp-pointed scissors. A caponizing board will also be necessary. The bulletin gives a full description of this board and how the operation should be performed. The bird should be from 2 1/4 to 4 months old and should be kept without food or water for a period of from 23 to 30 hours next preceding the operation. Experiments so far have shown that the Light Brahma and Plymouth Rock breeds make by far the best capons. The Black Langshans are excellent also, but are slow growers. Partridge Cochins are highly spoken of. The Indian games make fine capons, as well as crosses of this species with other large breeds.

The experiments made here were under the same conditions as would be found on any farm. About 30 fowls were used in the experiments and the capons were not given special care nor special food. Untreated roosters of the same species and same brood were used as checks in many cases. A Plymouth Rock and Brown Leghorn rooster was caponized at the age of 5 months, at which time it weighed 2 pounds 15 1/2 ounces; 5 months and 21 days later it weighed 5 pounds, and dressed weighed 3 1/2 pounds. A check was kept on above capon by a bird from the same brood that weighed 2 pounds 8 1/2 ounces when 5 months old. At the age of 10 months and 21 days it was killed and weighed 4 pounds alive and 2 1/2 dressed. A Black Langshan caponized at the age of 5 months weighed 2 pounds and 11 ounces; 12 months and 19 days later it weighed 10 1/2 pounds alive and 7 1/2 dressed, and was in excellent condition. The results of other experiments in this line also proved favorable.

The matter of growing capons for profit is a subject that Prof. Washburn has thoroughly familiarized himself with. As result of his investigations he says that unless fowls are sold by the pound it will not pay from a financial standpoint.

He is informed that in Portland and a few other large cities the practice of selling poultry by the dozen is gradually disappearing, and believes that when fowls are sold by the pound, as they should be, it will be an easy matter for the raiser of capons to successfully compete with those furnishing the scrawny, tough fowls now displayed in our markets.

THE DAIRY.

Injured Teats and Caked Udders.

A correspondent of *Hoard's Dairyman* gives an outline of his experience as follows:

Quite a number of times I have had cows afflicted with an inflamed condition of the lower inch of one teat. The first I noticed was that the lower half inch of one teat was feverish and thickened, and on trying to milk that teat the milk came harder than usual. When I didn't know any better I kept on squeezing the teat and trying to empty that quarter of the udder. But our dairymaid had read that it was best to stop milking a sore teat for three days. I did so, after I had ruined the teat by squeezing it for a week or two. The teat ever after milked hard.

Soon after a young heifer had a teat inflamed near its end. I was away. My temporary hand could not milk that obstructed teat and called another fellow with a strong grip, and he partially milked the cow, and made matters worse. Next day I inserted a milking tube, and within 12 hours had a fine case of caked udder in that quarter, and in a few days she gave no milk from that teat.

I had a hard-milking heifer, and soon after made two smooth lead plugs less than an inch long, and inserted them in two of her teats to make them milk more easily. She had had a perfectly healthy udder, but 12 hours after using the plugs those two quarters of her udder were caked hard and I used the plugs no more.

S. B. Morrison, about that time, told in the *Dairyman* how to treat inflammation of lower inch of teat. "Do not touch the teat for three days, then milk it very slowly and carefully." I soon had another case, and following his advice the cow recovered use of teat in a short time. It occurred to me that pressure upon the inflamed teat would lessen the inflammatory process, and I have since wrapped the teat up in a piece of tarred cloth, and tied the cloth on with strings. The cloth will not always stay on, and I have used narrow, long strips of adhesive plaster wound around the teat as tightly as possible, beginning at the end of the teat and running up. In three days I take off the bandage and milk that quarter of the udder.

My cow that I wrote about has since injured two more of her teats. One she cut open lengthwise and the other she injured at the end. She has a large pendulous udder and large teats, and I have lately learned how she injured her teats. Her platform is a trifle too short and her teats fall over the end of it into the drop. Her hoof presses the teat against the side of the drop and injures it. These injured teats sometimes remain hard and thick near the end, and I remedy that by pressing end of teat firmly between thumb and finger half a minute before milking and by gently rolling teat while pressing it. This makes the milk come easier and in time cures permanently the trouble in many cases. Once in a while a cow gets caked udder in one quarter. For this painful trouble I always use a pail of hot water. I apply it with a good-sized cloth, setting pail under the udder and dipping it often in the water, which should be as hot as the hands can bear it. Continue this for full twenty minutes by the watch. My cows are generally better after the first application. To be of use in subduing inflammation, hot water must be applied at least twenty minutes at a time.

A State Can Protect Itself Against Oleomargarine.

The old question as to whether a State can protect itself against an article licensed by the United States and brought within State lines by interstate commerce, is now being retried before the Supreme Court of the United States in the interest of the Massachusetts law, which requires that oleo shall not be colored in imitation of butter. The brief prepared on behalf of the commonwealth very correctly states the case as follows:

"Because flour, beef and mutton are protected as subjects of commerce, must the same protection be extended to beans and chickory as imitations of coffee, glucose as sugar, sulphate of lime as cream of tartar, cotton oil as lard, or cabbage leaf as tobacco? A large number of articles are commonly put upon the market as adulterations, some noxious and some merely worthless, varying in amount from 1 to 85 per cent. Has a State no power to protect its citizens from such adulterations if they happen to come from over the line? Imitation butter belongs to this class. It is a deceptive imitation of an article of food of universal and practically necessary use, and is designedly made deceptive by the introduction of an artificial coloring matter, which is necessary to enable it to pass for butter. It is common knowledge and indeed is alleged in the plaintiff's petition that oleomargarine is 'designed to take the place of butter.' It is adapted to be made an instrument of deceit whether so used or not. If it once finds its way into the market, people will be induced to buy it and eat it, under the supposition that they are buying and eating butter. It is an infringement of public rights. It is a reasonable exercise of the police power of the State to forbid it."

Washing Butter.

Mr. F. N. Menzies, late secretary of the Highland Agricultural Society, writes as follows on this subject. I hold that, by the system of butter making now taught, the whole bloom, color and taste of the butter is washed out; moreover, it takes as much trouble to get the water out of the butter as it does to get the buttermilk out. My system is, when the butter forms into small granulations, to run off the buttermilk and allow it to draw off the butter for a few minutes; then lift it out with wooden scoops or spoons, and put it on the butter-worker, and press as much of the buttermilk out with "Scotch hands" (little wooden flat spades) as possible; then place all the butter on a cold slate, and work it in portions in the butter-worker till it appears quite

solid, and all the milk is out of it. If the butter is to be kept fresh, it is then weighed into pounds; if it is to be kept pickled or powdered, this is done in the butter-worker after it has been weighed, and it is salted according to taste. I use a mixture of one pound of granulated cane sugar to three pounds of Scotch sea salt. I may add that I have for many years got the highest price going for my butter, and could sell a vast deal more than I have to spare.

Temperature at Which to Churn.

John Gould points out the good results of churning at a low temperature in *Hoard's Dairyman* as follows: "In one of our creameries where we kept a record of temperature for ten consecutive days in May last, the temperature of cream at starting the churn was 48 to 49 degrees; time of churning, 40 to 50 minutes; and temperature when gathered 49 to 52 degrees. The fat in buttermilk was never more than one-tenth of one per cent, and in most cases it showed a single drop that it would require five to eight to make a space of fat in the test bottles. I have some figures before me now of one creamery where, on May 1st, the cream was at the start 50 degrees, gathered at 53 degrees, fat in buttermilk less than one-tenth; May 2d, at the start 56 degrees, gathered at 58 degrees, fat in buttermilk less than six-tenths; May 6th, at the start 54 degrees, gathered at 56 degrees, fat in buttermilk less than five-tenths. I have the figures of our home creamery from April 21th to May 4th inclusive, where the temperature of cream at starting the churn was 50 to 53 degrees, temperature when gathered 54 to 56 degrees; average fat in buttermilk less than one-tenth of one per cent. It is not practicable to do this thorough churning in hot weather unless we can control the temperature of the churn room, as a warm room will cause the cream to become too warm to secure the best results. It may be best for me to say here that it is not practicable to churn cream that contains less than 20 per cent of fat at a temperature of 50 degrees, but it is thoroughly practicable to churn cream that contains 30 to 35 per cent of fat at 50 degrees. The per cent of fat can be got at approximately from the per cent of fat in the new milk and the proportion of the milk that is taken as cream. For instance, if the milk contains four per cent of fat and one-fifth is taken as cream, the cream will contain 20 per cent of fat. If one-eighth of the same milk is taken as cream, the cream will contain 32 per cent of fat. If one-sixth is taken as cream, it will contain 26 per cent of fat. I know that most creamery men do their own figuring, but think some may need a little help.

Should Be Decorticated.

TO THE EDITOR:—Upon seeing a quotation of cottonseed cake and meal in the *RURAL PRESS* and other papers I ordered a small quantity of the meal, but found it to be of undecorticated seed, and consequently there is more or less danger in its use.

The partly-ground shells are very hard and sharp, and irritate the stomach. Let my brother farmers who know the great feeding value of this meal for stock, heed this warning and look for dire results if they use it. Moreover, the price is high enough for the meal to be of decorticated seed. E. C. WILLEKES MACDONALD.
Aptos, Cal.

THE STABLE.

Pregnant Mares.

As the mere fact of service by the stallion does not insure pregnancy it is important that the result should be determined, to save the mare from unnecessary and dangerous work or medication when actually in foal and to obviate wasteful and needless precautions when she is not.

The cessation and non-recurrence of the symptoms of heat (horsing) (says Professor James Law in the Department of Agriculture Report of the Horse), is a most significant though not infallible sign of conception. If the sexual excitement speedily subsides and the mare persistently refuses the stallion for a month she is probably pregnant. In very exceptional cases a mare will accept a second or third service after weeks or months, though pregnant, and some mares will refuse the horse persistently though conception has not taken place, and this in spite of warm weather, good condition of the mare and liberal feeding. The recurrence of heat in the pregnant mare is most likely to take place in hot weather. If heat merely persists an undue length of time after service, or if it reappears shortly after in warm weather and in a comparatively idle mare on good feeding, it is less significant, while the persistent absence of heat under such conditions may be usually accepted as proof of conception.

An unwonted gentleness and docility on the part of a previously irritable or vicious mare, and supervening on service, is an excellent indication of pregnancy, the generative instinct which caused the excitement having been satisfied.

An increase of fat, with softness and flabbiness of muscle, a loss of energy, indisposition for active work, a manifestation of laziness, indeed, and of fatigue early and easily induced, when preceded by service, will usually imply conception.

Enlargement of the abdomen, especially in its lower third, with slight falling in beneath the loins and hollow-ness of the back, are significant symptoms, though they may be entirely absent. Swelling and firmness of the udder, with the smoothing out of its wrinkles, is a suggestive sign, even though it appears only at intervals during gestation.

A steady increase in weight (one and one-half pounds

daily) about the fourth or fifth month is a useful indication of pregnancy. So is a swollen and red or bluish-red appearance of the vaginal mucous membrane.

From the seventh or eighth month onward the foal may be felt by the hand (palm or knuckles) pressed into the abdomen in front of the left stifle. The sudden push displaces the foal toward the opposite side of the womb, and as it floats back its hard body is felt to strike against the hand. If the pressure is maintained the movements of the live foal are felt, and especially in the morning and after a drink of cold water or during feeding. A drink of cold water will often stimulate the fetus to movements that may be seen by the eye, but an excess of iced water may prove injurious, even to the causing of abortion. Cold water dashed on the belly has a similar effect on the fetus and equally endangers abortion.

Examination of the uterus with the oiled hand introduced into the rectum is still more satisfactory, and, if cautiously conducted, no more dangerous. The rectum must be first emptied and then the hand carried forward until it reaches the front edge of the pelvic bones below, and pressed downward to ascertain the size and outline of the womb. In the unimpregnated state the vagina and womb can be felt as a single rounded tube, dividing in front to two smaller tubes (the horns of the womb). In the pregnant mare not only the body of the womb is enlarged, but still more so one of the horns (right or left), and on compression the latter is found to contain a hard, nodular body, floating in a liquid, which in the latter half of gestation may be stimulated by gentle pressure to manifest spontaneous movements. By this method the presence of the fetus may be determined as early as the third month. If the complete natural outline of the virgin womb cannot be made out, careful examination should always be made on the right or left sides, for the enlarged horn and its living contents. Should there still be difficulty the mare should be placed on an inclined plane, with her hind part lowest, and two assistants, standing on opposite sides of the body, should raise the lower part of the abdomen by a sheet passed beneath it. Finally, the ear or stethoscope applied on the wall of the abdomen in front of the stifle may detect the beating of the fetal heart (125 per minute), and a blowing sound (the uterine sigh), much less rapid and corresponding to the number of the pulse of the dam. It is heard most satisfactorily after the sixth or eighth month, and in the absence of active rumbling of the bowels of the dam.

Duration of Pregnancy.—Mares usually go about eleven months with young, though first pregnancies often last a year. Foals have lived when born at the 300th day, so with others carried till the 400th day. With the longer pregnancies there is greater probability of male offspring.

Hygiene of the Pregnant Mare.—The pregnant mare should not be exposed to teasing by a young and ardent stallion, nor should she be overworked or fatigued, particularly under the saddle or on uneven ground. Yet exercise is beneficial to both mother and offspring, and in the absence of moderate work the breeding mare should be kept in lots where she can take exercise at will.

The food should be liberal but not fattening; oats, bran, sound hay, and other foods rich in the principles which form flesh and bone being especially indicated. All ailments which tend to indigestion are to be especially avoided. Thus rank, aqueous, rapidly-grown grass and other green food, partially ripe rye grass, millet, Hungarian grass, vetches, peas, beans or maize are objectionable, as is over-ripe, fibrous, unnutritious hay, or that which has been injured and rendered musty by wet or that which is infested with smut or ergot. Food that tends to costiveness should be avoided. Water given often and at a temperature considerably above freezing will avoid the dangers of indigestions and abortions which result from taking too much ice-cold water at one time. Very cold or frozen food is objectionable in the same sense. Severe surgical operations and medicines that act violently on the womb, bowels or kidneys are to be avoided as being liable to cause abortion. Constipation should be corrected if possible by bran mash, carrots or beets, seconded by exercise, and if a medical laxative is required it should be olive oil or other equally bland agent.

The stall of the pregnant mare should not be too narrow so as to cramp her when lying down or to entail violent effort in getting up, and it should not slope too much from the front backward, as this throws the weight of the uterus back on the pelvis, and endangers protrusions and even abortion. Violent mental impressions are to be avoided, for though the majority of mares are not affected thereby, yet a certain number are so profoundly impressed that peculiarities and distortions are entailed on the offspring. Hence there is wisdom shown in banishing particularly colored or objectionably-tinted animals and those that show deformities or faulty conformation. Hence, too, the importance of preventing prolonged acute suffering by the pregnant mare, as certain troubles of the eyes, feet and joints in the foals have been clearly traced to the concentration of the mother's mind on corresponding injured organs in herself. Sire and dam alike tend to reproduce their personal defects which predispose to disease, but the dam is far more likely to perpetuate the evil in her progeny which was carried while she was personally enduring severe suffering caused by such defects. Hence an active bone spavin or ring-bone, causing lameness, is more objectionable than that in which the inflammation and lameness have both passed, and an active ophthalmia is more to be feared than even an old cataract. For this reason all active diseases in the breeding mare should be soothed and abated as early a moment as possible.

THERE are fifty-three cities in Brazil which have a population of 5000 and upward, thirty-one which have a population of over 10,000, fourteen of over 20,000, seven of over 40,000. Para has about 60,000, Sao Paulo 70,000, Pernambuco 150,000, Bahia 180,000 and Rio de Janeiro 407,000.

AGRICULTURAL ENGINEER.

Land Reclamation by Warping

The term "warping" is used in England to designate the improvement of low lands by deposit of sediment. Those who have such enterprise on hand in California will be interested in the following account of English experience:

From the many inquiries of my customers, it is evident that the term "warp land" is but little understood by those who reside in distant counties and foreign countries. Indeed it would be unreasonable to suppose that it could be otherwise, seeing that the source from whence warp is derived is entirely local. I have therefore thought that it may not be wholly without interest to some if I offer a brief description of it and the process by which it is made, to which I beg to invite the favor of a perusal.

Where warp is at command there is no method of raising low-lying and worthless lands that is so convenient and effective as warping.

The River Humber is the great reservoir from whence this apparently inexhaustible supply is obtained.

The water of this broad and voluminous estuary is profusely and uniformly mixed with a peculiar kind of yellowish mud called warp. Some geologists regard this deposit as the waste of the Diluvial Till of the Holderness coast. Others consider it to be the river silt "churned" up and turned back by the tides of the Humber.

The Humber drains the most of Yorkshire and much of several other counties, and receives incalculable quantities of the soil of these counties from its tributaries in a state of suspension, and by the action of the tides is thoroughly mixed and deposited at the bottom and sides, and also in large land banks in various parts of the vast area of this river.

This compound, the Humber, by the force of its tide, conveys and reconveys to the lower portions of the Trent and Ouse, and also to the tributaries of the latter, from which thousands of acres of low and in many instances quite worthless land, lying on the borders or inland, at distances varying from one to seven miles, have been covered one, two and even three feet thick with warp and converted into land of average quality and fertility; and yet, notwithstanding the fact that several thousand acres of such land have been made, requiring millions upon millions of tons of this deposit in its creation, the waters of these rivers are to all appearances as fully surcharged with warp as they ever were. This, no doubt, must be attributed solely to natural causes, such, most probably, as are set forth in one or both of the theories above referred to.

The soil most frequently improved by warping is peat, but any inferior land being contiguous to any of the above-named rivers, and lying sufficiently low to admit of its being flooded to a depth of two to four feet, may be raised and greatly improved by the process.

In order to carry out these improvements three things are necessary. First, that the land to be improved shall be situated within a practical distance from one of the rivers above referred to; secondly, a sluice at the river, to open and shut so as to take in the tides or keep them out at pleasure; and, thirdly, a canal or "warping drain" to convey the water to and from the land to be warped.

The size of a warping sluice varies from six or eight feet square to twice these dimensions, and the width of the canal from thirty feet upwards.

The largest sluice and canal ever made for the purpose is the one by which the principal part of this immediate neighborhood was warped, each 10 ft. wide by 20 ft. deep, through which numbers of vessels of nearly 100 tons burthen have passed, bringing cargoes of manure from Hull, London, and elsewhere, and taking out a return cargo of potatoes for the London and other markets.

This canal is nearly 100 ft. in width, and is continued for a distance of about seven or eight miles, warping, and thereby converting bad land (chiefly peat) into good, on both sides its course.

When the land to be warped is not under cultivation, the necessary preparations may be made at any time, but when the reverse is the case, it is of course needful to defer the work until after harvest, when the land is surrounded by an embankment varying in height from 3 ft. to 6 ft., according to circumstances, the internal canals or inlets cut, etc.

The area to be warped may vary from thirty to forty acres (a very primitive method) to three or four hundred, according to the size of the sluice and canal.

All the necessary preparations having been completed, the doors of the sluice are thrown wide open at low water to the full force of the rising tide, which is conducted by the canal to the land to be warped.

When warp is in the rivers or warping canals it is impossible to distinguish its various constituents one from another, but as soon as the tide has reached the land and begun to spread itself over a larger area, the force of the current is very considerably weakened, and the heavier particles begin at once to fall to the ground; and whilst the medium are carried somewhat further, the lightest float to the more remote portions of the inclosure.

One of the peculiarities of warp is that those particles which when in the water are heaviest make the lightest and most friable land, and *vice versa*. Hence it is highly necessary, when the water has reached the land, that a portion of it be confined in smaller inlets or canals, and thereby conducted to the various parts of the inclosure, before being allowed to expand over the entire area, by which means the warp is more evenly distributed and a more uniform quality of land is the permanent result.

Another peculiar characteristic is that although it produces grain of excellent quality, yet it is somewhat varied in color. Especially is this the case with all wheats, and gives, even to my own, which is all the product of carefully selected parent ears, the appearance of being of two kinds—the lighter warp producing the brightest, and the heavier

the darkest colored grain; but this dissimilarity in color at once disappears when grown on other soils.

The length of time required for warping a piece of land depends on several circumstances, viz., the thickness of warp it is necessary to lay on in order to raise the land sufficiently high to drain well in times of heavy and continuous rainfall, the distance the land lies from the nearest available supply, the state of the weather—dry seasons being much the best, the tides then containing a much larger percentage of warp than in wet ones; the area inclosed, and the capacity of the sluice and canal. The average duration of the process may be put down at from two to three years. In the spring and summer there is a larger proportion of warp in the water than in the winter, in consequence of the rainfall being usually much less in these seasons of the year. The flood tides—at the new and full moon—both in summer and winter contain a far larger quantity of this deposit than the "neap," owing to the much greater volume of water that then comes up from the sea, the violence of which stirs up the warp that during the neap tides had partially settled to the bottom of the Humber. The work is performed at one or two operations, according to circumstances, the second warping taking place after an interval of from five to ten years. The double process invariably makes the best finish of the land, but it is a great inconvenience to the occupier to lose the use of the land twice, to say nothing of the many heavy expenses that fall on him each time the land is given up to him by the warpers, and has to be again divided into fields, old ditches reopened, or new ones cut, the land drained and put under a proper course of cultivation.

Although warp land will not grow wheat or other cereals of more than about ordinary quality, yet as a "change" of seed for all other soils it stands unsurpassed, if not unequalled; and that this is the case is most satisfactorily proved by the fact that the demand for my wheat and barley for seed in 1875 was about 300 per cent over that of 1874, and the quantity taken by my customers in 1876 was considerably more than double that of 1875.

CORRESPONDENCE.

Sprinkling Roads.

TO THE EDITOR:—The economic value of the proverbial ounce of prevention is illustrated by nothing more clearly than by the expenditures for preserving the roads. The gospel of good roads has been preached persistently in the Eastern States for a number of years and in that section of the country has resulted in marked improvement in the highways. But in the newer communities of the Western States there has not been a proportionate degree of progress. In some of the counties of this State there has been increased attention to the public roads, and some improvement has been noticed. In the county of Santa Clara the roads are in better condition than in any other part of the State, with the result that that county has acquired a reputation far beyond its boundaries for progressive enterprise and public spirit.

The advantages to be derived from good roads are manifold. A citizen of the State of Kentucky recently remarked: "I think that one great cause of the prosperity of Kentucky lies in her excellent system of roads. Take the city in which I live, for instance (Paducah). We have four big pikes or macadamized and well-graded roads running out from the city. On a rainy day, when the farmer can't plow, he'll hitch up his team, put a hogshead of tobacco or a load of corn on his wagon and come to town. He saves a whole day, saves his team and his wagon, and his temper, and the town merchant gets the benefit of his trade." These remarks epitomize the economic value of good roads. They save money or its equivalent in every way. The expense of repairing vehicles, the wear and tear of horseflesh, and the time wasted each year through defective roads would more than pay for the construction of good roads that would reduce these expenses to a minimum for a number of years.

Apart from these direct advantages, the indirect benefits of good roads are very great. Santa Cruz is the garden county of the State. Its scenery, combining mountain, valley and shore, is unsurpassed anywhere. It is the natural summering place for this side of the continent, and was for many years the leading, and almost the only, seaside resort of California. Good drives will do more to attract this class of people than will any other attraction. The bicycle has become a popular form of amusement and its popularity will continue to increase. But the wheelmen will not come where roads are not in good condition. At the present time San Jose is in almost every case the extreme point in this direction for bicycle runs along San Francisco bay. They object that the roads in this county do not tempt them to extend their rides in this direction.

These considerations affect the temporary visitor, but they are even more important in influencing the permanent settler. The man who is looking for a home will be influenced by climate, soil and surroundings; but he will also be influenced by facility of communication. Good roads will do more than anything else to increase the inflow of desirable settlers to this county.

It is not to be supposed from all this that Santa Cruz county has no good roads or that its roads are in worse condition than those of other counties. They are not so good as they ought to be. There is considerable room for improvement, and even more necessity for wise expenditure to preserve and make good what has already been spent on the roads. The expense of repairs should not be grudgingly appropriated, because it will in every case save many times the amount that will later be required to repair the damage occasioned by delay.

One of the smallest expenses connected with the preservation of the roads, and at the same time probably the most important of all, is that for sprinkling during summer. With the dry summers of California the roads begin to be

ground into dust early in the spring. A little water at this time will arrest the destruction. But if the roads are not sprinkled the dust is ground deeper and deeper as the summer advances; travel over the roads becomes disagreeable, deep ruts are formed, and when the rains of winter come the dust is washed away or mixed into a deep sticky mud; the ruts become water-ways and are washed deeper and deeper. Then the expense of repairing is ten times what the expense of sprinkling during the summer would have been. The wisest economy is that which prevents waste, and sprinkling roads during the dry season is an extreme example of this kind of economy.

Aptos, Cal.

A. P. STANTON.

History Repeating Itself.

TO THE EDITOR:—There is much in the history of the Roman Empire during its long struggle for independence and liberty that resembles the existing state of affairs in our country. For instance: In Rome, 509, B. C., monarchy under the Etruscans ruled supreme. But this state of affairs came suddenly to an end and the monarchical yoke was thrown off by the formation of a republic and a constitutional form of government adopted. In this new republic the people elected as their rulers two consular departments to frame and administer their laws, consisting of the upper and lower houses, in the aggregate comprising 300 members, of which the senatorial department contained 164 electors who were elected for life. These members were chosen from the richest and most aristocratic portion of the people. The assembly or lower house was composed of the medium and lower classes—artisans, tradesmen, farmers and laborers, comprising 125 members; 164 aristocrats of the Senate chamber were from their wealth and influence—all powerful. They had each of them quite an army of retainers and henchmen. They not only claimed, but succeeded in securing nearly all the offices of power, trust and emolument. The votes of the citizens when not cast for the nominees of the aristocratic party were invariably counted out, or at the polls the voter was bulldozed into voting for the nominee selected by their aristocratic rulers.

Political clubs were organized and in operation as at date in this country, the bosses receiving their instructions from their lords and masters as to the manipulation of the ballot box. The petitions of the citizens' masses sent to the senatorial halls for relief were not read, but treated with scorn and contempt, and were either pigeon-holed or thrown into the waste basket.

This state of affairs naturally caused strife and trouble. The lower classes were maltreated, beaten and maimed by the armed retainers of their aristocratic rulers. These retainers, as in our country, represented the police force. The masses were taxed to that extent that they found it extremely difficult to provide food, clothing and shelter for their families. The laws were so stringent that in default of dues the debtor was thrown into prison and his lands escheated to the State or were confiscated by the creditor. The prisons were overcrowded with the so-called pauper laborer, who had no other recourse to earn a livelihood but to enlist as a common soldier in the army, which was officered and controlled by the aristocratic Senators. These plebeian soldiers, while in the wars of conquest which were common at that time, had their families at home, who were poverty-stricken. The soldier on his return from the wars found that his land and home had been confiscated and sold for taxes and dues. This state of affairs continued until 494, B. C. When the poorer classes found themselves reduced to so pitiable a condition, they decided to separate and form a new colony, and at an agreed and given signal they assembled en masse without arms and marched out of the city, establishing their colony and building a new city on the site of the sacred mount, thereby leaving their patrician countrymen masters of the situation in Rome proper to administer to their wants and necessities as best they could. The aristocratic Senators and their henchmen saw that they had gone too far, and they compromised with the people by the appointment of tribunals selected from the masses. The persons composing the tribune were inviolate and held sacred, and their houses were declared houses of refuge both by day and by night. The members of the tribune were granted the right of veto of any and all laws passed by the Senate that were considered injurious to the well-being of the masses. They were, however, not admitted to the senate chambers, but were compelled to remain in the street in front of the senatorial halls, which held their sessions with open doors, the crier proclaiming on the steps such laws as the Senators passed; and if they were found objectionable to the interests of the commonwealth, the tribunes shouted in loud voices the single word "veto," which was reported by the crier to the Senators in the senatorial chamber and acted upon. The persons of these magistrates or tribunes of the people were considered as inviolate as the ambassadors of a foreign power.

In fact, the conditions that existed in Rome at that time were not unlike the conditions now existing in our own republic. For instance, if we the people send a petition signed by the majority of our citizens to our representatives in Washington, asking for reform in the administration of our laws, and stating our grievances, the said petition is either pigeon-holed or thrown into the waste basket unread; and if we send a peaceable and unarmed delegation of our people to our capital asking for relief or a modification of our laws, they are not permitted a hearing either in the senatorial halls or on the steps of our capitol, but our delegation is arrested and imprisoned for some fancied and ridiculous violation of the law of trespass relating to accidentally stepping on the sacred grass plat of our capital in Washington, which is or should be the common property of our whole nation regardless of a few spears of grass that may be trodden upon by some one member of our delegation. They are not even permitted to shout the word "veto" as the Romans of old did in the streets and on the steps of their capitol.

JAMES H. CROSSMAN.

545 Baldwin Hotel.

General News Notes.

SENATOR HILL of New York is fixing up a little tariff bill of his own.

A WOMAN with a baby has "earned" \$15 a day begging in Golden Gate Park.

GOV. WAITE wants Mexican dollars coined to be used as legal tender in Colorado.

GOVERNMENT VAULTS now contain \$790,826,660; a year ago they held \$756,544,116.

SENATOR JOHN P. JONES of Nevada will shortly issue an address on the silver question.

THE entire town of Manchester, N. J., was sold at auction last Wednesday, in foreclosure of a mortgage.

KELLY says that when he gets to Washington he'll keep off the grass, and deliver a speech from a balloon.

JOHN FRICHARD, superintendent of the Denning mine, near Black Diamond, Washington, was killed by a car last Tuesday.

THE bituminous coal strike still continues. Pennsylvania mine owners intend to employ outside men, and further trouble is feared.

TWENTY-DOLLAR PIECES which have been hollowed out and a plate of brass inserted, are making their appearance in the foothill towns.

WHEAT has dropped to fifty-three cents in Chicago, the lowest in seventy years. The simultaneous drop in silver is doubtless "a mere coincidence."

THE American Railway Union is being introduced in Los Angeles and the employes of the Southern Pacific railroad are joining it in large numbers.

THE ocean beach near Ocosta, Washington, is reported alive with men and boys panning out flour gold from the sands. They claim to be realizing something worth while.

ON the 20th ult. there was in European banks \$1,766,100,000 in gold and silver; on the same date last year there was \$1,631,200,000. Of this amount there is \$120,000,000 more gold than one year ago.

HIGH-WATER MARK has been reached on the pension business. From now on the payments will be less. Pensions have taken about forty-eight per cent of the entire income of the Government since July 1, '93.

GENERAL SUPERINTENDENT JAMES E. WHITE of the U. S. Railway Mail Service has decided that all railway postal clerks must accept matter offered them at the cars on which postage has been properly paid.

IN the *Colliery Engineer*, Prof. Lakes says that a resurrectionist would have a profitable profession in West Africa, for there are millions of pounds worth of gold buried in the graves of chiefs and principal men.

A BILL has been introduced in the Legislature of Ontario, with a very reasonable show of its passage, exempting from Government royalty forever all mineral locations made in the province for the next five years.

CORNELIUS VANDERBILT and thirty other New York millionaires have opened a loan office. Money will be loaned on personal property for the full value of the goods pledged at the rate of one per cent interest per month.

THE Bimetallic Convention, now in session at Washington, has adopted a resolution in favor of the free coinage of silver in the ratio of 16 to 1, and declaring support only to candidates who pledge themselves to vote for free coinage.

DIRECTOR PRESTON of the United States Mint estimates the world's production of gold for 1893 at \$152,439,207, of which the United States contributed nearly \$36,000,000, Australia and South Africa following in second and third positions.

THE conductors and motormen of the Atlantic Railway Company, in Brooklyn, failed to array themselves in new summer uniforms last Sunday, and the entire system, embracing eleven lines, is tied up and 1000 men are out of employment.

AN Arizona paper says: "The time is now ripe for the yearly discovery of rich gold rock on the desert hundreds of miles from water. Beware of the desert finds in summer and the discoveries of rich mineral in the ice-bound mountains in winter."

THE general report is that on the occasion of the recent stage "hold up" near Angels there was only bullion to the amount of \$15,000 aboard. It transpires, however, that there were five bars of bullion, worth \$30,000 each, and some chlorine gold, making a value of \$178,000, being two weeks' cleanup of the Utica mine.

JOSEPH PIERCE, an American citizen of Meriden, Conn., has been in this country since he was ten years old, served through the Civil War, and is now on the pension rolls; but as he was born in Canton, China, he has been ordered by the Internal Revenue Collector of Meriden to register as a Chinaman under the Geary act. Joseph objects.

A BILL has been introduced in the House amending the act incorporating the Maritime Canal Company of Nicaragua. The bill provides that the stock of the company shall consist of 1,000,000 shares at \$100 each. The Secretary of the Treasury is to subscribe for \$70,000,000 of the stock of the company, and pay for it at par by the issue of United States notes. The stock so issued shall be full paid and non-assessable. Six million dollars of the stock is to be issued to the Government of Nicaragua, and one-half million dollars of stock to the Government of Costa Rica, according to the terms of their respective concessions heretofore made. Of the remainder of the stock (\$22,500,000), \$7,000,000 is to be issued to persons and corporations designated by the company, and the remainder of the stock is to be deposited in the treasury of the company until Congress shall decide whether it desires to purchase it. In consideration of this act the company is to call in and cancel all the stock heretofore issued. To secure the proper application of the money authorized, the incorporating act is so amended as to provide that the board of directors of the canal shall consist of eleven persons, eight of whom shall be appointed by the President

THE HOME CIRCLE.

"Keep Humpin'."

I remember the time when I was a lad,
An' lived on the farm 'long with ma and dad;
In the long hot days how I'd have to boe
Out in the cornfield, row after row;
How I'd think of the fishes that lay in the brook,
An' I just a-longin' to take my hook
An' line, an' sprawl by that ole trout stream,
Fer I loved in them days to loaf an' to dream—
An' watch the fish a-jumpin';
Then I'd groan an' bemoan my unfortunate lot,
I'd go to my father an' say, "It's so hot—
Can't the corn an' pertatoes wait well as not?"
But my father, he'd say—
In a stern sort of way—
"Keep humpin'!"

Then I'd work with a will till each sep'rate row
Stood forth without airy a weed to show;
An' each little rock I would duly install
In its proper niche in the ole crumblin' wall,
An' I'd say to my father, as proud as could be,
"I've finished my work, dad!" an' then in high glee
Of I go, skippin' an' jumpin';
Then he'd say, "It's well done exceptin' one spot;
Now bring down them cows from the north pasture
lot—
There's no time to shirk a farmer has got,"
So my father would say
In a stern sort of way,
"Keep humpin'!"

Take this for your maxim, and may it e'er be
Deep-seated and firm as the roots of a tree;
Whatever your work, whether peddling corn
Salve or door-mats, or tootin' a horn,
Or sellin' of clothes lines or cloth by the yard,
You'll find that your duty'll be much the less bard
If you put to your labor the heft of your soul;
Half-hearted won't win—you won't fetch the goal
By occasional skippin' an' jumpin';
If you're fully determined, my friend, to "git there,"
You mustn't sit down by the wayside and swear;
You can gather more courage from a fervent prayer,
And, as father would say,
In a stern kind of way,
"Keep humpin'!"

—Rural World.

When Mollie Bathes the Baby.

When Mollie bathes the baby,
I lay my book aside
And watch the operation
With deep paternal pride;
I scan the dimpled body
Of the struggling little elf
For undeveloped points of
Resemblance to myself.

When Mollie bathes the baby,
She always says to me:
"Isn't he just as cunning
And sweet as he can be?
Just see those pretty dimples!
Aren't his eyes a lovely blue?"
And then, "You precious darling,
I could bite those arms in two."

When Mollie bathes the baby,
I always say to her:
"Look out now, don't you drop him,"
And she answers back, "No, sir!"
Then I talk about his rosy cheeks,
The muscles in his arms,
His shapely head, his sturdy legs,
And other manly charms.

When Mollie bathes the baby,
The household bends its knee,
And shows him greater deference
Than it ever shows to me.
But I feel no jealous goading
As they laud him to the skies,
For every one assures me
That he has his father's eyes.

—Thomas Bewsy Holmes.

A Fortunate Fire.

T was a very unfortunate morning at the Gibson farm, and Will Pinkham had been blamed for every misfortune that had happened. In the first place, the gobbler, which was the last survivor of a prize breed, though uncommonly fierce and unamiable, had in some way got out of the coop—the farmer protested that Will had left the door open—and pounced upon the back of a lady with a red shawl on who was visiting at the squire's. And the squire's hired man had thrown a stone at him, wounding him so that it was feared he would die. Then a whole pail of milk had been spilled at milk-pail time on account of Will's careless handling. Mrs. Gibson said, but in reality because the pail had rusted and suddenly given way. Dobbin had lost a shoe when Will was driving her home from mill, and Blackberry, the best cow, had hurt her leg very badly by stepping through a hole in the floor which Will had forgotten to mend.

It was of no use, Mr. Gibson declared; the boy would never make any kind of a farmer, and as for help, he was just good for nothing. So he told him he might as well go back to his uncle's, as he could not keep him any longer. Doubtless Will never would make a very good farmer; he was hardly strong enough to do rough labor, and then he was very fond of books, and his

mind would wander away from his tasks. But if ever a boy tried to be faithful, it was he.

What to do now he did not know. It seemed almost impossible that he should go back to his uncle's, for he was very poor and had so many children of his own that he was sometimes at his wits' end to provide enough for them to eat. Will was only twelve years old, so of course there was nothing that he could do to earn his living unless some other farmer should take him in and give him his board for what chores he would be able to perform.

He was an orphan and had no relatives living with the exception of this one uncle, his mother's brother, and an aunt, the sister of his father. This aunt was a rich and eccentric maiden lady. Her father, who had been offended with his son, Will's father, when he died, left all his large estate to her; and when Will's uncle had taken him to her when he first arrived at Greenfield, she refused to recognize him at all, saying that it was very unlikely that he was her brother's son, and that she hated boys, anyway.

She lived in a little cottage which resembled that of Dame Clump in the old story-book. She had one maid servant, as elderly and grim as herself, and a parrot which she almost worshipped. The parrot was old and cross, but a remarkable talker. The village children were always anxious to obtain an interview with her, but the neighbors were made angry by her not altogether polite remarks when they passed the house in summer and the cage was hanging out of doors.

The congregation in the church, which was very near, were disturbed by her noise when the doors and windows were opened, and many a time the life of Miss Caroline Pinkham's Poll had been seriously threatened.

Miss Pinkham never visited her neighbors or received them at her cottage. She did nothing but knit, knit, knit the whole day long, unless it was to work a while in her garden, a plot in front of the house not much larger than a pocket handkerchief, in which grew tall spikes of Adam and Eve, great red peonies, cinnamon roses and a quantity of sage and lavender.

It was a March day when Will was turned away from the Gibson farm, but almost as mild and bright as May, and as he went past the old lady's cottage on his way to his uncle's shop, Poll was out beside the front door taking an airing in the sunshine. It was the first she had enjoyed since early in November, and she seemed in a very lively and excitable state of mind.

"Hello, Poll!" shouted Will, at the same time executing a peculiar whistle which she usually imitated.

"Go away!" shrieked Poll; "no boys here!" This was an injunction which she heard and repeated very often. Then she commenced to declare herself "lovely Poll in a green dress," over and over again.

Will set up a loud and unearthly whistling which always provoked her, and she screamed with all her might and main as if trying to drown his efforts. But when he became silent, so did she. Then cocking her head on one side, she said meditatively, "He does look like brother Tom, he does, certainly," and upon this her mistress hurried out of the open door, and casting a look of scornful reproach upon Will, seized Poll's cage and bore it into the house.

"She must have heard my aunt say that," reflected the boy. "Papa's name was Thomas. But still I cannot see that she shows any signs of relenting. Well, if she doesn't," with a little thrill of independence, "I rather think I can take care of myself in a year or two, anyway. Perhaps she will be glad to own me, some time."

When he reached his uncle's shop he found out that the poor man had been very ill with rheumatism, and was still scarcely able to be out of bed, though he was working away for dear life at a patch on one of Farmer White's cowhide boots. He seemed greatly distressed that Will should have lost his place, and Will resolved that he would find another one in the course of a day or two, or go to the poorhouse. He would not be an additional burden to such a poverty-stricken household.

But though he spent all that afternoon in going from one farmer to another, no one wished to hire so young a boy, and there was nothing to do but go back to his uncle's and spend the night, at least.

It was a fierce, windy night after such a calm, bright day. Everything creaked and rattled. Clouds kept scudding across the round, white face of the moon, and the trees writhed and twisted as if they were in agony. Will went to bed early, but for the first time in his life he could not sleep. At first he thought it was because the room was so light, the window curtains being undrawn; then he thought it was because he was so

tired and discouraged. His five small cousins all in a row in one trundle-bed, like "Hop o' My Thumb" and his brothers, were clasped tightly in the arms of the "Sand Man," and their big brother in the bed with Will had not stirred since his head touched the pillow.

Will tossed and turned. He heard the clock strike nine, ten, eleven, and then not being able to endure such a state of things any longer, he got up and looked out of the window by way of a little diversion. The village lights were all out long ago, and no one was abroad in the sleepy roads. As there was no fire in the room and the March night was decidedly chilly, he was unable to prolong his stay at the window, however, and was just about to tumble disconsolately into bed again, when a little cloud of smoke over in the direction of the church met his eye and as he gazed upon it it became colored with a crimson shaft of flame.

"Good gracious! My aunt's house is on fire!" he exclaimed. And opening the window, he shouted, "Fire! fire! fire!" as lustily as he could, at the same time throwing on a portion of his clothing. Then, half-dressed and wild with excitement, he rushed out of the house and toward the scene of the disaster, rousing the people along the way with his loud cries. He and Farmer Jones, who lived in the house next his uncle's and who had been awakened by Will's alarm, were the first to reach the spot, but they were almost immediately joined by several of the neighbors. The wind was so high that the fire had gained rapid headway, and all the upper part of the cottage was wrapped in a seething mass of flame.

The men burst open the door, and, at the peril of their lives, rescued Miss Pinkham and Debby, who fortunately both slept below. They were stupefied by the smoke and seemed half-dazed on being dragged into the open air, though, even when first aroused, Miss Pinkham had the presence of mind to seize the box which contained her valuable papers and money, which she always kept under her pillow. But there was no fire engine in town, and no attempt was made to extinguish the fire, only to prevent it from going any further, and none of the household furniture was saved.

"Must everything go?" said the old lady, closing her withered hands tightly.

"I should think you'd be too thankful that your life was saved, to fret about anything else, and if it hadn't been for your nephew you'd have been burnt up with the house," remarked a blunt neighbor.

"Oh, Polly! Polly! My beautiful, blessed Poll!" shrieked Miss Pinkham, suddenly remembering her pet. "She's burning up, right here in the sitting-room window. Save her! Oh, I pray you, save her!"

"Too late, marm. The fire's gone so far 'twould be dangerous to step inside the building, and a miserable bird isn't of enough importance that a mam should peril his life to save her."

But Will felt a great pang of pity for poor Poll as well as for his aunt's agony on her account, and just then the bird's screams were heard above the crackling of the flames and the roaring of the wind.

Without pausing to reflect a moment he dashed in through the smoke-blinded doorway. The crowd, which had been too much paralyzed with amazement to hold him back, called after him in dismay.

"He'll never come out again, never!" they called.

But he did come out again. It seemed hardly the space of a moment before he reappeared, bringing Poll with him, who, judging by the noise she made, was still sound, and dropping her cage at the feet of her overjoyed mistress, he fell senseless to the ground.

When he came to his senses once more, he was lying on a lounge in the sitting-room of the parsonage, which was situated on the other side of the church, with several anxious faces bending over him.

"All right, now, sonny?" said his uncle, affectionately.

But before he was able to reply, the door was flung open and in rushed his aunt, the most comical figure that ever was seen, her venerable head still hidden in an immense nightcap and her long, lank person enveloped in a gray blanket.

"Oh, where is the boy? Where is my brother Tom's son?" she exclaimed. "Have I killed him?"

"Oh, no; he's better now. He was only overcome by the heat and excitement," said the minister, reassuringly.

Will lifted his head and smiled upon her.

"Oh, Will!" she cried, kissing him through her tears, "I've been an awfully hard, wicked old woman, but—I'm going to buy Squire Norton's place down to the Corner 'n' you shall come 'n' live with me 'n' go to the 'cademy 'n' have everything you want that I can provide for you. You do look like your

father—my poor, dead brother Tom—you look like him this minute!"

"He does look like brother Tom, he certainly does!" squeaked Poll, who was fast becoming restored to her usual lively state of mind.

And Miss "Caroline" Pinkham was as good as her word. From that night she was a changed and softened woman. Even Debby, the old servant, became less sour and grim, and the little household became as cheerful a one as any in the town. Will was very happy, for it had long been his heart's desire to go to the academy, and he was devoted to his aunt, who seemed to have transferred all her affection from Poll to him. Poll flourished bravely for many years, however, and she and Will were the best of friends to the day of her death.

Figures Show Differently.

In a curious article, "The Number of People Since Adam," the author asserts that "the whole surface of the globe has been dug over 120 times in order to get room for burial places." The *St. Louis Republic* don't believe this, and has gone into mathematics to prove its falsity. In 6000 years we have had 60 centuries, and in each century an average of three generations, or 180 generations in all, each being a generation of 1,500,000,000. Give to each man, woman and child a grave 5 feet by 2, or 10 square feet. A square mile contains something less than 28,000,000 square feet. If this last calculation be correct, you will have to have a cemetery 55 miles long by 10 wide for each generation. Now multiply this by 180, the whole number of generations since Adam, and you have a burying ground large enough for every human being that has died in the last 6000 years.

This vast cemetery, though awful to contemplate, would be but 1800 miles long by 55 miles wide, or, in order to get it in better proportion, say 220 miles wide and 550 long. In other words, a burying ground containing 100,000 square miles would be sufficient for the graves of every human being that has ever existed. The area of Missouri and Iowa combined should be amply sufficient for such a cemetery, with 22,425 miles left for walks and driveways.

If the calculation is carried out for 100,000 years instead of 6000, it will be found that the cemetery need only be a square of 1700 miles in extent each way. On this basis the United States east of the Mississippi river is large enough to furnish a grave for all the human beings that have died during the past 6000 and for 94,000 years to come.

The Southern Negro's "Jack."

One of the first questions asked by County Physician Wilder when the body of Dallas Stowe, the negro, was found hanging by a grapevine in the woods near town was: "Where's his 'jack'?" At this question the negro audience fell back as if getting away from a bomb that was about to explode. "What do you mean by his jack?" asked one of the white men present, "and why this commotion?" "Wait, and I will show you," said the doctor. He then felt in the pockets of the dead negro and brought out a tin box. He opened it, and it was found to contain a snake's head, a scorpion, a piece of iron, a rusty key, a bunch of "witch's yarn" and an ounce of salt. "This," said the doctor, "is the jack. Eight out of ten negroes carry them. With it they 'conjure' their enemies, throw a spell over them, and the average negro holds the jack in mortal dread. To show you your fear of it, just offer any negro here a dollar to put this box in his pocket." The offer was made, but no one would touch it. Dr. Wilder brought the box to the city and tried the darkies on it, but not one of them could be induced to touch it. The doctor hung this jack in his back yard, and says that his turkeys, chickens and woodpile are safe for this winter.—Charlotte (S. C.) News.

High-Bred Dogs By No Means the Most Intelligent.

So long as our dogs were employed in the labor or the organized recreations of man, the tendency of the association with the superior being was in a high measure educative. They were constantly submitted to a more or less critical but always effective selection, which tended ever to develop a higher grade of intelligence. With the advance in the organization of society the dog is ever losing something of his utility, even in the way of sport. He is fast becoming a mere idle favorite, prized for unimportant peculiarities of form. The effort in the main is not now to make creatures which can help in the employments of man, but to breed for show alone, demanding no more intelligence

than is necessary to make the creature a well-behaved denizen of a house. The result is the institution of a wonderful variety in the size, shape and special peculiarities of the different breeds with what appears to me to be a concomitant loss in their intelligence. It appears to me, in a word, that our treatment of this noble animal, where he is bred for ornament, is, in effect, degrading.—Prof. N. S. Shaler.

Gems.

Teach me, like thee, in various nature wise,
To fall with dignity, with temper rise.
—Pope.

Youth has spent his wealth, and bought
The knowledge he would fain
Change for forgetfulness and live
His dreaming life again.
—L. E. Landor.

Such help as we can give each other in this world is a debt to each other, and the man who perceives superiority or a capacity in a subordinate, and neither confesses nor assists it, is not merely the withholder of kindness, but the committer of injury.—Ruskin.

The weakest living creature, by concentrating his powers on a single object, can accomplish something. The strongest, by disposing of his over many, may fail to accomplish anything. The drop, by continually falling, bores its passage through the hardest rock. The hasty torrent rushes over it with hideous uproar and leaves no trace behind.—Carlyle.

Science is made for few men. Duty is the mistress of all men! they cannot be men without it.—W. E. Gladstone.

The effective life and the receptive life are one. No sweep of arm that does some work for God but harvests also some more of the truth of God, and sweeps it into the treasury of life.—Phillips Brooks.

If there be no enemy, no fight; if no fight, no victory; if no victory, no crown.—Savonarola.

Thy work this hour is patience.

I dislike monkeys; they always remind me of poor relations.—Henry Luttrell.

Put your trust in God but be sure to see that your powder is dry.—Oliver Cromwell.

Life would be quite tolerable if it were not for its amusements.—Sir George Lewis.

It does not signify much whom one marries, as one is sure to find the next morning it was someone else.—Samuel Rogers.

Archibald Forbes' Battle Picture from the Next Great War.

Let me briefly adumbrate the possibilities—indeed, I may say the probabilities—of the results of a great battle in the next great war, which is sure to be "short, sharp and decisive." The fighting has been prolonged and bloody, with the result that one side is definitely beaten, evacuates its positions and retreats more or less precipitately, leaving on the ground its wounded, none of whom could be cared for while the conflict lasted. The successful commander's ground is littered with his own wounded; he has them on his hands in thousands, and he has also on his hands the thousands of the wounded of the vanquished force which has gone away. The conqueror of the future, if he accepts the old-time conventional burden of his adversary's wounded, will become its victim. He will not accept the incubus. Is it to be imagined that the victor in such circumstances will think twice even about his own wounded, let alone the wounded of the other side? No. He is in the field, not to be a hospital nurse, but to follow up his advantage by hammering on the enemy who has departed, leaving his own wounded behind, and who may come back again to-morrow to strike him while clogged in the live and dead debris of yesterday's battle. The victor will hasten away to overtake or hang on the skirts of the vanquished army, leaving the wounded of both sides to be dealt with as may be possible by such surgeons as he can afford, in view of future contingencies, to leave behind, and to the ministrations of cosmopolitan amateur philanthropists of the Red Cross and kindred organizations. For there will be no more military bearer companies; in the hunger for fighting men, the 1000 bearers per army corps of the present will have been incorporated into a strong brigade with arms in their hands and a place in the fighting line.—Scribner's.

THE average senator smokes an expensive cigar. There is a 35-cent brand which sells more readily than any other in the Senate restaurant, and which is in great demand for committee-room lunches. The Southerners, who, as a rule, have to live on meager incomes, are the most expensive of all in their taste for tobacco.

A Knock-Out Blow.

He criticized her puddings and he found fault with her cake,
He wished she'd make such biscuit as his mother used to make;
She didn't wash the dishes, and she didn't make a stew,
Nor even mend his stockings as his mother used to do.

His mother had six children, but by night her work was done;
His wife seemed drudging always, yet she only had the one.

His mother always was well dressed; his wife would be so, too,
If only she would manage as his mother used to do.

Ah, well! she was not perfect, though she tried to do her best,
Until at length she thought her time had come to have a rest;
So one day he went the same old rigmarole all through,
She turned and boxed his ears just as his mother used to do.

—New York Sun.

Learning to Write.

"There is a good deal of nonsense about teaching children penmanship," said a business man, in a conversation the other day. "The one particular qualification that most of the youngsters who have applied to me for positions seem to pride themselves on has been their penmanship. It needed but one glance for me to see that they had been taught to write prettily, rather than plainly. I would very much prefer a clean, square-cut business hand to all of the commercial-college flummery and flourishes that were ever turned out. It is my experience that what is called a really fine penman is not by any means the most legible writer. There are too much spread out and flourish to the average so-called commercial-college hand, and I am glad to see a taste growing up in favor of a more compact, undecorated and simple style.

"I think, too, there should be a change in the way of holding a pen. Most children are taught to use the pen with the tips of the first two fingers and the thumb. If they would learn to hold the pen between the first and second fingers, there would be much less of what is known as writer's cramp and much less weariness when there are long jobs of copying on hand.

"Regularity and distinctness in handwriting would secure a young person a place when the most approved fashion in fancy penmanship might bar him out altogether.

"One of the most experienced officials in Washington once remarked that the commercial-college hand was a distinct disqualification in his department. His own handwriting was utterly devoid of flourishes, but as exact and legible as copperplate. Fads, fancies and flourishes do not win in the great battles of the world by the side of solid, substantial and commonplace genuineness."

Peculiarities of the Calendar.

An exchange has compiled the following peculiarities which are to be found in the calendar:

The calendar offers certain curiosities which are little known. The following are a few of them: No century can commence on Wednesday, Friday or Saturday. The month of October always commences on the same day of the week as the month of January. February, March and November commence on the same day of the week, whereas May, June and August commence on different days. These rules do not apply to leap years. The ordinary year is always finished on the same day of the week when it commenced. The years repeat themselves—that is to say, they have the same calendar—every 28 years.

AN EFFICACIOUS REMEDY for obstinate cases of insomnia is to lie flat upon the back and inhale and exhale deep, long breaths; take 30 or 40 of them, then turn on one side—preferably the right—and sleep will come before you know it, unless you have the pernicious habit of taking your work to bed with you. The facility with which we can rest and recuperate from great fatigue, either mental or physical, depends largely upon our power of dismissing thought and encouraging a state of vacuity. It is a question of habit, but one which is in every one's power to acquire; and of so great value that it is worth more than a slight effort to win. — From "Sanitarian," in Demorest's Magazine for May.

SUCH has been the growth of popular opinion in favor of the sudden disposition of the dead by heat that there are now in the country 18 incorporated cremation societies, and during the past ten years about 3000 cremations have taken place.

YOUNG FOLKS' COLUMN.

How Curious!

Said one little girl to another little girl
As proudly as could be,
"I'll tell you something very nice
That my papa told me:
He said I was the sweetest girl
That ever there could be!"

Said the other little girl to that one little girl,
"Why, now!—how can you be?
For that is just the very same thing
That my papa told me!"
(And neither was as sweet as my little girl,
As any one could see!)

—Tudor Jenks, in May St. Nicholas.

A Blue Jay's Journey.

It is such a pretty story that I wish you could read it just as Mrs. Olive Thorne Miller wrote it in her new book, "A Bird-Lover in the West." There are ever so many pretty stories in this book, but this one is especially pretty.

Mrs. Miller discovered, from her window, a blue jay's nest in the top of a tall pine tree. The little mother was hidden in the nest, only her tail showing. The father bird was so polite that Mrs. Miller makes us love him. He always gave the first bit of food to his mate, even when the baby birds were crying out for something to eat, after the manner of baby birds. At last one day the bird-lover saw that there was excitement in the little castle in the air on top of the tall pine, and she counted five little heads above the edge of the nest. How busy the father bird was from the first dawn of day until dark! He carried food to the nest in the top of the pine. One early morning Mrs. Miller saw one of the tiny birds standing on the edge of the nest. When he saw his father or mother coming with food, he fluttered his wings, showing how fast he was growing. Each night now it was harder to fit the little family in the nest. The mother bird would get them all fitted in, but some uncomfortable baby bird would stand up and step over his brothers and sisters, trying to get on top. This would cause great confusion, and the mother bird would have to begin all over again to fit in the family to the small nest. How do you suppose it would end? Mrs. Miller says that the mother bird would finally fix them all in and then sit down on top, and the baby birds would have to stay fixed. Mrs. Miller says the nest was "filled to the brim with beauty."

One day, eight days after she discovered the little birds, one stepped out of the nest bodily on to the branch beside the nest. There he stood and shook out his feathers. The next day he flew to a branch below the nest, beating and pluming his wings. He almost fell many times, but he clung to the branch and seemed to enjoy having plenty of room. He settled down on the branch, which the wind swayed, and when his father came with food he opened his mouth, expecting the usual attention, but his father took no notice of him. He looked very sorry and tried to get home, but decided at last that he would not. The next time his father stopped and fed the little wanderer, who seemed to grow stronger and flew to the next branch. He climbed twig by twig back to his home, and, after hesitating a minute, flew in and settled himself down into the nest, a very tired bird. He stayed a little time; perhaps he took a nap. After a time he appeared on the edge of the nest and flew away, never to come back.

The next day all his little brothers and sisters were restless, and they hopped out of the nest one at a time, scrambling back into the nest whenever they heard the father or mother coming with food. Finally they left the nest and did not go back. In the evening Mrs. Miller heard the voices of the blue jays as if in trouble, and she hurried out to help them. A little bird was on the ground, and the father and mother, knowing about cats and naughty boys, were in terror lest their baby should be stolen or killed. But

no one could help the birds; they did not know friends from enemies. At last the little bird climbed a tree until he found a branch. The father and mother bird kept close beside him, and cried out in fear and anger if any one approached him, until he was safely settled on the branch. You will love birds dearly if you learn to see their pretty, loving ways, and this book will help you.

Warmth From Paper Clothing.

The successful inventor is not always the man whose ideas are new. He is often the one who puts an old idea to a new and important use, incidentally improving it in detail. It is proverbial that a single newspaper spread over a bed on a winter night will give warmth to persons sleeping therein; and it is common for guards on elevated railway trains, for teamsters and for other people much exposed to cold to stuff the same material inside their coats for the same purpose; and they secure the same result. J. C. McLaughlin therefore said to himself one day, "Why not have a special paper for such uses?" And his answer to himself is a patent, taken out two or three months ago, for what he calls "fibre chamol." This is made from the best quality of chemical wood pulp, preferably spruce, treated by the Mitscherlich process. His product is paler than unbleached muslin, as thick as the kid from which shoes are made, almost or quite as pliable, tough enough to hold stitching, light in weight and very warm. This material is specially adapted for interlining of waistcoats, overcoats, jackets and skirts; although with a detachable chintz cover it may be used for bedcoverings and can also be worked up into garments not intended to go into the washtub. It is better not to have it exposed directly to wear, weather or water; but suitably covered, it promises to become serviceable as a substitute for more costly goods. Mr. McLaughlin claims that it is sufficiently porous to allow exhalations from the body to escape, yet close enough in texture to exclude dust. Warmth with lightness will be its strong point.

THE new rifle adopted by the Government is called the Craig-Jorgenson rifle. The infantry will be furnished first, and, as soon as possible, the cavalry will be supplied with the same arm. It weighs only eight pounds, and will kill a man at the distance of two miles. It is a breech-loader, and has a magazine that will carry five cartridges. The ball has a speed of 2000 feet per second, and with smokeless powder, with which it will be charged, it is claimed that the bullet will kill a man before the sound of the discharge reaches him.

"WHEN I sat at my desk in Sitka," said Governor Swineford of Alaska in a recent interview, "I was farther from Otter island, the westernmost point in Alaska, than I was from Portland, Maine. This may serve to give some idea of the prodigious dimensions of Alaska. But I can furnish a more striking one. If the capital of the United States were located in the center of the United States—that is to say at a point equidistant from Quaddyhead, Me., and Otter island, Alaska—it would be in the Pacific ocean, some 600 miles north by west of San Francisco."

A TEACHER asked a boy to explain, if he could, the difference between animal instinct and human intelligence. It was a pretty hard question, but the boy was equal to it. "If we had instinct," he said, "we should know everything we needed to without learning it; but we've got reason, and so we have to study ourselves 'most blind or be a fool.'"—Good News.

THE most profitable street railway in the world, says the *Electrical Review*, is the Broadway cable in New York, which is now said to be earning 50 cents per car-mile, the biggest record ever made by a street railway company.

Highest of all in Leavening Power.—Latest U. S. Gov't Report.

Royal Baking Powder
ABSOLUTELY PURE

AGRICULTURAL NOTES.

CALIFORNIA.

Alameda.

Livermore Herald: Flattering crop reports come in from all parts of the valley. The rain showers we had, together with the fine growing weather we have been having lately, insure our farmers much better crops than they expected two weeks ago. The grain and hay have made a wonderful growth within that time and our farmers are greatly elated. The orchards and vineyards have made corresponding progress and the cattlemen have had their share of good fortune.

Butte.

From a study of official reports the Oroville Register reports that Butte has 910 of the 24,000 acres of pears in California or one-twenty-sixth of all the pears in the State. She has in round numbers 3300 acres of the 55,000 acres of peaches in the State, or one-seventeenth of all the peaches grown in California. She has 165 of the 6729 acres of cherries produced in the State, or one-fortieth of what cherries we grow in California. We have 300 of the 19,000 acres of apples, or one-sixty-third of what apples California produces. Butte has 775 acres in olives, which is more than one-tenth of all the olives grown in the United States, the total being 7097 acres. Butte has 260 acres of figs, and in the whole United States there are but 4477 acres, which gives this county one-eighth of the figs produced in our whole country. Butte has 2700 acres of oranges, while the whole country has 184,000, so that Butte has one-sixty-eighth of the total acreage of the United States. Butte has 1588 acres of almonds, while the whole country has but 13,515 acres, thus giving this county more than one-ninth of all the almonds grown in the United States.

K. P. Troxel, of Durham, tells the Oroville Register that a great change is in progress in the grain country about Durham and Clayton, due to the low price of wheat and the fact that little or no profit is to be made by its production. Men that a few years ago never owned a cow, kept a pig or made a pound of butter are now keeping a few cows, sheep and poultry. They are beginning to plant alfalfa and to realize that there is more money in the Eastern or European manner of farming than in the California manner at the price wheat has been for the past few years. Some families in that neighborhood who have tested alfalfa find they can make a living from a limited number of cows and a small field of alfalfa. They have to live close perhaps and save every dollar, but a small capital invested in eight or ten cows and a little field planted to alfalfa is bringing them in a living. He is satisfied that a change is coming in this respect.

All the larger orchards around Chico, including the Rancho Chico orchards of John Bidwell, have been leased this year to Chinese, and the people of Chico are naturally not a little indignant about it. For several years past, during the fruit season, the orchards around that town have afforded employment to between 200 and 300 men, women and children. The wages paid, of course, were not very large, but there was no difficulty in securing all the reliable white help that the orchardists wanted. Now, however, this means of sustenance is about to be shut off. Gen. Bidwell, B. F. Allen and others have rented their lands to Chinese, and it is said that 300 coolies will be brought to Chico to do the work this year that has heretofore been done by white people. This will throw out of employment those who have worked in the orchards in previous years and will doubtless entail hardships upon many worthy people.

The Chronicle-Record, in speaking of this, is very indignant. That paper says: "We have no desire to interfere with anybody else's business; far from it. But there are certain duties which each and every man owes to his fellow men and society which he cannot escape nor explain away. Our own race and people are entitled to the first choice at self-support. They have families to support and the members of these families are the coming men and women of America (if the coolies don't take the country). If you have need for laborers, employ those who live here, have their families here, educate their children here and spend their wages here. These people have of inherent right the first call upon the labor which should support them and their families, being equal in other things with the Chinese, and the time is not far distant when they will assert this right unless justice is done them in the matter of employment."

Fresno.

From the Expositor: The prospects of the raisin-growers of central California have been greatly improved during the last few weeks. Not only have there been arrangements perfected by which the growers can get all the money they may need to care their crops, on reasonable terms and without putting their raisins into the control of commission men who would have absolute power to sell whenever they could get the cost of their commission and thus leave the producer in debt for freight, but there is a movement well started to get the packers together to agree on the terms of packing, grading and inspecting, so that all raisins can be sold according to grades honestly made and guaranteed by responsible concerns. This will operate to the advantage of the raisin business and be a great benefit to every honest grower.

Kings.

The Hanford Journal reports the organization of the Hanford Raisin Co. representing 1083 acres of bearing vines which last season produced 650 tons of good raisins. The directors of the company are M. M. Johnson of San Francisco, representing the Grangeville vineyard, 160 acres; Lee W. Foster of Oakland, representing the Silver Bow vineyard, 265 acres; B. L. Barney, Hanford, representing the Del Monte vineyard, 170 acres; P. McRea, Hanford, representing the McRea vineyard, 320 acres; John Kurtz, Lemoore, representing the Kurtz vineyard, 160 acres. The other members of the corporation are D. R. Cameron, Hanford, representing the Oakland and Hanford vineyard, 40 acres; and Dr. L. E. Felton of the Del Monte. The purpose of the organization is to do the packing of its members.

Los Angeles.

"L. E. M." writes as follows in the Pomona Progress: I think my experience in apricot-growing

may be a lesson to those who have come here and gone into this industry more recently. In 1890 I was urged by several of the best apricot-growers to thin my apricot trees, south of town. I thought I knew better than they, and was anxious to make all the money possible from my orchard. I, however, did do some thinning, but could not compel myself to pull off half the fruit that should have come down. As a consequence, I had a very large crop of apricots, and, except those from a few trees that were properly thinned, all went as second-grade fruit. Not only that, but the limbs of over 20 trees broke under such excessive weights, and other trees were ruined for several years by the damage done by the great yield. I have since been at work getting my orchard in good trim again, and this is the first year I have had a fine crop. Because of improper thinning of my apricots in 1890, I believe I have lost, first and last, \$500 or \$600.

Lassen.

A severe frost has laid low the cherry, apricot, apple, plum and strawberry crops in the vicinity of Susanville.

Monterey.

The Salinas Index does not look for a hay famine. It says: "It is said that alfalfa hay from Phoenix, Ariz., can be laid down at Santa Barbara and other coast points for \$14 per ton; also that good hay from Oregon can be delivered by water at San Francisco and other California ports for \$12 per ton. If such be true, then there is no danger of a hay famine in California, even with a crop failure here."

Orange.

Santa Ana letter: Unless all signs fail, Orange county will, the coming season, produce the largest deciduous fruit crop that it has for years past. The deciduous trees have a richer foliage than ever has been observed before, and the young fruit has set remarkably well. A prominent horticulturist said a few days ago that he never before had seen the foliage, on nearly all the deciduous trees in this valley, such a rich, dark green, so particularly healthful appearing, as they are at the present time. He attributes this condition of the trees to the remarkably cool winter this southern country has experienced, claiming that the trees are very like human beings, in that they need a mild change of climate at times in order that they may be more perfectly developed. He is of the opinion that if the past winter had been as most of the winters in California have been, the trees would not now show that unusual freshness and vigor that is so apparent even to the casual observer. However this may be, the outlook for the coming deciduous crop in this county was never better, and the season promises to be an unusually profitable one to the average fruit-grower.

San Luis Obispo.

A San Luis correspondent writes as follows to the Monterey Cypress: A good many horses and cattle have been driven here from the Salinas valley. Fred Partington sold the feed on his ranch for \$200, and Chris McWay sold his for \$170. Demas Soberanes has taken in 100 head of horses on pasture at \$1.50 a head per month. There is some Government land in the mountains not worth taking up, as it does not give much feed, and some parties have taken advantage of it and turned a lot of horses loose on this land. These horses are now encroaching upon the pasturage of parties who have moved up on their land, but have not got it all fenced in, so that their own stock will have to suffer.

At a meeting of dairymen of San Luis Obispo and Santa Barbara counties last week the question of wages was considered in a long and animated debate. Messrs. Hasbrouck, George and E. W. Steele, Tognazzini, Tanner, Spooner, O'Connor, Rigbetti and Bagley being especially prominent. The trend of the debate was that it was no longer possible to pay the wages which had been for many years customary. The business no longer warranted it. The prices now possible to be obtained even in good seasons were far below those of former years, while the wages paid would purchase for the laborer double or treble what it would then in clothing or luxuries. We are now in competition with the East, where wages were one-half what they were here, and the low freight rate offered no protection. It was inevitable that ultimately the dairymen would be eaten up, and even the employees would be out of their jobs. At the present time butter was costing to make in this county 16½ cents. It was necessary that the dairymen should unite in fixing a fair and just rate of wages. The debate finally resulted in the passage of the following resolution: Resolved, That it is the sense of this union that \$20 per month shall be considered the standard wages for milkers.

Santa Clara.

Fruit stealing by hoodlums has become so serious a practice about the Willows a public warning has been put forth to the effect that the thieves may look out for a dose of buckshot.

Santa Cruz.

The Pajaronian reports that a lot of Chinese pheasants has been received at Santa Cruz to be turned loose. If the Chinese pheasant multiplies here as rapidly as in Oregon, and with equal ferocity, the owners of poultry in the pheasant district will curse the day the new fowl was introduced. The male pheasant is a hurricane fighter and will clean out barnyard fowls in short order.

A meeting of fruit-growers of the Pajaro valley will be held at Santa Cruz on the afternoon of June first, to organize a local union to co-operate with the State Fruit Exchange.

Sonoma.

Bennett Valley letter to the Santa Rosa Democrat: John Burnham says he will not make wine this year. His cellar is to be converted into a dairy house and the cooperage is for sale. If there is no market for his growing crop of grapes he proposes to turn stock into his vineyard this fall.

The Sonoma Horticultural Society and the fruit-growers' clubs at Santa Rosa and Fruitville have endorsed the projected local Union to co-operate with the State Fruit Exchange.

Santa Rosa Republican: Wm. Warren, a prosperous farmer in this district, is very enthusiastic on the subject of irrigation, and has invented quite an ingenious irrigating apparatus, too. It is very simple in its construction, but certainly does the work.

Six wells were bored or drove 22 feet deep. These are in a circle, in the center of which is a horse-power, to which the six pumps are attached by levers. Every time the horse makes a circle, 16 revolutions are made by each pump, and the horse does the round trip three times every minute. Mr. Warren avers that from the six wells he can pump 3000 gallons of water per hour, and that 12 pumps may be easily operated by the same power, so 6000 gallons of water could be distributed over the land to be irrigated every 60 minutes, and Mr. Warren believes that the day is not far distant when the orchardists of Sonoma will be a unit in advocating irrigation, so beneficial does he believe its results will prove.

The Healdsburg Tribune of the 24th says: Last Thursday the Magnolia cannery packed its first fruit of the season and yesterday morning at 7:30 o'clock work began with cherries of the very best grades. The number of hands employed at present is 38, and the force will be increased in a few days.

Sutter.

At a general meeting of farmers held at Yuba City last Tuesday a labor union was organized to promote the employment of white men in the place of Chinese. A resolution, upon which the union is based, declares as follows: "Our only purpose is to bring about such conditions as will make it to the interest of employers to give the preference to white labor, and to enable them to dispense with the labor of Chinese and Japanese, to the mutual benefit of employers and employed, and to the upholding of trade and general prosperity of the county. We propose to do this by the establishment of a white labor union, with a business department to be known as a white labor bureau, as a means of communication between employers and those seeking employment. And we earnestly invoke the co-operation and sympathy of all employers of labor in carrying out the purposes of this organization."

According to the Yuba City Farmer, things in Sutter county are very hopeful. The general outlook for the harvest time appears quite promising at present in this county, even with the hard times and drought abroad in the land. Our grain crops, unless there is unfavorable weather coming in the near future, will make over 75 per cent of the average yield, and from present aspects will turn out extra quality, if not full quantity. The principal shortage will be on the high upland or adobe plains, while along the rivers the grain never looked better at this season. The fruit outlook is far above the average, with a large yield and prospects for good prices. The reputation that this county has horticulturally will turn hundreds of thousands of dollars annually this way. Besides these important harvests there will be corn, buckwheat, hay, vegetables in abundance to send to markets, and other minor industries in a like prosperous condition. For the coming harvest time the people generally in this county have certainly a promising outlook as compared with other sections of the State.

Yolo.

A Winters correspondent writing to the Dixon Tribune says: The farmers hereabouts think that the grain crop will be almost a third larger than was expected a month ago. The damp, cool weather came in the very nick of time. Ours is truly a favored land.

Davisville letter: Crop prospects are brightening, and even the most chronic growler is inclined to smiles and gratitude. Geo. Hamel tells me that a field of grain which two weeks ago scarcely reached his instep, and of which he had no hope, is now waist high and very promising.

Davisville letter in Woodland Democrat: A farmer describes the unemployed hereabouts as made up of three classes. There are a small number of men who are really anxious for work and will take a job at most any price. Then there are the professional tramps, who make a business of it the year round. They are not apt to commit crimes, but they won't work if you give them a chance. Between these two there is a middle class that is very vicious, and it is from these men that the farmers have the most trouble in dealing with them.

Blacks letter in Woodland Democrat: Hungry Hollow farmers report that crop prospects are improving every day. The weather is all that could be desired, and the wheat fields, while not very long, are full of berries that promise to be very plump.

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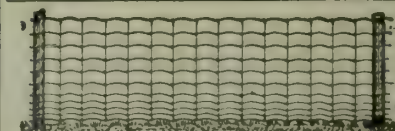
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A MICHIGAN GOVERNOR TESTIFIES.

HAMBURG, MICH., May 7, 1894.
SIRS—The strip of Page Woven Wire Fence put up by your Mr. C.W. Scott for me, is attracting much attention and favorable comments from my neighbors. The question of fencing is one of deep interest in this section. Our fences are old and poor; we have not the timber to make rails and lumber is too expensive. Wire seems to be the material we must use and your fence—the Page Woven Wire—seems to me the best yet invented. It is neat in appearance, durable and safely keeps all kinds of stock and really is the most economical fence a farmer can build. I believe it is the coming fence.
I am very truly yours,
EDWIN B. WINANS.

PAGE WOVEN WIRE FENCE CO., Adrian, Mich

ORANGE CULTURE IN CALIFORNIA.

Now that the interest in the culture of the orange is extending so as to embrace nearly all parts of the State, a book giving the results of experience in parts of the State where the growth of the fruit has been longest pursued will be found of wide usefulness.

"Orange Culture in California" was written by Those A. Garey of Los Angeles, after many years of practical experience and observation in the growth of the fruit. It is a well-printed hand-book of 227 pages, and treats of nursery practice, planting of orange orchards, cultivation and irrigation, pruning, estimates of cost of plantations, best varieties, etc.

The book is sent post-paid at the reduced price of 75 cents per copy, in cloth binding. Address DEWEY PUBLISHING CO., Publishers, 220 Market St., San Francisco.

MONEY TO LOAN ON FARMING AND ORCHARD PROPERTIES

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Electricity in Plants and Fruits.

There is no doubt, says *Le Genie Civil*, that nature makes use of an as yet ill known but important property of electricity in its different forms for making plants grow, flowers bloom and fruits ripen. It is a secret that it will disclose to us one of these days. Some quite curious experiments in electric culture have already been made in different places, and results have been obtained that appear to be satisfactory, but they have not yet the definiteness and permanence that would permit of profitably converting our fields and kitchen gardens into electric batteries.

It has been ascertained, however, that fruits are in a continual electric state. Upon puncturing them at the top and bottom and closing the circuit, it has been possible, by means of a multiplier, to study the variations of such electric state. The ascending sap of trees and the cortical sap, which have not, as well known, the same chemical composition, react upon each other and afford marked electric phenomena. From the pith to the cambium the layers are less and less positive, and from the cambium to the epidermis they are more and more so.

What will be the result of future studies upon this subject undertaken with commendable patience? We can only make a surmise. In the intensive hothouses called forcing houses fruits are already obtained at all seasons, and the electric light is used for giving the forced plants the impression of the dawn and of the high and setting sun. They are very sensitive thereto.

Perhaps upon combining this external action with the passage of an appropriate current into a soil charged with chemical products that it would decompose, we might succeed in producing astonishing fruits and flowers in hothouses, and, with the wand, make forests grow in bare gardens. There is nothing improbable in such magic, seeing that electricity, according to experiments already made, plays a role as mysterious as preponderant in vegetation.

Insurance and Gambling.

Certain forms of wagers are approved at the present day universally by statute law. The most familiar forms are fire and life insurance. It is perhaps of interest to note here that those forms of wager, now so common and so universally approved, came into popular use slowly, against a strong current of disapproval, upon the ground that they were immoral. As late as 1803, in the State of Pennsylvania, life insurance policies in which the assured had no interest were held to be void.

There is no form of contract which comes nearer to the essential features of a wager than fire insurance. What does a person buy for the premium which he pays? No certain return, only this: That in the remotely possible event that the building insured shall be burned, then the insurer agrees to make good the loss up to the amount of the policy. The amount of premium bears the same ratio to the sum guaranteed as the chance of burning does to the chance of not burning.

THE internal temperatures of trees has been investigated in Belgium by N. W. Prinz, who finds that, as a rule, a large tree is warmer than the air in winter, and a little colder than the air in summer. The mean annual temperature of a tree is practically the same as that of the surrounding air, but the monthly means differ by several degrees.

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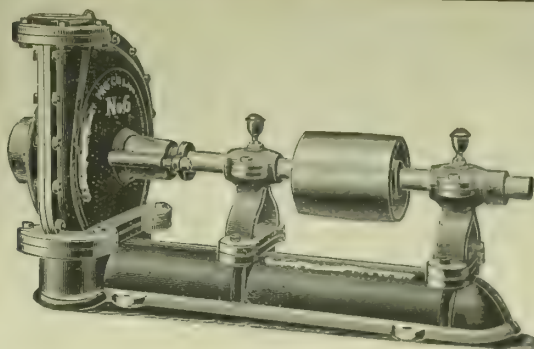
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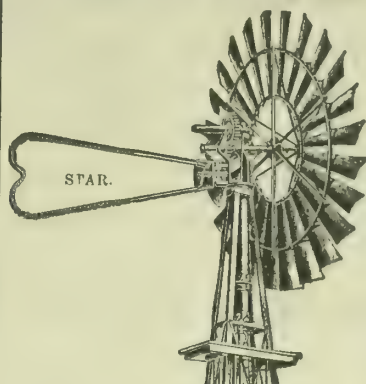
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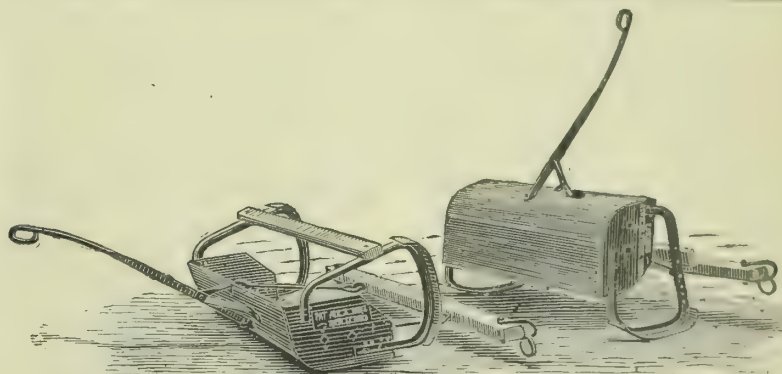
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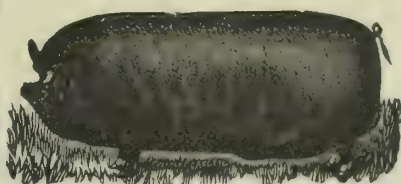
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San Jose Grange.

TO THE EDITOR:—Fortunate were the farmers who were at the San Jose Grange and listened to Prof. E. W. Hilgard, who had been invited by the Grange to give them a talk on "Fertilizers." The Professor is undoubtedly the best-posted man on plant life in California. Having made it a study for many years on the Pacific coast, no man is better able to advance practical ideas as to what conditions are best suited for various forms of plant growth. The Professor showed by elaborate charts soils in different parts of the United States, dividing the humid from the arid regions. In the Eastern States the climate is humid and the soil needed lime as a fertilizer, but California being in an arid climate the soil had an abundance of lime for all varieties of plants, and there was no need of using lime as a fertilizer. He advised wheat farmers to summer-fallow their land, as it increased its fertility, but deprecated the plowing under of unrotted straw. Perhaps this is the cause of the failure of wheat crops oftentimes on fallow land. If this be true, it would be better after heading the grain to go over the land with a harrow, cutting the stubble close to the ground; rake it up, haul it off or burn it. This would hold good for winter plowing as well. He said that fruit-growers had greater obstacles to overcome, as they could not change their crops nor increase the productive powers of the land by following it. We understood him to say to plant alfalfa, beans, burr clover, etc., and plowing them in would reinforce the land with nitrogen, which fruit trees need most in California soils.

The Professor considered gypsum the best fertilizer for alkali land. In its treatment he recommended deep plowing and thorough cultivation and the liberal use of gypsum as a fertilizer. It serves well on lands where potash and nitrogen are lacking. He advised orchardists to experiment with gypsum, as he had been told it made fruit sweeter. The Professor was plying with many questions from an interested audience desirous of getting all the information possible during the hour and a half the address occupied. The Professor spoke encouragingly of the Agricultural College at Berkeley, there being from 35 to 40 scholars pursuing that branch of studies, many of whom will graduate this year. Experience proves that young men, graduates of agricultural colleges, do not often return to the farm; therefore some other plan must be devised that the science of agriculture may be carried to every farmer's home, and this can be done in no better way than to make the college at Berkeley a training school to fit young men as teachers or lecturers on agriculture, with a certainty that they have employment as such under our school system. It is a notable fact that among the many branches taught in our public schools not one is designed to give the scholar the least idea of agriculture.

San Jose Grange is the recipient of several letters from members of Congress in reply to our resolution asking their intervention in favor of continued appropriations for agricultural experiment stations. Since our last seven new candidates have passed through the four degrees and received their diplomas as husbandmen and matrons, at a subsequent meeting five other strangers passed the gates of our symbolic farm on their way to the master's office, there to be enrolled as fourth degree members. This class is expected to reach the master's office on the second Saturday in June, when the event will be celebrated by literary exercises, strawberries, ice cream and cakes.

Mr. Lubin is expected to be at an open grange meeting the first Saturday in June to explain the transportation problem.

AMOS ADAMS.

San Jose, May 26, 1894.

Two Rock Grange.

The following account of the Decoration Day meeting of Two Rock Grange is clipped from the Petaluma Imprint:

There was a big crowd of grangers present and the day was very pleasantly spent by all. In the morning there was a session of the grange, followed by an open meeting, during which State Lecturer Goodenough delivered an interesting and brilliant discourse.

A recess of two hours was then taken for the feast, and the tables were weighted down with loads of good things prepared by the ladies of the grange, who are noted for their skill in the culinary art.

In the afternoon another meeting was

held, after which all adjourned to the cemetery, where the graves of the departed ones were hidden beneath mantles of blossoms. The attendance had now increased so much that the remainder of the afternoon session was held in the church, which is a larger building than the Grange hall. Those who attended from this city report having spent a very pleasant day.

One of the features of the meeting was a paper read by Mrs. E. C. Hinshaw, in which she paid a glowing and beautiful tribute to the grange members who have crossed to the other side.

(Continued on page 430.)

Neuralgia

ATTACKS THE EYES
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THE LIGHT
Unbearable.



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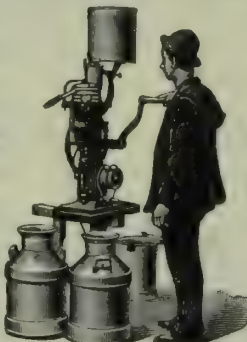
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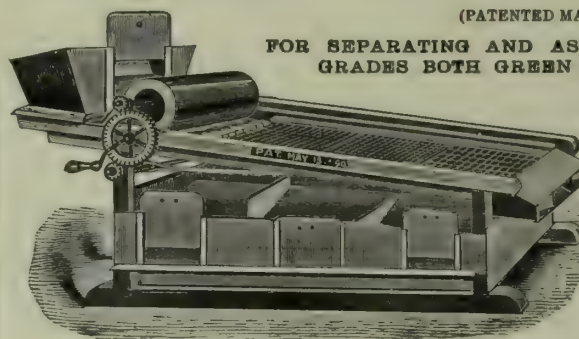
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Let us help you. THE AMERICAN WELL WORKS,
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The Highest Windmill Tower in the World.

The town of St. James, L. I., can boast of having the highest and strongest windmill in the world. The proprietor of the land on which it has been erected tried for years to construct a well on the elevated land near his house, but without success. The spring from which the windmill pumps is on the beach at the head of a distant bay. The contiguous land rises so rapidly, and the trees are so high, that it was necessary to raise the windmill 150 feet, so that the bottom of the windwheel would be above all obstructions within 1000 feet of it. The scale on which the mill is erected can be seen from the fact that there are 20 barrels of concrete in the foundation piers, besides 40 barrels of cement, 20,000 bricks, 42,000 feet Georgia pine, and more than six tons of bolts and washers and iron plates. It is 22½ feet in diameter and 190 feet above high water. There are 6000 feet of pipe between the windmill pump and the reservoir, which contains about 65,000 gallons. The windwheel has frequently filled it in two days. The maximum height to which the water is forced by this mill is 223 feet, before reaching which it has to pass a long line of pipe. There is no difficulty, however, in making a plant to throw the water much higher than this. It is merely a question of the pump, pipe and fittings being able to withstand the pressure and the windmill being large enough to give power sufficient to do the work. Pumps are made strong enough to raise water 2000 feet, if necessary. The only question to be carefully considered is that of the tower, for it must be made to withstand the roughest weather likely to be met with in those latitudes.

The Breathing-like Movements of the Earth's Surface.

Prof. John Milne makes it clear that the earth is breathing, and that the tall buildings upon its surface are being continually moved to and fro, like the masts of a ship upon the ocean. Although few countries are seriously troubled by earthquakes, important earth movements are occurring at all times and in all lands that have an appreciable effect on the surface configuration. These movements are now being studied by physicists. It is stated that in both Germany and Japan a tide-like movement of the earth is often distinctly apparent, the ground being gently tilted every 24 hours (more at night than by day), and buildings and chimneys are slightly inclined like stalks of corn in a steady breeze. So far as Japan is concerned, this phenomenon is attributed to the opening and shutting of the crumpled strata forming a range of mountains. The various movements of the panting earth have been classified, and among them are the microseismic or tremor storms, which are defined as long, flat waves like those of an ocean swell, and the bending effect produced in certain districts by changes of atmospheric pressure. It is now found, too, that while the waves from distant earthquakes may be appreciable to the senses for only a few hundred miles, their vibrations may extend around the world.

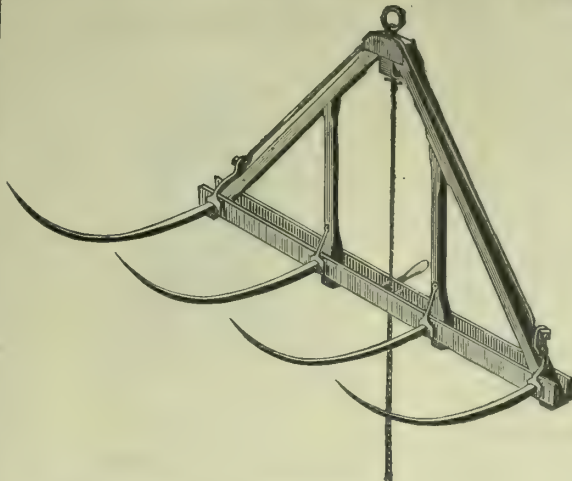
It is proposed to turn a portion of the unfinished Panama canal to account. During the stormy weather the port of Colon is difficult of access. On the Panama side vessels lie at anchor in the bay, and cargoes have to be lightered to and from the city. It is now suggested to utilize portions of the abandoned canal for improved harbor facilities. For this purpose four miles on the Panama side, and about 14 miles on the Colon end, could be rendered available, securing safe harborage for vessels and enabling cargoes to be transferred from steamers to the cars of the Panama railway.

THE use of electricity has made it necessary for sentries on British warships to discard side arms when on duty. The arms become, it is said, magnetized by the dynamos and affect the compasses.

There is more Catarrh in this section of the country than all other diseases put together, and until the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease, and prescribed local remedies, and by constantly failing to cure with local treatment, pronounced it incurable. Science has proven Catarrh to be a constitutional disease and therefore requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, Ohio, is the only constitutional cure on the market. It is taken internally in doses from 10 drops to a teaspoonful. It acts directly on the blood and mucous surfaces of the system. They offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address

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No. 408,019 May 7, 1889

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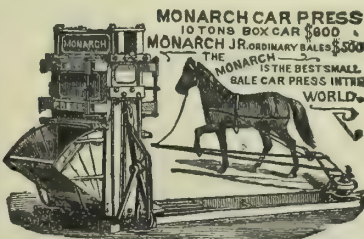
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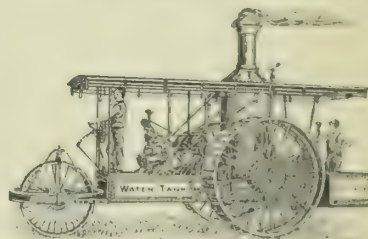
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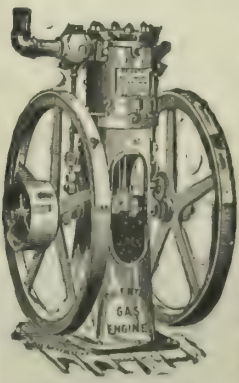
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How Matches Are Made.

There are many persons now living who can remember when the common method of obtaining fire for domestic and other purposes was by means of flint and steel; the sparks which fell from striking the two together, falling upon a piece of punk, or dried, decayed wood, or carbonized linen or cotton goods, when fanned into a flame, producing the necessary heat with which to start a fire. This primitive method was in general use until the early part of the present century, when the first successful attempt was made to produce fire for ordinary purposes by means of chemical agency, but it was not until about 1827 that the first friction matches were considered of practical use. In 1833 they became an item of commercial importance throughout Europe, and were soon after introduced extensively into this country.

The expansion of the business since that time is shown by the annual statement of the Diamond Match Company at its meeting in Chicago not long since. President Barber's annual statement showed that the business for the year 1893 had made a net profit of \$1,359,577 15, as against \$1,050,000 in 1892—a remarkable showing for a year of such great business depression. This enormous sum represented 15 per cent on the invested capital.

When the internal revenue law was in force in the United States, the tax at one cent a box, in 1881, amounted to \$3,172,258. Since then the business has steadily increased. In Great Britain the yearly output is valued at about \$8,000,000, or upward of 300,000,000 matches daily. In France the Government has exclusive right to manufacture matches, for which privilege it pays annually 16,000,000 francs, or \$3,200,000, and has the business concentrated in about a dozen large establishments. Norway and Sweden have been among the largest match-producing countries of the world, their exports amounting to about 20,000,000 pounds of matches per annum. In Germany there are upward of 200 factories, producing about 70,000,000,000 matches yearly. In Austria there are more than 150 factories, the output of which does not fall much below each of the other countries named.

It is difficult to ascertain the average number of matches daily used by each person, but in Europe the highest authorities place it from six to ten. It is probable that the proportion is still greater in the United States.

The wood used in the manufacture of matches is principally white pine, poplar, aspen and yellow pine. In the United States white pine is used almost exclusively. It burns freely, steadily, slowly, constantly and with a good volume of flame. The wood is soft, straight grained, easily worked, and its light weight is of no small consequence in the matter of transportation charges, which are usually high on combustible articles.

For the best grade of matches the choicest quality of cork pine is used, a variety of white pine, the trees being large and well matured. The Diamond Match Company about 12 years ago secured hundreds of millions of feet of choice standing cork pine timber on the waters of the Ontonagon river in the upper peninsula of Michigan. This company now cuts annually upward of 30,000,000 feet of this timber, but this is by no means all that is used in the manufacture of matches in this country. Millions of feet more of choice white pine timber are bought every year and made into matches by a number of factories under control of this corporation.

In Sweden the method of manufacture is as follows: The timber is cut into blocks about 15 inches long and placed in a turning lathe. With each revolution a slice or veneer is peeled off the thickness required for the match sticks, while at the same time eight small knives cut the slice into seven pieces, like ribbons, and of the length required for the sticks. These ribbons are then broken into lengths of six to seven feet, knotty and defective pieces are removed, and the ribbons are then fed through a machine which cuts them into pieces like a straw-cutter, these then passing through an automatically arranged machine with cutters, which slices off as many pieces, the thickness required for a match, as there are cutters. One machine will turn out from 5,000,000 to 10,000,000 match splints in a day.

In this country choice, clear two, three and four-inch planks are used, also pieces from the ends of planks and timbers, edgings and other suitable parts of the log not utilized. These are cut the required length and sliced or split by machinery adapted for the purpose. After passing through these machines, the match splints are dried in heated revolving drums, during which process

the loose splinters clinging to the splints are separated. They are then placed in a sieve and sifted, an operation which finally places the sticks in parallel order so that they can be conveniently bundled, after which they are ready for the dipping operation.

The head of each stick, to be thoroughly dipped or covered, must be separated from the others, that no danger shall ensue from ignition, as would be done if they came in contact with the inflammable material used in the coating. The sticks are separated by machinery and placed each by itself in a dipping frame which is fitted in a movable lathe, and a number of these lathes are placed in a machine. One person can arrange with one of the machines nearly 1,500,000 splints in a day. The splints are then heated so as to more readily absorb paraffine, which is confined in its molten state in shallow pans.

The first dipping covers the head of the match sticks with the paraffine preparation; by the second operation it is covered with the igniting composition, different devices being used for this purpose. A competent person will dip about 8,000,000 matches a day. After the last dipping the frames containing the matches are placed in a heated room, that the igniting composition may be dried. They are then removed from this room and packed in boxes ready for shipment.—Chicago Journal of Commerce.

The Union Gas Engine Co.

The rapid advance of the gas engine within the past five or six years, and the strong hold that it has gained on the confidence of those who use motive power, is largely due to the ingenuity and energy of this company. From its swaddling clothes or creeping stage, as one might say, it has been brought by this company to full fledged manhood.

Where at one time, and but a few years since, it was regarded by many as quite improbable, if not impossible, that any high degree of power would be attained by these engines, it has been fairly demonstrated by the Union Gas Engine Company that a high rate of power can be furnished through this means, and at less cost than by the use of steam. While the engine has passed its experimental stage, and is now practically a perfect motive power, it is still the policy of the company to improve and adapt it to every possible requirement that it may be called upon to meet. The long list of names of those who are using the Union gas engines, both for marine and stationary purposes, is the best evidence that can be offered that the company's efforts have met with success. Whoever is in need of power, either for pumping, mine hoisting, propelling boats or anything else, should not fail to send for the finely illustrated catalogues giving full particulars. Address the Union Gas Engine Co., 221-223 First Street, San Francisco, Cal.

Battle-Ships Ready.

An official report of the instantly available battle-ships of the six great powers shows that of first-class vessels England has 15, France 9, Russia 3, and the Triple Alliance 10, of which 9 are Italian and 1 German. All the English vessels steam 16½ knots and upward, two being 18½; none of the French is over 16.2, while two of the three Russian are under 16, the third reaching 17.8. In second-class ships England leads with 12, France has 9, Russia 4, and the Triple Alliance 11, of which Germany owns 7 and Austria 4. Here there is no such superiority of speed on the English side, three being under 13 knots, while no French vessel goes so low as that figure and all the Russian steam 14 knots and over.

TO MAKE edge tools that are brittle and hard hold an edge, put them in boiling fat for two hours; then take them out. Treated in this way they will retain their hardness without being brittle. Another simple remedy for tools that are too hard is to light a piece of paper and run it across the edge after grinding. This will draw the temper just right.—The Industrial American.

THE extreme age of the various species of trees is set down as follows: Elm, 335; pine, 450; chestnut, 600; olive, 700; the cedar, 800; the oak, 1500; the yew, 2800. Humboldt computed the age of the famous baobab tree, a species of banyan, to be at least 5700. Late authorities give the age of "big trees" in California to be 3000 years.

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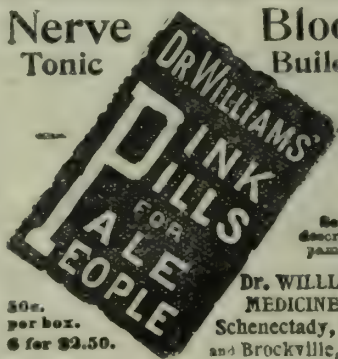
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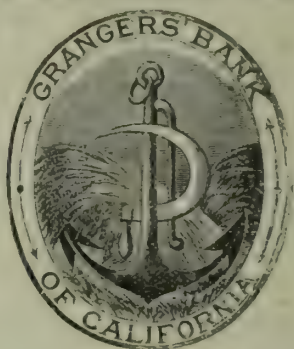
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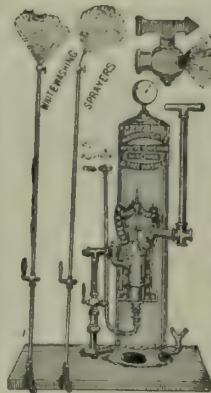
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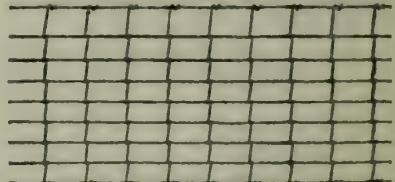
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A PRACTICAL TREATISE ON THE RAISIN GRAPES, their History, Culture and Curing. By Gustav Eisen. This is the Standard Work on the Raisin Industry in California. It has been approved by Prof. Hildard, Prof. Wickson, Mr. Chas. A. Wetmore and a multitude of practical raisin-growers. Sold by the DEWEY PUBLISHING CO., or its Agents at the uniform price of \$3, postage prepaid. Orders should be addressed:

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Treatise on the Horse and His Diseases.

By R. J. KENDALL, M. D.

86 Fine Engravings showing the positions and actions of sick horses. Gives the cause, symptoms and best treatment of diseases. Has a table giving the doses, effects and antidotes of all the principal medicines used for the horse, and a few pages on the action and uses of medicine. Rules for telling the age of a horse, with a fine engraving showing the appearance of the teeth at each year. It is printed on fine paper and has nearly 100 pages, 7½x5 inches. Price, only 25 cents, or five for \$1, on receipt of which we will send by mail to any address DEWEY PUBLISHING CO., 29 Market Street, San Francisco.

S. H. MARKET REPORT

Market Review.

SAN FRANCISCO, May 29, 1894.

The RURAL goes to press one day earlier than usual on account of the Memorial holiday, which stops all wheels and makes the work of printing an impossibility.

In wheat, there is nothing in the immediate situation that is encouraging for holders. Shippers still keep out of the market and matters are likely to remain dull and spiritless until exporters come again to the front. Of course there are occasional transfers, though at a low range, say 85@87½¢ ¢ ctt. for standard shipping quality. Moderate demand prevails for milling grades and some little business is being constantly transacted at a range of 95¢@1.02½ ¢ ctt.

BARLEY—Most holders are somewhat firm in their views as to values, the asking range being 90@95¢ ¢ ctt., as to quality. But the slightest pressure to realize at once breaks the market and a concession of 50¢ ¢ ton is quickly established. At the same time, the market rapidly rallies as soon as the pressure is withdrawn. In brewing descriptions there is no general movement, the demand being largely nominal. Dealers who have recently tested the situation report that 1.07½ ¢ ctt. is an extreme rate at the moment for choice brewing barley.

Dried Fruits.

The market is quiet, and will remain so until the new season opens. We quote: Apples, 6½@7½¢ for quartered, 7@7½¢ for sliced, and 9@11¢ for evaporated; Pears, 6@8¢ ¢ lb for bleached halves and 2@4¢ for quarters; bleached Peaches, 11@12½¢; sun-dried Peaches, 8@9¢; Apricots, nominal; Prunes, 5½@6¢ for the four sizes, and 4¢ for small; Plums, 5@6¢ for pitted, and 2 to 3¢ for unpitted; Figs, 3 to 4¢ for pressed and 1½ to 2¢ for unpressed; White Nectarines, — to —¢; Red Nectarines, — to —¢ ¢ lb.

Raisins.

Prices favor buyers. California Layers, 60¢ to \$1; loose Muscates, in boxes, 50 to 75¢; clusters, \$1.25 to \$1.50; No. 1 loose, in sacks, 2½ to 3¢ ¢ lb; No. 2 do, 2½ to 2½¢; Dried Grapes, 1½ to 1½¢.

General Produce Market.

OATS—Trade is not of large proportions and stocks do not lower as quickly as sellers might wish. The market is rather liberally supplied, but the apathy of buyers causes a general feeling of ease to prevail, and the probabilities are in favor of a reduction in quotations in the near future. We quote: Milling, \$1.20@1.30; Surprise, \$1.37½@1.45; fancy feed, \$1.27½@1.32½; good to choice, \$1.15@1.25; poor to fair, \$1.10@1.15; Black, nominal; Red, nominal; Gray, \$1.12½@1.20 ¢ ctt.

CORN—Quotations were marked down to-day, in the hope of stirring up some trade. Quotable at \$1.15@1.20 ¢ ctt for Large Yellow, \$1.27½ for Small Yellow and \$1.25@1.26½ for White.

CRACKED CORN—Quotable at \$27.50@28.50 per ton.

CORNMEAL—Millers quote feed at \$27@28 per ton; fine kinds for the table, in large and small packages, 2½@3½¢ per pound.

OILCAKE MEAL—Quotable at \$35 per ton from the mill.

COTTONSEED OILCAKE—Quotable at \$30 per ton.

SEEDS—We quote: Mustard, brown, \$2.25@2.50; Yellow, \$3@3.50; Triese, \$2.50@2.75; Canary, 3@4¢; Hemp, 3½@4½¢ ¢ lb; Rape, 2@2½¢; Timothy, 6½¢ per lb; Alfalfa, 10½@12¢; Flax, \$3@3.25 per ctt.

MIDDLINGS—Quotable at \$18@19 per ton. MILLSTUFFS—We quote: Rye Flour, 3½¢; Rye Meal, 3¢; Graham Flour, 3¢; Oatmeal, 4½¢; Oat Groats, 5¢; Cracked Wheat, 3½¢; Buckwheat Flour, 5@5½¢; Pearl Barley, 4½@4¾¢ per lb; Normal Nutrimint, \$3 per case of 1 dozen cans; Breakfast Delight, \$3.25 per case of 2 dozen packages.

FEED—Manhattan Horse Food (Red Ball Brand) in 100-lb cabinets, \$8. Manhattan Egg Food, 100-lb bags, \$11.50.

BRAN—Quotable at \$15@16 per ton.

HAY—The demand is only of moderate proportions, and prices are not near as firm as they were a short time ago. New Wheat sells at a range of \$10@12; new Wild Oat, \$11@13 per ton. Wire-bound Hay sells at \$1 ¢ ton less than rope-bound hay. Following are the wholesale city prices for rope-bound hay: Wheat, \$12@15; Wheat and Oat, \$11@14.50; Wild Oat, \$11@13.50; Alfalfa, \$9@12; Barley, \$10@13; Compressed, \$11@14; Stock, \$8@10 ¢ ton.

STRAW—Quotable at 70@80¢ per bale.

HOPS—No improvement in matters. Market lifeless. Quotations nominal at 13@16¢ per lb.

RYE—Quotable at \$1.15@1.17½ ¢ ctt.

BUCKWHEAT—Quotable at \$1@1.15 ¢ ctt.

GROUND BARLEY—Quotable at \$22.50@23.50 per ton.

POTATOES—New crop is arriving more freely, and quotations are lower. Old Potatoes are more or less neglected. We quote new: Early Rose, 50@75¢; new Peerless, 50@65¢ in sacks and 60@90¢ in boxes; Sweet, \$1@1.25 ¢ ctt. We quote old: Early Rose, 25@35¢; River Burbanks, 30@40¢; River Red, 20@30¢; Oregon Burbanks, 40@50¢ ¢ ctt.

ONIONS—Quotable at 25@35¢ ¢ ctt. for new. DRIED PEAS—We quote: Green, \$1.75@2; Blackeye, \$1.60@1.65; Niles, \$1.50@1.75 ¢ ctt.

BEANS—Local trade quiet. No shipping demand. We quote: Bayos, \$2.50@2.70; Butter, \$1.75@1.80 for small and \$2@2.10 for large; Pink, \$1.90@2; Red, \$2.25@2.60; Lima, \$3@3.40; Pea, \$2.35@2.50; Small White, \$2.40@2.65; Large White, \$2.40@2.50 ¢ ctt.

NUTS—Jobbing trade only. We quote: Chestnuts, 6@8¢ ¢ lb; Walnuts, 6@7½¢ for hard shell, 8@9¢ for soft shell and 8@9¢ for paper shell; California Almonds, 10@11¢ for soft shell, 6@7¢ for hard shell and 11½@12½¢ for paper shell; Peanuts, 9@4¢; Hickory Nuts, 5@6¢; Filberts, 10@10½¢; Pecans, 5@8¢ for rough and

8@10¢ for polished; Brazil Nuts, 8@9¢; Cocoa-nuts, \$5@5.50 ¢ 100.

VEGETABLES—Active trade in the several seasonal descriptions. New Garlic and Squash from Alameda are now features of the market. We quote: Cucumbers, \$1@2 per box for common and 50@75¢ for good to choice; Asparagus, 50¢@1 per box for the ordinary run and \$1.25@1.50 per box for choicer quality; Rhubarb, 20@40¢ ¢ box; Green Peas, \$1.00@1.50 ¢ sk; Garden Peas, 2½¢ per lb; Summer Squash, 50@75¢ per box; String Beans, 4@6¢ ¢ lb; Refugee Beans, 6@7¢ ¢ lb; Wax Beans, 4@6¢ ¢ lb; Marrowfat Squash, \$20 ¢ ton; Hubbard Squash, — ¢ ton; Green Peppers, 25@35¢ per lb; Tomatoes, \$1@2.50 ¢ box; Turnips, 75¢ ¢ ctt; Beets, 75¢ ¢ sack; Parsnips, \$1.25 ¢ ctt; Carrots, \$3@40¢; Cabbage, 50@60¢; Garlic, 3¢ ¢ lb; Cauliflower, 60@70¢ ¢ dozen; Dry Peppers, 17½@20¢ ¢ lb; Dry Okra, — ¢ ¢ lb.

FRESH FRUIT—Small lots of Peaches have come to hand this week and fresh shipments are soon to be expected. Apricots are increasing in supply. Currents are in large receipt. Cherries make a fair showing, the quality of offerings showing improvement. Cherry Plums are rather slow of sale. We quote: Cherries, white, 20@40¢; black, 30@60¢; Green Apples, 25@50¢ per box; Apricots, 40@65¢ per large box; Currents, \$3.50@4.50 per chest; Cherry Plums, 40@50 per drawer.

BERRIES—There is very good demand for all kinds, and full prices are obtained for choice offerings. We quote: Newcastle Raspberries, \$1@1.50 per crate; San Leandro Raspberries, 75@90¢ per drawer; Strawberries, \$3 @ 5 per chest for Sharper and \$6@7 for Longworths in baskets and \$6 to \$10 in drawers. Gooseberries, 1½ to 2¢ for common, and 4 to 5¢ per lb for the English variety.

CITRUS FRUIT—An auction sale of Oranges will be held on Thursday, which will be the last this season. These public submissions have been well attended and results generally were satisfactory. We quote: Fair to choice Navel Oranges, \$1.50@2.50 per box; Seedlings, \$1@1.50; Mexican Limes, \$4@5 ¢ box; Lemons, Sicily, \$4@5; California Lemons, \$1@1.25 for common and \$1.50@2.50 for good to choice; Bananas, \$1.50@2.50 per bunch; Pineapples, \$2.50@4 per dozen.

HONEY—Stocks are light and prices keep firm. We quote: Comb, 10½@11½¢ ¢ lb for bright and 9@10¢ for dark to light amber; water white extracted, 6@6½¢; amber extracted, 5½@5½¢; dark, 4½@5½¢ ¢ lb.

BEESWAX—Quotable at 24@25¢ ¢ lb.

BUTTER—The situation is altogether in favor of buyers, receipts being liberal. We quote as follows: Fancy Creamery, 17@18¢; fancy dairy, 16@17¢; good to choice, 14@15¢; store lots, 12@13¢; pickled roll, new, 10@20¢ ¢ lb.

CHEESE—The market is steady, but not buoyant. We quote: Choice to fancy, 9@10¢; fair to good, 7½@8½¢; Eastern, ordinary to fine, 14@15¢ ¢ lb.

EGGS—There is a pronounced weakness in prices. We quote: California ranch, 14@15¢; store lots, 11½@13¢; Eastern, 13@14¢ ¢ dozen.

POULTRY—Old stock is in heavy supply at easy rates. Very small young Poultry is not wanted, and such consignments are hard to sell at any price. Large young Chickens are in demand at good figures, the supply not being in excess of trade wants. We quote: Live Turkeys—Gobblers, 9@11¢; Hens, 9@10¢; Roosters, \$3.25@3.50 for old and \$7.50@9 for young; Broilers, \$2@3 for small and \$4.50@5.50 for large; Fryers, \$6.50@7.50; Hens, \$3@4.50; Ducks, \$3@3.25 for old and \$4.50@5.50 for young; Geese, \$1 for old and \$1.25@1.50 for young; Pigeons, \$1.25@1.50 for young and \$2.25@2.50 ¢ dozen for old.

GAME—Nominal.

PROVISIONS—Values firm. We quote: Eastern Sugar-cured Hams, 13¢; California Hams, 12¢; Bacon, Eastern, extra light, sugar-cured, 14¢; medium, 10¢; do, light, 10½¢; do, light, boneless, 12¢; light, medium, boneless, 11¢; Pork, extra clear, bbls, \$20; hf bbls, \$10.50; clear, bbls, \$19; hf bbls, \$10; boneless Pig Pork, bbls, \$21.50; hf bbls, \$11; Pigs' Feet, hf bbls, \$4.75; Beef, mess, bbls, \$7.50@8; do, extra mess, bbls, \$8.50@9; do family, \$9.50@10; extra do, \$11@11.50 ¢ bbl; do, smoked, 10¢; Pickled Tongues, hf bbls, \$8; Eastern lard, tierces, 7½@8¢; do prime steam, 10¢; Eastern pure, 10-lb pails, 10½¢; 5-lb pails, 10½¢; 3-lb pails, 10½¢; California, 10-lb tins, 9¢; do, 5-lb, 9½¢; do, kegs, 10½¢; do, 20-lb buckets, 10¢; compound, 7½¢ for tierces.

WOOL—Nevada Wools are now seen among offerings. Trade is very quiet and no sales of consequence have occurred the past week. The circular of Thos. Denigan, Sons & Co. says: 'Scourers are now running on old orders and are waiting for new business. The scoured Wool basis at the East is quoted lower. Stocks here are light for this season of the year, and holders are not anxious to push sales.' We quote spring: Year's fleece, ¢ lb., 5@7¢; Six to eight months, San Joaquin, poor, 5@6¢; do fair, 7@8¢; Oregon and Washington: Heavy and dirty, 6@7¢; good to choice, 8@10¢; valley, 10@13¢; Nevada: Heavy, 6@8¢; choice light, 9@10¢. We quote fall: Northern defective, 5@6¢; Southern and San Joaquin, 3@4¢.

HIDES AND SKINS—Quotable as follows:

	Sound.	Culls.
Heavy Steers, 54 lbs up, ¢ lb.	4½@5¢	3½@4¢
Medium Steers, 48 to 56 lbs.	4@—¢	3@—¢
Light, 42 to 47 lbs.	3½@3¾¢	2½@2¾¢
Cows, over 50 lbs.	3½@3¾¢	3@—¢
Light Cows, 30 to 50 lbs.	3½@3¾¢	2½@—¢
Stags.	3@—¢	2@—¢
Kips, 17 to 30 lbs.	4@—¢	3@—¢
Veal Skins, 10 to 17 lbs.	5@—¢	4@—¢
Calf Skins, 5 to 10 lbs.	7@—¢	6@—¢

Dry Hides, usual selection, 7¢; Dry Kips, 7¢; Calf Skins, do, 7¢; Cull Hides, Kip and Calf, 4¢; Pelts, Shearling, 10@20¢ each; do, short, 25@35¢ each; do, medium, 40@50¢ each; do, long wool, 50@75¢ each; Deer Skins, summer, 25¢; do, good medium, 15@20¢; do, winter, 5¢ per lb; Goat Skins, 25@40¢ apiece for prime to perfect, 10@20¢ for damaged, and 5@10¢ each for Kids.

San Francisco Meat Market.

There is no change of importance in the meat market. Supplies of all descriptions are liberal, and prices shade favorably for buyers. Following are

the rates for whole carcasses from slaughterers to dealers:

BEEF—First quality, 5@5½¢; second quality, 4@5¢; third quality, 3½@4¢ ¢ lb.
CALVES—Quotable at 3½@6¢ ¢ lb.
MUTTON—Quotable at 5@6¢ ¢ lb.
LAMB—Spring, 6½@8¢ ¢ lb.
PORK—Live Hogs, on foot, grain fed, heavy and medium, 4½@4¾¢; small Hogs, 4½@4¾¢; stock Hogs, 3½@3¾¢; dressed Hogs, 6½@6¾¢ ¢ lb.

Complimentary Samples.

Persons receiving this paper marked are requested to examine its contents, terms of subscription, and give it their own patronage, and as far as practicable, aid in circulating the journal, and making its value more widely known to others, and extending its influence in the cause it faithfully serves. Subscription, paid in advance, 5 mos., \$1 10 mos., \$2; 15 mos., \$3. Extra copies mailed for 10 cents, if ordered soon enough. If already a subscriber, please show the paper to others.

THE science of surgery continues to develop new wonders. Its latest success is supplying artificial bones to replace deficient portions of the skeleton. A Frenchman has for a year or more enjoyed more than ordinary health with such a substitute bone in his upper arm. The artificial bone is made of vulcanite and attached in place with platinum wire.

Acreage Under Irrigation.

Following is an estimate of the acreage of land now under irrigation in the United States, together with the number of acres under cultivation. It is believed that California has not only a greater area of land under irrigation systems, but a larger per cent of the irrigable land is cultivated than in any State or Territory except Arizona:

	Under Irrigation	Under Cultivation.
Arizona.....	650,000	400,000
California.....	5,500,000	3,800,000
Colorado.....	4,000,000	2,000,000
Idaho.....	1,500,000	375,000
Kansas.....	300,000	125,000
Montana.....	1,500,000	400,000
Nebraska.....	350,000	100,000
Nevada.....	200,000	100,000
New Mexico.....	900,000	400,000
North Dakota.....	15,000	5,000
Oklahoma.....	10,000	.....
Oregon.....	300,000	120,000
South Dakota.....	125,000	75,000
Texas.....	400,000	185,000
Utah.....	750,000	430,000
Washington.....	1,000,000	200,000
Wyoming.....	1,500,000	200,000

Totals..... 18,000,000 8,915,000

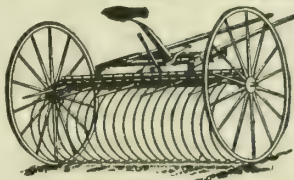
With the completion of the irrigation systems now under construction it is safe to say that 50 per cent may be added to these figures.

WALTER A. WOOD MOWERS REAPERS BINDERS RAKES

WOOD SELF-DUMP RAKES.

8, 10, 12-FT. SIZES. STRONG AND RIGHT.

Shafts on 8-ft. Rake can be changed for 2 horses.



BOTH WHEELS DUMP. NO JAR. Convex Tire, Steel Wheels, Perfect Tripping Device. Coll Teeth. Easily handled by any one who can drive. No side jerk. No annoyance. Manufactured for long service and good and satisfactory work.

Worked on Steep Hills Where Others Failed.

GENTLEMEN:—Your letter received stating that you are desirous of hearing from us regarding the WALTER A. WOOD TWINE BINDER. We think it is the best binder made. We cut grain on steep hills where other binders could not cut the year before, and hardly ever misses a bundle. Regarding its draft and elevation, it is the best we have seen, in fact, we prefer the Walter A. Wood binder to any biner made yet. Yours truly, CERECHINO & DEBENEDETTI.

WALTER A. WOOD HARVESTER CO.

290 & 292 E. WATER ST., PORTLAND, OR.
33 & 35 MAIN ST., SAN FRANCISCO.

THREE WIDTHS OF CUT.

4½ Feet,
5 Feet,
6 Feet,



NET CASH PRICES:
\$49 00,
\$52 00,
\$55 00.

THE WHITELY TRICYCLE MOWER

Is absolutely all that the farmer could desire in the way of simplicity, convenience, strength, durability, capacity to cut and handle any kind of grass, timothy or clover, and easy working qualities. This machine is made in three widths of cut, and is the most perfectly balanced, lightest draft and most powerful cutter ever invented. This great HOOP-POLE CUTTER MOWER is without a rival. The principle embraced in its construction are indispensable to a first-class Mower.

SULKY HAY RAKES.

STEEL WHEELS.

SELF-DUMP, Combination Pole and Shafts—8 Ft., \$28 00; 10½ Ft., \$25 00.
HAND-DUMP, 8 Ft., \$20 00; 10 Ft., \$23 00.

WE SHIP EVERYWHERE. ALLISON, NEFF & CO., 707 Front St., S. F.

Random Thoughts.

By A. P. ROACHE, W. M. S. G. of California.
Mid hill and plain and verdant slopes
The raindrops play with farmers' hopes.

On our way to Santa Rosa we were met at Menlo Park by the advance guard of Generals Wind and Rain, who seemed determined to stay our progress, and so persistent were they in their efforts, that on our arrival at San Francisco they poured their watery bullets down for four mortal hours. The sight of State Lecturer Goodenough dispelled the warring elements, at least the sunshine of Nature, mingling with the sunshine of his presence cleared our cloudy firmament and we reached the City of Roses in excellent spirits and fell into the hands of worthy Patrons.

Bro. Coulter insisted on a fair division of the visitors and took his chances with one, which, on inspection, he pronounced Goodenough, while the writer was escorted to the hospitable home of the wide awake Master of Bennett Valley Grange, Bro. Hansen. Notwithstanding the inclement weather the Bennett Valley Patrons turned out in goodly numbers, and as they own their hall and grounds a most enjoyable meeting was the result. Bro. Goodenough gave them a thoughtful able address, followed by Bro. Coulter in one of his shortstop practical talks. A splendid feast, supplemented by a lively, jolly dance rendered the 21st anniversary of this Grange a pleasing and profitable event.

It has now reached the voting age of manhood and should soon be able to strike some telling blows for the cause which it has so long and so faithfully espoused. Eleven of its 25 charter members still hold the fort which argues well for its prosperity and is a distinction few Granges enjoy.

If a merchant or tradesman carrying certain lines of goods was entirely ignorant of the transactions of all other firms in these particular lines, any business man would tell him that he was not receiving a return anywhere approaching the possibilities of his business. One asking what course he should take to insure greater success, he would be told to study his business, to become conversant with other men's methods engaged in the same lines as himself, to advertise, to scan closely the means by which others succeed, in short, to place himself in full support with the spirit and belongings of that entire line of business.

Will my sisters and brothers kindly apply the simile to their Granges and through the columns of the RURAL flash their brilliant lights into the halls of many Granges, darkened by the gloom of failure of crops in spite of their best efforts of head and hand. The history of no cause is best written by a single individual, and if our Patrons will scan the pages of last week's RURAL and there observe the one feeble ray which dimly flickers athwart the horizon of our mighty cause, in the lone, solitary and deserted Master's column, they cannot fail to note the necessity for prompt patriotic action, and lend the inspiration and influence of their best thoughts and acts to the upbuilding, maintenance and perpetuation of the only true cause which can ever emancipate the tillers of the soil from isolation, selfishness, distrust, ignorance, and a slavery which threatens, through our inattention, to be riveted by links of brass upon those who succeed us.

If taxation without representation was unadulterated tyranny in 1775, by virtue of what law has it ceased to be tyranny in 1894? If taxation without representation is a great and crying wrong against the rights of man, why is it not equally so of woman?—she whose rights are so meager that they are scarcely recognized. If the object of government is to assist the weak, restrain the strong and render impartial justice to all, can our Government be considered a great success? If the laborer is worthy of his hire, should not his hire represent a just equivalent for the value of whatever product his labor produces? And if the hire of any laborer, be he hodcarrier, or senator in the employ of the Government, is greater than the return that that hire warrants, is it not the plain duty of the Government to adjust the hire to a sum proportionate to the value returned, based on the value of the product the labor of the hireling has produced? Will some one answer? Taxpayers are interested parties.

The Executive Committee held a long and arduous meeting and inaugurated a regular "house cleaning." It spent much time in the elaboration of plans to be presented to the next State Grange on questions of vital interest not alone to farmers but to all good citizens.

The writer was hospitably entertained while in Santa Rosa by Bro. and Sister Coulter, who placed him under many obligations for their kindness.

Coast Industrial Notes.

—Horses are being shipped from Union, Oregon, to Scotland.

—Fir bark delivered is selling in Carson, Nev., at \$2.50 per load.

—Tacoma shipped 2,686,563 feet of lumber in cargoes during April.

—Two stamp canceling machines, with a capacity of 30,000 an hour each, are run by water power at the San Francisco post-office.

—A recent incorporation at Portland, Or., proposes to butcher horses, sell the hides and hair, compress the meat for chicken food, and convert the rest into manure.

—Seattle's scheme to develop trade between Puget sound and Central American ports will be begun with steam schooners capable of carrying 1000 or more tons each.

—The Puget Sound Lumberman puts the spruce output of Oregon and Washington at 40,000,000 feet, and that of cedar 25,000,000 feet. Of the spruce output probably 25,000,000 feet finds its way into California, while the balance is shipped East or manufactured into boxes. Nearly all of the cedar is shipped East.

—The King of the Samoan Islands has entered into an agreement with Cotton & Higgins of Berkeley to ship to San Francisco in schooners or other sailing vessels touching at the islands an average of 100 tons of coconuts a month. Oil will be extracted therefrom. The Berkeley people will also extract oil from peanuts.

—The construction of a tunnel to drain Humboldt lake, for the purpose of utilizing the water for irrigating the arid land in that vicinity, has begun under the direction of Southern Pacific engineers. The *New Era* says: The intention seems to be to drain a sufficient area to redeem 10,000 to 15,000 acres of land. By the end of the month twenty men and six teams will be engaged on the canal.

—As has been noticed before, the Clear Lake Electric Co. propose to take water through three 6-foot water mains from Cache creek, near Rumsley, ten miles to where a fall of 500 feet will be utilized to produce 40,000-horse power. The idea is to transmit this voltage across the bay to this city and furnish electric power. The scheme is deemed feasible by the projectors.

—A new steamship line is to be established by a Russian syndicate between here and Vladivostok, the Pacific terminus of the nearly-completed Trans-Siberian railway. A contract has been secured from the Russian Government to carry the mails for fifteen years. Some of the required steamships will be bought in New York; others will be built by the Union Iron Works in this city. The company is styled the Russian-American Direct Transportation Co., and the capital stock is \$37,000,000.

Science and Americans.

Science is supreme in American production, and the Americans have outrun us all in its application. They were the first to utilize electricity, not merely in the development of telegraphy and the kindred arts, but as a powerful ally in manufacture. In the welding of metals, for instance, it now plays an important part. It has reduced the price of aluminum from £2 to 2s. a pound, and the metal has now in consequence passed into common use; it enters into the fabric of the bicycle; it is made into shoes for the horses of Russian cavalry; it is embodied in the enigmatical figure which crowns the Shaftesbury Memorial.

In iron and steel, the use of highly developed machinery, which is no more than the application of science, has revolutionized production. The new drop-hammer has brought down the price of American plows to less than £1, and in the making of all sorts of agricultural implements it is calculated that 600 men can now produce as much as 2145 men could a few years ago. Where a single workman could make three dozen pairs of sleeve links in a day, a boy can now make nine thousand.

The manufacture of pins still holds its own as an "object lesson," but whereas Adam Smith notes with astonishment and admiration ten men turning out 48,000 pins a day, the modern American manufacturer finds no difficulty in supplying 7,500,000 in the same time, as the result of the labor of five pairs of hands. Compare this with the state of things at the time of the War of Independence, when imported pins sold for 7s. 6d. a dozen, and when, to encourage home industry, the Government offered £50 for the best 25 dozen of pins made in America equal to those imported from England.—The Edinburgh Review.

A MICHIGAN MIRACLE.

BETWEEN LIFE AND DEATH.

A Singular Story of a Detroit Molder—
A Terrible Battle Which Lasted
Months—One of the Remarkable Incidents Bordering on the Romantic.

(From the Detroit Free Press.)

Thomas Hagen was seated in a comfortable rocking chair at his cosy home, 1289 Russell street, yesterday morning, when a visitor was announced. The gentleman arose and greeted the newcomer with the grace of a diplomat, and as he opened up a conversation it was evident that Mr. Hagen was a person of more than ordinary intelligence. To his visitor the remarkable changes and peculiar career of this man was a source of much interest. The wonderful transformation in his appearance within the past two years is itself worthy of the study of a scientist. Mr. Hagen, a couple of years ago, was so weak and emaciated that to-day he does not seem the same individual.

Rheumatism was the cause of his terrible sufferings.

He is a Detroitier by birth, having first seen the light of day in this city 36 years ago. When quite a boy he was apprenticed to the molder's trade, and ever since he has followed this avocation. He is quite a prominent member of the local Stove-Molder's Union, and can be found nearly every Saturday night in attendance at the meeting of the Order. About two years ago Mr. Hagen became seriously affected with rheumatism, the result of working in drafts of cold air.

"The shooting pains of rheumatism are actually, I believe, the most horrible penalties that can be inflicted on mankind. I cannot begin to tell you of the agony I suffered. I had a thorough experience in the art of torture, and no matter what I used to ease the pain, it seemed as though I was doomed to greater suffering. I had a number of friends who took great interest in my case, and recommended numerous remedies, which I tried without avail. Nothing seemed to do me any good. I was under the care of several well-known Detroit physicians, but their services were absolutely without favorable results. I was bedridden. Why, I could not move from one chair to another without assistance. Some days I would feel a little brighter than others.

"But presently another attack of that infernal rheumatism would strike me, leaving me a veritable wreck on the barren shores of humanity.

"By accident I read two years ago a Canadian paper containing a remarkable story of a miracle at Hamilton, Ont. It was that of a man who was tortured to death by rheumatism. He was induced to use Dr. Williams' Pink Pills for Pale People. He was immediately cured. I doubted the truth of the matter at first, but thought I would try it. I had my people hunt all over town, but they could not find the pills at any of the drug stores. The only place they were then sold at was over in Windsor. Well, my relatives went over there and purchased a few boxes. Great Christopher! but my mind goes back in ecstasy to the change which immediately came over me after using the Pink Pills. I began to improve, and in a few weeks rheumatic pains left me, and in a short time I was able to be out and around. From that time I have been at work.

"It was not long after I secured the pills over at Windsor that I found they were for sale here in Detroit, at Brown & Co.'s, corner of Woodward and Congress, Mitchell's and Bassett & L'Hommiedieu's, Woodward avenue. I purchased them for fifty cents per box. I guess you can buy them now at almost every drug store in Detroit.

"I have recommended the Pink Pills to several of my friends around town, and although their cases were similar to mine, they have all been cured. There is nothing on the face of God's earth equal to them for rheumatism and other diseases. Until my dying day I will praise the pills for being the cause of my present happy and contented condition."

Dr. Williams' Pink Pills are not a patent medicine in the sense in which that term is usually understood, but are a scientific preparation successfully used in general practice for many years before being offered to the public generally. They contain in a condensed form all the elements necessary to give new life and richness to the blood and restore shattered nerves. They are an unfailing specific for such diseases as locomotor ataxia, partial paralysis, St. Vitus' dance, sciatica, neuralgia, rheumatism, nervous headache, the after effects of la-

grippe, palpitation of the heart, pale and sallow complexions, that tired feeling resulting from nervous prostration; all diseases depending upon vitiated humors in the blood, such as scrofula, chronic erysipelas, etc. They are also a specific for troubles peculiar to females, such as suppressions, irregularities and all forms of weakness. They build up the blood and restore the glow of health to pale or sallow cheeks. In the case of men they effect a radical cure in all cases arising from mental worry, overwork or excesses of whatever nature.

These Pills are manufactured by the Dr. Williams' Medicine Company, Schenectady, N. Y., and Brockville, Ont., and are sold only in boxes bearing the firm's trade mark and wrapper, at 50 cts. a box, or six boxes for \$2.50. Bear in mind that Dr. Williams' Pink Pills are never sold in bulk, or by the dozen or hundred, and any dealer who offers a substitute in this form is trying to defraud you and should be avoided. Dr. Williams' Pink Pills may be had of all druggists or direct by mail from Dr. Williams' Medicine Company from either address. The price at which these pills are sold makes a course of treatment comparatively inexpensive as compared with other remedies or medical treatment.

HEALD'S

BUSINESS COLLEGE.

24 POST STREET.....SAN FRANCISCO.
FOR SEVENTY-FIVE DOLLARS

This College instructs in Shorthand, Type-Writing, Book-keeping, Telegraphy, Penmanship, Drawing, all the English branches, and everything pertaining to business, for full six months. We have sixteen teachers and give individual instruction to all our pupils. Our school has its graduates in every part of the State. SEND FOR CIRCULAR. E. P. HEALD, Pres. O. S. HALEY, Sec.

BERKELEY.

An elegant residence in Berkeley for sale cheap. New house, 10 rooms, finished a/c. All modern improvements. Lot 50x125. Near University grounds. Particulars of

JOHN F. BYXBEE, 22 Market St.,
SAN FRANCISCO.

Also Choice Building Lot in Town of Palo Alto. Send for Circulars.

Seeds, Plants, Etc.

OLIVE TREES.

ALL KINDS OF

Nursery Stock.

Send and get book on Olive Culture.

HOWLAND BROS.,

Pomona, Cal.

E. J. BOWEN, SEED MERCHANT.

ALFALFA!

Grass, Clover, Vegetable and Flower Seeds,
Onion Sets.

LARGEST STOCK AND
MOST COMPLETE ASSORTMENT.

Illustrated, Descriptive and Priced Seed Catalogue for 1894 mailed free to all applicants. Address

E. J. BOWEN,

315 & 317 Sansome St., San Francisco, Cal.
65 Front Street, Portland, Or.

or 214 Commercial St., Seattle, Wash.

TREES and PLANTS.

A fine assortment, best varieties, free from pests of any kind. Prunus Simoni, Bing, Kostraver and Murdoch Cherries, Black California Figs; Rice Soft Shell and other Almonds, American Sweet Chestnuts, Præparations Walnuts. Hardy mountain grown Orange Trees. Our Oranges have stood 22 degrees this winter without injury. Dollar Strawberry, the best berry for home use or market. Address C. M. SILVA & SON, Lincoln, Placer County, California.

NAPA VALLEY NURSERIES.

(ESTABLISHED 1878.)

The Fruit Tree Planting Season being over for this season, attention is called to

Flower and Foliage Plants in Great Variety.

CHRYSANTHEMUMS, the best of the best, now ready. Fine young plants for fall blooming. Ageratum, Achyranthus, Cyperus alternifolius, Palms, Fuchsias, Geraniums, Carnations. FINE PLANTS AT LOW FIGURES.

A great variety of well-grown plants of the most favorite sorts. Send for catalogue. A magnificent stock of Fruit Trees being grown for next season.

LEONARD COATES, - - - NAPA, CAL.

Residence: Sausal Fruit Farm.

What Is Chemistry.

Everybody who thinks must be impressed by the great variety of things found on this earth, and the question, What does the earth consist of? must often suggest itself. Among the most important results reached in studying the things around us is this, that notwithstanding their great variety they are made of simple things, and these in turn of still simpler—that there are, in fact, only about 70 distinct kinds of matter, and that all the complex things around us are made up of these seventy elements. The solid crust of the earth, as far as it has been possible to investigate it, all living things, both animals and plants, the air and water, consist essentially of twelve elements. The elements do not, as a rule, occur as elements. They are generally found in combination with one another. Oxygen and nitrogen are, to be sure, found in the air as elements, uncombined; but such familiar substances as water, salt and quartz consist of elements in combination. Thus water consists of hydrogen and oxygen. Hydrogen, the element, is a colorless, tasteless, inodorous and very light gas that burns readily. Oxygen, the element, is also a colorless, tasteless, inodorous gas. It does not burn, but burning things burn with much increased brilliancy in it. When hydrogen and oxygen are mixed together in a vessel under ordinary conditions, no action takes place. They mix thoroughly, forming a mixture that is also a colorless, tasteless, inodorous gas. If a spark is applied to this mixture a violent explosion occurs, and this is the signal of a great change. The two gases have entered into chemical combination; they are no longer the gases hydrogen and oxygen; they have entered into combination and now form the liquid water, a substance with properties entirely different from those possessed by the constituents.

Again, chlorine, the element, is a greenish-yellow gas that acts violently upon other things and causes changes in them. Inhaled even in small quantity it gives rise to distressing symptoms, and in large quantity it causes death. Its odor is extremely disagreeable. Sodium, the element, is an active substance that has the power to decompose water and set hydrogen free. When chlorine gas is brought together with sodium, the two combine chemically and form the well-known compound salt, or, as the chemist calls it, sodium chloride. From this the elements chlorine and sodium can be obtained by the chemist. These two examples serve to show what is meant by chemical combination and by a chemical compound. Chemical compounds are generally found mixed with other compounds. This is shown, for example, in many of the varieties of rocks, as granite, which consists of three different chemical compounds. It is shown much more strikingly in living things, all of which are made up of a large number of chemical compounds, mixed, to be sure, not in a haphazard way, but beautifully adjusted and working together in wonderful harmony. Just as elements combine chemically to form compounds, so elements act upon compounds and cause changes in their composition. Thus oxygen is constantly acting upon other things, sometimes slowly but, in the case of fire, rapidly and with tremendous energy. It is commonly said that fire destroys things. In fact, it changes their composition, and the principal products of the change are gases. This kind of chemical change is the most familiar that is brought about by the action of an element upon compounds. Compounds, too, act upon compounds, and cause an infinite number of changes in composition. Thus the food we partake of consists of chemical compound. In the body these compounds find others and they act upon one another so as to repair the wasted tissues and cause growth. The gas known as carbonic acid, that is contained in the air, acts upon the compounds in the leaves of plants and causes changes that are absolutely essential to the life and growth of the plant.

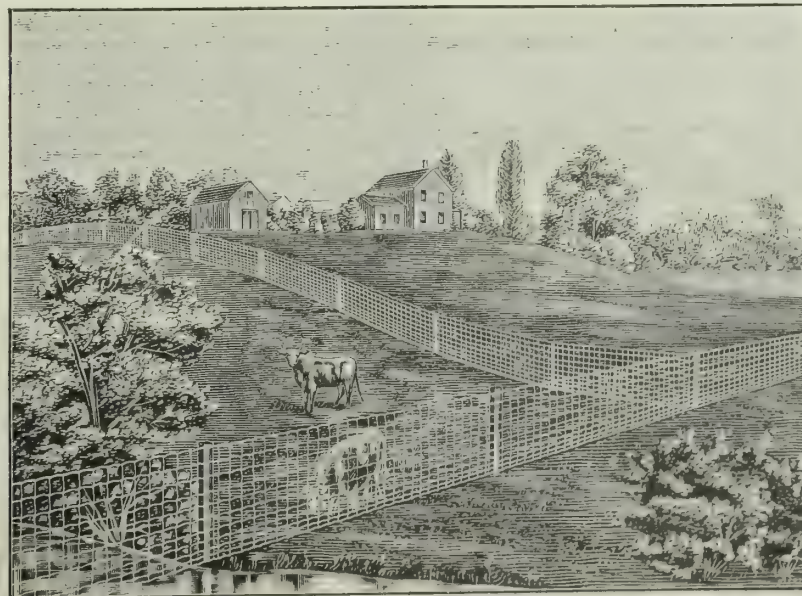
Look, then, in any direction and you will see evidence of changes in composition that are constantly taking place, and that are essential to the existence of the world as it is. These changes in composition and the compounds themselves that are involved in the changes form the subject of chemistry. In the light of what has been said, it is clear that chemistry must be a very broad science. Remembering that chemical action is the cause of the formation of chemical compounds, that without chemical action the compounds would cease to exist, and would be resolved into their elements, it is impressive to think what would take place if chemical action would cease. Most of the things familiar to us could not exist. The solid portions of the earth would, to a

large extent, be replaced by the element silicon, something like charcoal, and by oxygen and a few metals such as sodium, potassium and aluminum. Water would be resolved into the two gases hydrogen and oxygen. All living things would fall to pieces, and in their place we should have the gases, hydrogen, oxygen and nitrogen, and the solid element carbon, most familiar to us in the form of charcoal. Life would, therefore, be impossible.—Chautauquan.

Where Scrap Iron Goes.

Nothing goes to waste on a big railroad, and every scrap of iron and much second-hand material is valued at a fixed price and carried on the books as so much stock on hand. The system followed by the storekeeper's department of one railroad is a sample of many. The second-hand metals are gathered and placed in piles, regularly assorted. Then they are classified by the foreman and taken into stock by the storekeeper or assistant. There are regular schedules—one of material which can be used again, which is denominated "second-hand," and another of material which has to be melted before it can be used, which is known as "scrap." The classes are arranged something after the following order: Steel scrap, Nos. 1, 2, 3, 4, 5 and 6, at prices ranging from \$28 a ton down; wrought iron, Nos. 1, 2, 3 and 4; cast iron, Nos. 1, 2, 3 and 4. Even borings are taken into account, brass borings being credited at eight cents per pound, and brass scrap and copper at twelve. This material is shipped to division headquarters when a carload has accumulated. Here it is disposed of by the storekeeper on order of his chief, being shipped in carloads to big dealers in old metals in large cities. Much of it goes to Pittsburg, Cincinnati and such points. Orders for as high as 500,000 pounds of one kind of material are occasionally received from single firms. Most of the second-hand material is used over again in the shops, but it is previously taken on the books at a fixed price by the storekeeper and is charged up to the account of the articles for which it is used. All usable No. 1 wrought iron is received and charged up at one and one-fourth cents a pound, and cast iron at one cent.

At Great Falls, Mont., the volume of water passing in the upper Missouri is about 4800 cubic feet a second, and at Fort Benton (twenty-five miles farther down stream) United States engineers report it at 4331; and now the question arises, what becomes of the rest? A belief is entertained that the water drains off through the sand and supplies the great artesian well basin of South Dakota.



A PAGE WOVEN WIRE FENCE.

"A Battering Ram"

Or a battering bull or any other attacking animal cannot demolish the Page Woven Wire Fence because "it's not built that way." There is a great strength in the netted wires. It isn't stone-wall strength, but a strength that doesn't injure. If a head of stock bolts against this fence he is thrown back unharmed, just as an acrobat leaps from the dome of a circus and springs lightly up from the net far beneath. The coiled springs that form the netting keep the fence from sagging and the strain of support off the posts. Coiled spring fencing will stand with no middle posts at all, and requires fewer posts to keep it firmer than any other combination. You can rob it of its elasticity—bury it 'neath snow drifts, weigh it down in any manner and you will find that when the weight is removed it bobs up serenely like our

The Roar of Sun Spots.

Nothing has been heard lately of Mr. Edison's attempt to make the roar of sun spots audible by means of an electro-magnetic device connecting the earth currents with a telephone, says the New York Sun. The idea was that the impulses believed to be transmitted from the sun to the earth when great spots are forming on the solar surface might be translated into sound waves, thus, in a sense, enabling us to listen to the voice of the god of day when his temper is disturbed.

Recently an experiment of similar nature has been tried in England by W. H. Preece, and apparently with success. During the magnetic storm of March, which seemed to be connected with disturbances in the sun, telephones were inserted in some of the principal telegraph circuits, and they gave out various sounds. Sometimes the noise was like the twanging of musical strings or wires; then again it resembled whistling. Some observers hear reverberations in the telephone like the rumbling of heavy carts. Occasionally high-pitched notes and screeches were emitted, followed by low musical sounds like the laps of waves upon a beach.

While these strange noises were given forth from telephones attached to telegraph lines—one was the Liverpool-Hamburg wire—aural lights, white, green and rose-colored, were seen in various places playing up and down the sky, and the earth appeared to be tingling with electric currents.

Evidently there is still a great opportunity for discovery concerning the origin and nature of such magnetic storms and their relation, if any, to the sun. So far, speculation has held the field in this direction, but a few facts are beginning to emerge, and any day a brilliant discovery may illuminate the whole mystery with a flood of light. Then, perhaps, we shall know whether it was the earth or the sun that made Mr. Preece's telephones sing and whistle and shriek, while the heavens shimmered with light that was not of the stars.

PROF. LAWSON TAIT says there are certain orchids that secure the fertilization of their stigmas by making bees drunk. In no other way could they get these insects to cut up the necessary antics to carry the pollen to the proper place. Every such flower is a veritable liquor saloon, licensed by nature. The beverage supplied is distinctly alcoholic.

The heroine of a certain sensational novel was very much agitated. "Her breath," wrote the novelist, "came in short pants."—Youth's Companion.

Patents Issued to Pacific Coast Inventors.

Reported by Dewey & Co., Pioneer Patent Solicitors for Pacific Coast, 220 Market St., S. F.

FOR WEEK ENDING MAY 8, 1894.

519,373.—GAS FURNACE—G. E. Belmer, S. F.
519,600.—CAR COUPLING—B. Bormann, North Temescal, Cal.
519,467.—CHART HANGER—W. S. Cramer, Suisun, Cal.
519,484.—VOTING MACHINE—W. M. Cutter, Marysville, Cal.
519,468.—AXLE NUT—Deats & Stewart, Phoenix, A. T.
519,499.—FIRE ESCAPE—O. W. Ellis, Tekoa, Wash.
519,684.—FISH HOOK—Goff & Juddins, Los Angeles, Cal.
519,464.—DRILL CHUCK—R. J. Holland, Nevada, Cal.
519,477.—NECKTIE FASTENER—Catharine McNeil, S. F.
519,508.—FAUCET—W. J. Oswald, San Jose, Cal.
519,619.—ENGINE—Reynolds & Ketchum, Seattle, Wash.
519,478.—LIQUID CONTAINING DEVICE—A. H. & T. A. Schleuter, Oakland, Cal.
519,371.—FAULT PICKER—B. A. Wright, San Jacinto, Cal.

FOR THE WEEK ENDING MAY 15, 1894.

519,981.—FLUME RIFLE—S. A. Baggs, Riverside, Cal.
520,015.—CASKET HANDLER—L. H. Bannister, Pescadero, Cal.
520,016.—CASKET HANDLE—L. H. Bannister, Pescadero, Cal.
519,694.—DRIER—A. Blatchly, S. F.
519,831.—FASTENER—J. A. Boyer, San Diego, Cal.
519,992.—WATER SPRINKLER—H. B. Everest, Riverside, Cal.
519,861.—CAR COUPLING—T. Johnston, Tacoma, Wash.
519,815.—RELEASE DEVICE—H. Laband, Traver, Cal.
519,793.—FLY ENVELOPE—R. F. Lotspeich, Los Angeles, Cal.
519,864.—ENVELOPE—G. H. Martin, S. F.
519,730.—REFRIGERATOR—J. E. McLaughlin, S. F.
519,817.—SWAGE—C. A. Metto, Santa Cruz, Cal.
519,819.—VAPOR BURNER—E. I. Nichols, S. F.
520,014.—PRESERVING MILL—F. D. Smith, S. F.
519,331.—BEER FAUCET—G. A. F. Strouber, Oakland, Cal.
519,880.—GAS ENGINE—H. Swain, S. F.

NOTE.—Copies of U. S. and Foreign patents furnished by Dewey & Co. in the shortest time possible (by mail for telegraphic order). American and Foreign patents obtained, and general patent business for Pacific Coast inventors transacted with perfect security, at reasonable rates, and in the shortest possible time.

GRANGERS' BUSINESS ASSOCIATION.

Principal Place of Business, 108 Davis St., San Francisco, State of California.

NOTICE:

There are delinquent upon the following described stock, on account of an assessment levied on the eleventh (11th) day of April, 1894, the several amounts set opposite the names of the respective stockholders as follows:

Names.	No. of Certificate.	No. Shares.	Amount.
Adams, D. Q.	220	8	\$ 30 00
Ashley, Geo. W.	246	6	22 50
Adams, Amos.	326	12	45 00
Baker, John.	268	8	30 00
Barber, M. R.	258	8	30 00
Barber, Orpha.	257	4	15 00
Barber, Elam B.	259	4	15 00
Bangs, J. L.	37	10	37 50
Blyther, Mrs. A. E.	53	2	7 50
Brown, Sherman.	49	8	30 00
Brake, G. W.	44	1	3 75
Carr, Nelson.	61	20	75 00
Clark, Jas.	69	20	75 00
Clark, Annetta.	60	4	15 00
Dewey, Mrs. A. T.	382	2	7 50
Ewer, W. B.	282	20	75 00
Frost, T. G.	77	2	7 50
Frye, W. H.	76	20	75 00
Gates, T. M.	340	2	7 50
Gray, M. L.	7	28	105 00
Hollenbeck, H. M.	238	8	30 00
Hollenbeck, Mrs. H. M.	239	8	30 00
Jewell, H. M.	111	88	142 50
Learned, D. A.	131	20	75 00
Larkey, John.	184	30	112 50
Leffingwell, Sr., Wm.	333	8	30 00
Leffingwell, Jr., Wm.	332	8	30 00
Morris, J. R.	241	80	300 00
Morris, J. R.	242	12	45 00
Montpellier, A., Tr'tee	467	200	750 00
McReynolds, S.	10	8	30 00
Nuckoll, N.	174	4	15 00
Nuckoll, Mrs. S. A.	175	2	7 50
Naglemaker, John.	477	10	37 50
O'Brien, J. G.	283	20	75 00
Pittman, Mrs. C. J.	197	6	22 50
Pittman, Carrie.	198	4	15 00
Proctor, G. W.	217	40	150 00
Russell, Mrs. C. B.	462	40	150 00
Rose, Miss C. E.	397	40	150 00
Sawyer, Jackson.	16	4	15 00
Swain, R. C.	179	8	30 00
Strentzel, J.	187	2	7 50
Sayward, J. W.	323	4	15 00
Steckter, Mary E.	348	2	7 50
Steckter, John.	347	2	7 50
Steckter, P. J.	346	2	7 50
Smith, S. R.	454	16	60 00
Smith, S. R.	455	20	75 00
Tuck, J.	313	86	135 00
Van Sandt, A. A.	200	4	15 00
Vincent, J. P.	243	10	37 50
Wilson, E.	130	6	22 50
Walker, Robert.	185	16	60 00
Whitney, Mrs. S. D.	442	2	7 50
Young, A. J.	193	2	7 50

And in accordance with law and an order of the Board of Directors, made on the 11th day of April, 1894, so many shares of each parcel of such stock as may be necessary, will be sold at public auction at the office of the Corporation, No. 108 Davis street, San Francisco, Cal., on FRIDAY, the 15th day of June, 1894, at two o'clock P. M. of said day, to pay delinquent assessments thereon together with costs of advertising and expenses of sale.

CHARLES WOOD,
Secretary Grangers' Business Association,
Office, 108 Davis street, San Francisco, Cal.

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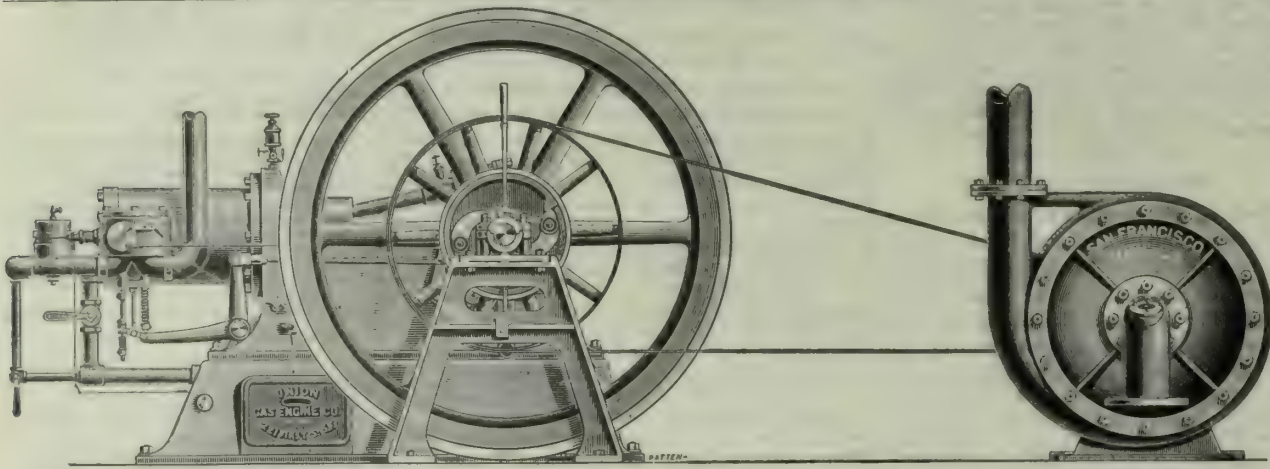
EGGS WILL PAY LARGE PROFITS

At 12 cts per dozen. If you doubt it, write me and I will tell you how. Give plainly your name, address and business. H. K. STARKWEATHER, 310 Cal. St., S. F.

WARNING!

Many so-called gasoline engines are now on the market which are direct infringements of our patents, and it is our intention to bring suit against the various infringers.

As the law holds the purchaser, as well as the manufacturer, we would advise parties who have already purchased other gasoline engines to obtain from the sellers of such engines A GOOD AND SUFFICIENT BOND PROTECTING THEMSELVES IN CASE DAMAGES ARE OBTAINED AGAINST THEM, as it is not the policy of this company to work a hardship on innocent parties, but the law makes no such provision.



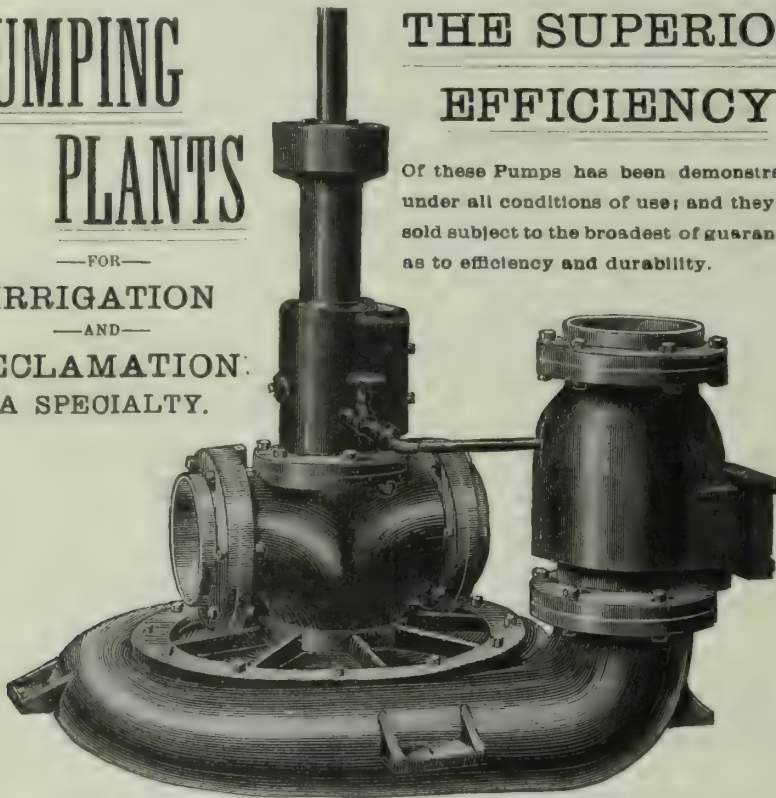
UNION GAS ENGINE CO., 221-223 First Street, San Francisco, Cal.
OWNERS OF 20 PATENTS.

PUMPING PLANTS

—FOR—
IRRIGATION
—AND—
RECLAMATION:
A SPECIALTY.

THE SUPERIOR EFFICIENCY

Of these Pumps has been demonstrated under all conditions of use; and they are sold subject to the broadest of guarantees as to efficiency and durability.



Jackson's Vertical Water-Balanced Runner and Shaft "Whirlpool" Centrifugal Pump,

For use in pits, with long bearing and patent water-sealed gland.

WRITE FOR CATALOGUE No. 15 which contains all the information necessary to estimate cost of Complete Pumping Plants—using Steam or Gas Engines, Horse Power or Water Power—and cost of operating same per acre or per horse power per hour, or season.

— ADDRESS —

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Deciduous Fruit Trees Our Specialty.

THE MOST COMPLETE ASSORTMENT OF

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1,000,000 TREES FOR THE SEASON OF 1894-95 IN STOCK.

Acknowledged everywhere to be equal to the best. Guaranteed to be healthy and free from scale or other pests. Send for catalogue and prices. Correspondence solicited. Address

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BIGGS, BUTTE COUNTY, CALIFORNIA.

PACIFIC RURAL PRESS
Is the Largest Illustrated and Leading Agricultural and Horticultural Weekly of the West
Established 1870. Trial Subscriptions, 50c for 12 weeks, or \$2.40 a year (till further notice). DEWEY PUBLISHING CO., 220 Market Street, San Francisco.

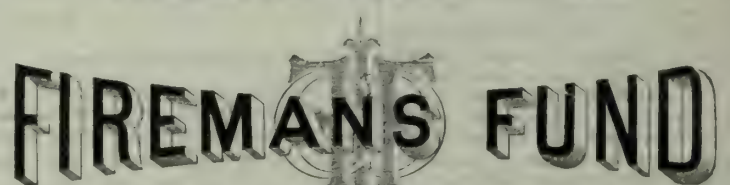
CALIFORNIA
If you want to know about California and the Pacific States, send for the **PACIFIC RURAL PRESS**, the best Illustrated and Leading Farming and Horticultural Weekly of the Far West. Trial, 50c for 3 mos. Two sample copies, 10 cents. Established 1870. DEWEY PUBLISHING CO., 220 Market St., San Francisco.

The Situation as to Horse-Breeding.

Before giving up the breeding of horses and declaring the business dead, will it not be well to take a candid practical view of the case, and before throwing away an advantage already gained, consider well what has brought on present conditions, whether the causes are likely to continue indefinitely, and if not, how best to take advantage of the change when it comes. Nearly every kind of business has had its boom and reaction during the last twenty years, and the horse business has been one of them. Its effects have been and are felt over a wider extent of country than almost any other business, because it is so intimately connected with every other. Many breeders attribute the present condition of the horse market to over-production, and the introduction of electricity. The over-production has been entirely of the cheaper grades, and this class is what is being displaced by electricity. Electricity can never take the place of the heavy draft or fine coach horse. General business depression has had more to do with the fall in the horse market than anything else. Nearly every one is economizing and doing without or making the best of what they have. That this condition will last long no one believes. A renewed demand is among the certainties of the future. When this fresh demand comes there will be a short supply to meet it, because of the falling off in breeding for the past three years and the probable continuance of it for a year or two to come. Horses, as a rule, are short-lived animals. The visible supply is being used up at a very rapid rate, and the fact that it takes five years to produce a horse ready for market is lost sight of by the croakers who are now and have been for three years crying the horse business down. Another fact is that the best time to engage in the production of any staple commodity is when it is down and not when it is booming. So many farmers have learned by sad experience that they cannot produce salable horses from ordinary stallions and have given up the attempt, that the chance for those who can and do raise first-class horses in the future will be greatly improved. Taking past experience and a candid view of the future of this country, it would seem that now is the right time for those farmers who are favorably situated to take hold of high-class horse breeding in earnest. They can now secure a choice selection of mares at moderate cost and buy first-class stallions at "rock-bottom" prices. The latter can now be bought cheaper than they are likely to be again for years, for the reason that this year will about use up the stock of imported stallions on hand and good ones cannot be imported to sell at prevailing prices. Think on these things. Should not, under the circumstances, the owners of mares be more particular than ever in their choice of stallions and breed more judiciously than ever for the inevitable future market? The present conditions are simply the result of bursting boom bubbles. This country is not going to destruction; business is settling down to a sound basis, and a healthy reaction is sure to follow. A revival in general business will bring a quick and strong demand for horses, and the man who then has good ones can name his own price for them. The main point in breeding is the choice of a stallion, and care should be taken to buy only the best and from a reputable importer.

There has been lately landed in San Francisco the finest lot of imported Percheron and French Coach stallions ever brought to the Pacific Coast. This stock ranges in age from two to six years, and was selected in France by the veteran importer, Leonard Johnson, who for many years was foreign buyer for M. W. Dunham, of Wayne, Ill. Mr. Johnson has personally selected and brought to this country over Two Thousand Horses, and is universally acknowledged to be the best judge of Draft Horses in America. Each animal in this lot is a good one, not only individually, but of the best possible breeding, as is attested by the certificates of registry in both the Percheron stud-books of France and America. A satisfactory guarantee given that each stallion will get sixty per cent of colts. This is a rare chance to get a first-class stallion, as no such stock as this has ever been offered for sale here at as low figures as this will be sold for. Time given on approved paper. STABLES—Close to Midwinter Fair, on Fifth avenue, opposite Race Track, next door to Scott & McCord's Feed Store, San Francisco, Cal. Take Geary street car. For further information and catalogues, address the Secretary of the American Percheron Horse Breeders' Association, S. D. THOMPSON, SAN FRANCISCO.

INSURE WITH THE



INSURANCE COMPANY.

CAPITAL:
\$1,000,000.

ASSETS:
\$3,200,000.

PACIFIC RURAL PRESS

Vol. XLVII. No. 23.

SAN FRANCISCO, SATURDAY, JUNE 9, 1894.

TWENTY-FOURTH YEAR.
Office, 220 Market Street.

Mr. Thompson Explains the Origin of His Navel Orange.

A. C. Thompson of Duarte made public in 1891 his possession of an improved variety of the navel orange, which was illustrated in the RURAL PRESS of May 30th of that year. He did not desire at the time to disclose the "process" by which he secured the improvement, but to meet a great pressure of inquiry, he stated that it was secured by budding one variety into another, buds from this growth into another, etc. Naturally there was much incredulity shown as to the efficacy of this process, for horticulturists were not disposed to grant an influence of stock upon scion to that extent. We have just received a letter from Mr. Thompson, in which he acknowledges that his explanation of his process was only a half-truth and that he sympathized with the views of his critics, but he did not desire at that time to explain further. Three years have elapsed, and now he states that he makes a clean breast of the matter. In his letter to the RURAL, dated June 3d, he writes as follows:

In the box of oranges which I send you you will find two pieces of orange wood, each with a waxed wrapper around it. Remove the wrapper and use a magnifying glass upon the bud which you will see inserted in the usual manner. Look carefully at this bud and you will see, by the split through it lengthwise, that it is composed of two half-buds of the same size, put together and inserted as one, waxed over, after being concaved to fit the convex side of the stock and concaved a little also in the split so as to bring both edges of the germ together closely. This has to be done of course with a very thin, sharp knife. Now say, for instance, that one of the above half-buds is a Washington Navel and the other half St. Michael. These grow together and form one shoot. From this shoot next season take buds and from Malta Blood take buds of equal size and maturity; split and unite these halves as one bud, fit them well and neatly together, wax over lightly and cover with a wax wrapper. String will no do, as the buds would dry out. Next season again take buds from this new growth and halve them with half-buds of Mediterranean Sweet. Here, then, you get a growth which includes all the varieties named.

At the end of three weeks from budding the wrapper has to be removed and the buds examined with a magnifying glass. If the union is complete at the crown of the germ, return the wrapper to exclude sun and air until the bud starts to grow. Sometimes only one-half of the bud starts to grow; all such should be cut out and the budding done over again. Sometimes both halves die or both halves grow separately. Then it has to be done over again on a new place in the stock. There ought to be at least fifty buds of each combination put in at the same time, to cover failures.

Mr. Thompson's specimens of inserted buds are just as he describes. It is a high style of budding but it is perfectly feasible if the manipulation is skillful and careful enough. We believe it is not a new thing, except in its application to the orange, but so far as we know he is the first to apply such manipulation to the origin with the purpose of producing new varieties. The secret in the practical operation lies in the matching of the half buds and the covering to exclude air.

Mr. Thompson's explanation is that he produced his variety of the navel orange by close intermarriage of the wood of the varieties he used. The growing together of the bud potentialities of each would theoretically result in some sort of a combination of the characteristics of both factors. Practically he claims that the Thompson Navel

is one of the outcomes of such a process of what may be called bud grafting, or the use of a bud formed by the grafting together of two half buds of different pedigree. What have our expert horticulturists to say about that? Mr. Thompson's specimens may be seen at this office.

THE exports of oleomargarine are constantly on the increase, to the great injury of butter producers. The total for April, 1894, was 430,000 pounds, valued at \$53,000, com-

Mount Lowe Railway.

There are doubtless but few of our intelligent readers who have not heard somewhat of the Mount Lowe Railway. It is situated near to Los Angeles and Pasadena, and connects these two southern California cities with the majestic Sierra Madre range of mountains. This range has been called by the poetic people of the south, Apennines, the Pasadena Alps, for, as its name implies, it is a sheltering mother, protecting its sun-kissed and flower-bedecked garden of the Lord from the winds which blow strongly in other regions. Picturesque and bold it stands, seamed with deep canyons, wooded gorges and precipitous cliffs. Its serrated summits look near enough to reach them by walking an hour, for the transparent atmosphere deceives. Its peaks are higher than the highest peaks of the White mountains, and one is instinctively seized with a desire to scale them and look down upon the fair panorama beneath. This chain of mountains runs transversely across southern California, near the 34th parallel of latitude.

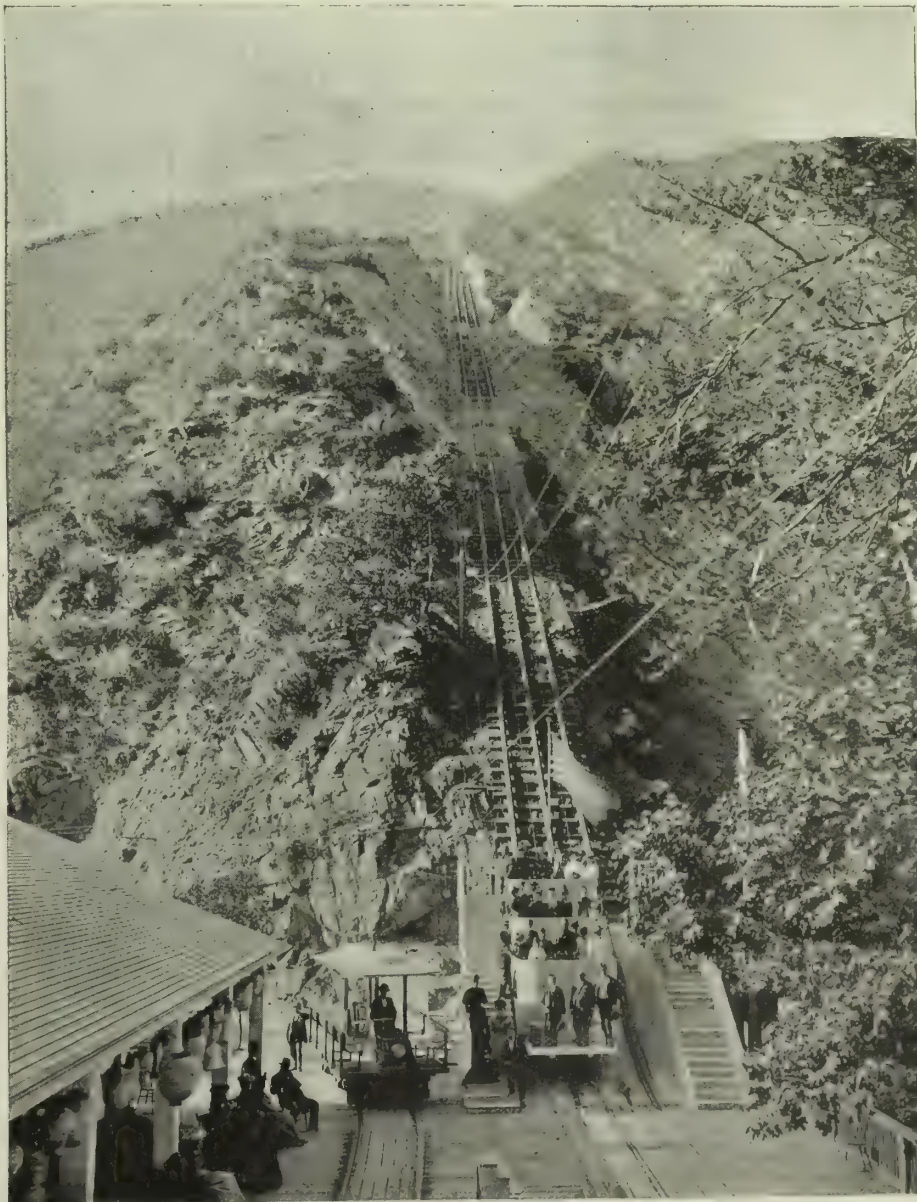
The Los Angeles Terminal Railway directly connects with the Mount Lowe Railway at Altadena Junction. Well-equipped passenger cars, fitted up with the most approved electric power, speed up Lake avenue, and in a few minutes land passengers at Hotel Rubio, from which point start the "White Chariots" of the Great Cable Incline, which latter has been designated "the most wonderful railway of the world."

At Altadena, also, are located the gas engines, working the electric dynamos which supply power for operating the trolley road to Rubio Amphitheater. These consist of two 60-horse power and one 100-horse power gas engines, with a capacity much larger than their specified amount.

The great cable incline called forth the praise of many engineers. It extends from Rubio Pavilion, 2200 feet above the sea, to the summit of Echo mountain, 3500 feet in altitude. It is upward of 3000 feet in length, and makes a direct ascent of about 1300 feet. The cars are permanently attached to an endless cable, and are

so balanced that, in ascending and descending, they pass each other at an automatic turnout, exactly midway on the incline. The cable is of the finest steel and was thoroughly tested to a strain of one hundred tons; and, as under any circumstances the loaded cars will never exceed five tons, its absolute safety is at once apparent.

As visitors ride up this great incline, few realize the arduous labor it represents. Not only were the ordinary difficulties of railroad building to be overcome, but the grade was such that burros had to carry cement and water for building the walls and buttresses, which, in places, were necessary ere the track could be laid; and as there were many points where not even burros could climb in safety, men carried the required materials on their shoulders. It was the money and energy of one man who accomplished this undertaking, when the great majority, with less courage, regarded it as well nigh impossible.



GREAT CABLE INCLINE OF MT. LOWE RAILWAY.

pared with 405,000 pounds, valued at \$52,000 in April, 1893. For the ten months ending April 30, 1894, the total was 3,000,000 pounds, valued at \$370,000, against 2,970,000 pounds, valued at \$353,000, for the corresponding period of last year. Butter producers should consider the effect upon their business of this enormous trade in this imitation.

A RECENT enactment of the Iowa Legislature makes it unlawful in that State to manufacture any substitute for butter or cheese of same color as genuine butter or cheese. Genuine butter may be given a better color by coloring process. All substitutes for butter or cheese must be labeled in plain English language. Restaurants and hotels using butterine must post up a card reading, "Substitute for butter used here." The bill is a very long one and severe penalties are provided for its violation.

PACIFIC RURAL PRESS.

Office, 220 Market St.; Elevator, 12 Front St., San Francisco, Cal.

All subscribers paying \$3 in advance will receive 15 months' (one year and 13 weeks) credit. For \$2 in advance, 10 months. For \$1 in advance, five months.

ADVERTISING RATES.

	1 Week.	1 Month.	3 Months.	1 Year.
Per Line (agate)	\$.25	\$.50	\$ 1.20	\$ 4.00
Half inch (1 square)	1.00	2.50	6.50	22.00
One inch	1.50	5.00	13.00	42.00

Large advertisements at favorable rates. Special or reading notices, legal advertisements, notices appearing in extraordinary type, or in particular parts of the paper, at special rates. Four insertions are rated in a month.

Registered at S. F. Post Office as second-class mail matter.

Our latest forms go to press Wednesday evening.

ANY subscriber sending an inquiry on any subject to the RURAL PRESS, with a postage stamp, will receive a reply, either through the columns of the paper or by personal letter. The answer will be given as promptly as practicable.

ALFRED HOLMAN.....Editor
E. J. WICKSON.....Special Contributor

San Francisco, June 9, 1894.

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The Week.

The first barley reached San Francisco on the last day of May. This is the fourth time in 25 years that new barley has reached tide water in May—once on May 26th, once on May 30th and twice on May 31st. This puts 1894 among the very earliest years in showing a carload of barley, and it is a month ahead of the extreme late date, which is June 30th. The barley sold at auction at \$1.15 per ctt., which is not bad for an era of depression, for the average price reached by first lots of new barley during 25 years is \$1.12 per ctt.

The continuance of the rains is changing the face of affairs more completely than was imagined possible. There is much hay being ruined, but in the aggregate it is more than compensated by the greater product in wheat fields. Wheat which it was thought would not make a decent yield has in some cases attained an excellent condition, and occasionally has gone beyond that and has fallen, through heavy growth, wind and rain. Orchards and vineyards, cultivation of which had been despaired of, have been brought into excellent tilth and have abundant moisture to crop heavily. Still, it does not appear that this should continue. There is much danger of cracking of apricots and plums, and of sad interference with heading, if this damp, dark weather continues. But affairs are getting too complicated for even a well-directed complaint. On the whole, we are getting more out of this year than we expected, and the weight of the changes is on the side of better times.

THE San Francisco fruit commission merchants propose an organization to advance their business. The merchants claim that there are many features of the fruit business in which unity of action is particularly desirable among the wholesale dealers. One of the principal advantages will be the maintenance of an office where the standing of buyers may be ascertained, and thereby all members will, to some extent at least, have a protection against bad debts, which cannot be guarded against in any other manner. It is stated also that an effort will be made to have a uniform size for boxes for the various varieties of fruits, and that steps will be taken toward having growers pay more attention to the packing of fruit. It is not stated whether the dealers in dried and fresh fruits will unite in one organization, or whether each will have its own exchange, but a conclusion on this point will doubtless be reached at an early meeting.

The Canaigre Crop.

Ever since the announcements were made that an arid-land weed might become the basis of profitable culture because the root was rich in tannin and would take the place of vanishing supplies of tanbark, there has been unceasing inquiry on the subject. Readers of the RURAL will remember that the plant is "sour dock," also called canaigre, and botanically known as *rumex hymenosepalus*. The plant grows wild over a great region extending from southern California eastward to New Mexico, and experiments at the State University have shown that it thrives, in California at least, for a considerable distance northward of its habitat. The trouble has been that, though there have been considerable shipments of the dried root and of the extract thereof from all the region where the plant grows wild, and in the eastern portion of that region considerable supplies have been produced by cultivation, there did not seem to be scope and surety enough in the traffic to warrant free investment of land and money in the crop. It was reported from New Mexico that the price had already fallen because of free supply, and it was still something of a problem what American tanners would do with it. We are not nearly so short on tanbark as Europe is, and therefore substitutes for bark can hardly be expected to go so quickly here. It is encouraging, however, to those who have an eye on the culture in this country to know that European advices on canaigre strongly favor the material, and thus create a presumption that its use in Europe may be very large.

We have just received from the Department of State Washington, Vol. 44 of the Consular Reports which has a short paper on this subject from J. O. Monaghan, Consul at Chemnitz, Germany. He shows that the material has had much attention of late from German chemists, and it has been subjected to careful tests at the experiment stations in Austria, which give special attention to leather interests. The director of the station at Vienna states that canaigre is especially suited to upper, saddlers' and fancy leathers. The tanning school at Freiburg, Germany, holds the same view. Dr. Von Schroeder gives the following opinion: "Canaigre is rich in tannin; it dissolves and gives out its acid even in cold water, and that which it does not give out can easily be got out by hot water or steam extraction. By grinding the dry roots or plant, one gets a very good material to mix with tanning barks—oak and hemlock. Canaigre gives leather a soft, bright color, often a clear bright orange. The leather comes out full, smooth and with a good grain."

There seems, then, no doubt but that Canaigre will prove acceptable to the tanners—in fact, very desirable to them. There is a question, however, of market price which must be of prime importance to intending growers. Dr. Von Schroeder says that his inquiries show that canaigre, so far, costs the tanner \$3.60 to \$3.90 per centner (112 pounds), including freight, and this, counting an average of 28 per cent of tannin, makes it cost 13 cents per pound. This, he says, is a great deal too much and will preclude importation. It seems likely, then, that the field for our canaigre will depend upon how much we can cheapen production and how much it need cost to get the tannin into the form of an extract, which will be concentrated and save much in cost of transportation. It is not to be expected that we can export dried canaigre roots profitably half way around the world. Extraction and concentration by the cheapest and most expeditious methods must be resorted to.

Again, it is not sure that we shall long have the monopoly which we now have of the production. There must be vast areas around the Mediterranean suited to the crop, and growers there, aided as they are by Government inquiries and experiments, will soon be put on the track of the plant. It will then be a question as to how long we can hold the European market, for with our greatest cheapening of the product we can hardly expect to compete with the cheap labor of South Europe and North Africa. Still we have the vast tanning industries of the United States to exploit, and in this undertaking the European decision upon the value of the material will be of great aid.

Canaigre, then, is a promising thing, but it needs much more investigation into production and commercial aspects of the product before large investments in the crop or the product will be warranted.

THE wine producers met at the Viticultural headquarters in this city on Friday of last week to discuss the features of the situation and outlook. There was much discussion, but no clear policy decided upon. Finally a committee was appointed, which is meeting this week, and will ere long present a report embodying suggestions for the good of the interest. How grave is the condition of the wine-producing industry can be inferred from an incisive letter which we publish upon another page.

From an Independent Standpoint.

This week the editor gives up very cheerfully much of his own space to a letter from Judge John Currey of Solano county on the subject of State taxation and expenditure. No other subject is better worth the attention of the people at this time, especially of land owners, who pay the bulk of the taxes. The semi-annual tax payment just made has been to most of our people a "rub on the raw," for the funds to meet it came, in the majority of cases, by heroic self-denial, or through borrowing, to be repaid painfully in the future. How this tax money, thus gotten together in hard ways, is being spent is shown in Judge Currey's letter.

The discussion of this question is just now very timely because we are about to elect a new set of State officers, including a new legislature, who will have the power to cut out of our complicated system the follies and extravagances which discredit it and make public hardship. The Populists who held their convention two weeks ago pledge a sweeping reduction in the charges of the State government. The Republican and Democratic conventions have yet to meet, and there is still time for the creation of a public sentiment that will compel them to do likewise. Let it be understood that the demand for financial reform is strong and universal, and it will come. Now is the right time to strike for relief from a burden which has become intolerable.

It is not necessary—indeed, it is not desirable—to make this proposition to cut down the expenses of our State government a party issue. It is a matter which profoundly concerns everybody, and the movement ought to be strong enough to accomplish the desired end, no matter which party wins the next election.

It is not enough that party conventions should give pledges to limit the tax rate. That is a childish way to go about the work, and it has, moreover, been tried and has failed. What is wanted is the assurance of specific reforms with the nomination of men competent to carry them out.

The less done in the way of "placing the blame," in crimination and recrimination, the easier the work of reform will be. If the people stop to potter over bygones, the energy which might win the fight will be wasted in controversy. To an extent, we are all—Democrats, Republicans and Populists alike—responsible for the existing conditions, for we have all helped either by action or inaction to create them. Let the past with its mistakes and its blames be buried and forgotten and let us put our whole effort into the fight for a wiser and better order of things for the future.

Reform can be accomplished, but it will require earnest work. The existing system is a prodigious force because it has created a class which profits largely by and through it. But it is a force which will give way before a united and unwavering front of public demand backed by a stern public conviction.

Judge Currey's Letter.

A Demand for Reform in State Taxation and Expenditures—Who Pays the Taxes and How the Money Is Expended.

DIXON, CAL., June 4, 1894.

TO THE EDITOR:—The Single Tax theorists maintain that revenues for the support of the National and State Governments should be raised by the direct taxation of the lands of the country alone, thus dispensing with tariffs and impost duties on the goods of foreign countries brought to the ports of the United States. They advocate the exemption of all improvements made upon lands by the labor of men, and of all personal property, including stocks, bonds and money. They claim to believe that land, as it exists in a state of nature, should bear all the burden of supporting National and State Governments. Whether or not this doctrine of the Single Tax theorists be right or wrong, it is not my purpose now to discuss, more than to say, in passing, that while I remember there is a maxim of equity jurisprudence that "equality is equity," I cannot concur in this doctrine of this new school of economists. My present purpose is to show the land-owners of our State how nearly their condition is to that to which the advocates of taxing lands only would have them subjected.

It is admitted by all informed on the subject that the lands of our State are made to bear more than 80 per cent of all the taxes imposed by law for the support of our State and county Governments. Something like 20 per cent, it may be, is contributed by personal property, consisting of goods and chattels and live stock, and bonds and money assessed and taxed, of which the farmers and agriculturists of the country contribute their full share. It thus appears that this 20 per cent contribution to the tax fund collected for State and county support is a relief to that extent to the lands and improvements thereon. This relief of merely 20 per cent places the land-owners of the country in a little better situation than they would be in if the Single Tax system were in full and complete operation. Certainly the Single Tax theorists may well be

satisfied with the practical advancement of their doctrines of recent birth and growth.

All taxpayers on lands used and occupied as a means of subsistence, who have the courage to look their obligations in the face, must realize that their condition is one of gross and grievous oppression, brought upon them by reckless extravagance and wicked legislation and administration of public affairs. As things are, the proprietors of lands occupied and used for the support of themselves and families need not look to the rich men of the country, whose wealth consists of stocks, bonds and money, and other personal property, for either moral or material aid in their present extremities, for these wealthy denizens of our cities and towns may well be content with the present management of our State financial affairs. Their share of the taxes is small, and hence they cannot be counted on to help those who are compelled to bear the heaviest end of the load. If retrenchment and reform in the matter of appropriation and taxation are to become accomplished facts, it can only be by the united efforts of the land-owners of the country. No one should be elected to the next Legislature of our State who is not in sympathy with our tax-burdened people, and who is not ready to pledge himself in favor of radical retrenchment and reform in all matters of appropriations and expenditures of the people's money.

Less than half the money now collected and spent as it is would defray all necessary expenses of government, and at the same time the demoralization and degradation which follows in the wake of wasteful extravagance in our public affairs would be avoided. To extirpate the evils that are destroying the producers of material wealth in our State, those immediately concerned must take the matter in hand and with unanimity lay the axe at the root of the Upas tree, whose poisonous breath is withering and blasting the industrial enterprises of the land; and let them remember, also, as an incentive to determined action, that there is no State in the Union so badly governed in its financial affairs as is the State of California.

It may be asked, What are the particular evils to be remedied so as to bring about retrenchment in public expenditures? And further, it may be asked, By what means are the needed reforms to be effected? The last of these questions may be first answered: The needed reforms of existing evils must be made mainly by the Legislature, properly aided by the Governor of the State and all State officers within their own departments of Government service. To the question, What are the particular evils to be remedied, it may be answered that they are greater in number than it is here practicable to enumerate in a brief newspaper article, but some of them are here pointed out as examples of the many.

By our existing Constitution, by some called the "Sandlot Constitution," a Railroad Commission was created which, unto this time, has been of very little, if any, practical benefit to this State or the people thereof. The general Appropriation Act, passed in March, 1893, for the forty-fifth and forty-sixth fiscal years, exhibits an appropriation for salaries of these Commissioners and other expenses of the Commission amounting to \$35,740. So much money squandered by constitutional and legislative behest.

The State Board of Equalization, created by the same Constitution, is by many considered of more than doubtful utility. It cost the taxpayers for said fiscal years \$30,510. In this respect, it is less objectionable than the Railroad Commission.

For the same fiscal years the Governor's office is made to cost \$37,800. It may be that there is no just ground of complaint to be made to the Governor's salary for the two years, amounting to \$12,000; but what is to be said of the salary of his private secretary, \$8,000; and of the salary of the Executive secretary, \$5,200; and of the salary of the stenographer, \$3,200; and of the salary of the messenger, \$2,400?

For the same fiscal years, the Attorney-General's office is made to cost \$38,460. The salary of this State officer for the two years, amounting to \$6,000, is reasonable enough; but what of the salaries of deputies, amounting to \$14,000; and that of the stenographer, \$3,600; and of the costs and expenses of suits wherein the State is a party in interest, \$6,000; and of the expenses of the Attorney-General in tax suits and other suits in the United States courts, \$2,000? It should be remembered that the Attorney-General is permitted to practice law on his own account, while in office. It is a known fact that the present incumbent of this office has during his term secured large emoluments in the private practice of his profession. Is it not the duty of a State officer, paid by the taxpayers of the State, to give to the duties of his office his entire attention and service?

These instances of expenditures for the support of State offices are given as examples of the waste of the people's money in high places of honor and trust.

The cost of the military organizations of our State, as appears in the General Appropriation Act, amounting to \$352,540, for said fiscal years, has already been mentioned in a paper on the subject of taxation published in the San Francisco Bulletin in April last, and reproduced in several of the country journals of the State. The adage is, "In time of peace prepare for war." Once only in the course of 30 years past has the service of one or two companies been called into requisition. This was to suppress a riotous outbreak of the miners in the county of Amador, and then all that the companies did was to "march up the hill and then march down again." It is suggested that our next Legislature might very properly inquire as to the condition of our military preparations for war.

The attention of the taxpayers of the State is invited to the amounts appropriated by the last Legislature for payment to employees of the State Capitol building and grounds, amounting to \$59,650, for said fiscal years, and to policemen at the Capitol grounds, \$7,000, and for implements, hose, etc., for Capitol grounds, \$5,000.

The appropriation for repairs of the Capitol building and furniture, and for carpets, and for the construction of

an elevator, amounts to the sum of \$25,000. Who is there that believes these sums are not largely in excess of what was and is needed for the care of the Capitol buildings and grounds? Seventy-one thousand six hundred and eighty dollars appropriated and expended, and to be expended, for the care of the Capitol and the Capitol grounds in the course of two years, may not seem to be large in the eyes of the politicians who make appropriations, only a small part of which they pay; but to those who foot the bills it appears quite otherwise. But these appropriations for the Capitol and Capitol grounds are not all. In addition, there was appropriated for lighting the grounds, \$2,400; for water for Capitol building, \$1,200; for water for Capitol grounds, \$2,400. What will our farmers and horticulturists say of such extravagance?

The number of institutions, commissions, bureaus and positions created in past years by legislative enactments, and supported by State taxation, is frightfully large. Many of them should be abolished outright, and all others should be limited in expenditures to what is actually necessary to their proper, economical maintenance.

We have three Normal Schools, costing \$194,000 for the two years mentioned; for the same time the Whittier Reform School cost \$160,000; the Preston School of Industry, \$70,000; the Labor Bureau, \$18,400; the Mining Bureau, \$50,000; fish restoration and protection, \$20,000; fish hatcheries, \$15,000; suits for violation of fish laws, \$4,000; attorneys for boards of health, \$6,000; guardian of Marshall's monument and grounds, \$1,200; guardian for Yosemite valley, \$3,000; travelling expenses of Yosemite Valley Commissioners, \$3,000; care of Yosemite valley, \$20,000; care of Mariposa Big Trees, \$5,000; salary of superintendent of State Printing Office, \$6,000; expense of State Printing Office, \$250,000; compiling and printing index to the laws of the State from 1850 to 1893, \$8,000; aid to district agricultural societies (43 in number), \$192,500.

We have bank commissioners, insurance commissioners, loan association commissioners, State harbor commissioners, fish commissioners and others whose salaries and office expenses do not appear in the General Appropriation Act, but are provided for in other acts of the Legislature. When all expenditures are added together, they are found to aggregate the sum of \$8,425,000 for the support of the State Government for the two years beginning with the 1st of July, 1893, and the county governments of the State cost nearly or quite one-third more than does that of the State. The condition of our State and county financial affairs demands a change which shall be radical and sweep out of the way a horde of place-holders, who, with their predecessors, have cursed the land for many years past. They are a class who do not live by the sweat of their own faces, but by the sweat and toil of those who struggle hard and practice rigid economy to earn and save enough to support themselves and families and to pay their taxes, which at this time in the history of our State they are unable to pay without borrowing.

The remedy for the evils of which our tax-paying people have just cause for complaint is to abolish all of the offices and positions which have been proved to be of no practical use and benefit to the people and other offices which have passed their days of usefulness—if there ever were such days—and to reduce and confine all expenditures for the maintenance of offices and institutions which must be retained and supported within limitations of a judicious economy, for our flush times, it would seem, have passed away.

Those who desire to examine for themselves the extent of governmental expenditures may obtain much information on the subject by a careful study of the General Appropriation Act, contained in chapter 242 of the laws passed by the Legislature of 1893, at pages from 524 to 535 of the laws of its last session.

The foregoing matters are presented for the consideration of the taxpayers of the State, and as specimens of reckless and profligate appropriations and expenditures of money beyond what, by a just and economical administration of public affairs, is required. It should be remembered that for these evils and a vast number of like character, the remedy is in the hands of the Legislature and Governor and other public officers, most of whom are to be elected at the next general election. The honest men of the Legislature should see to it that proper and effective remedies are applied. In their efforts in the direction of retrenchment and reform they may expect to be opposed by that class of legislators who will be at the capitol not for "their health," but there "on business," and who will ask, when a measure is proposed, "Is there anything in it for me?" These slang and apparently equivocal terms have been in times past a part of the vocabulary of boss-selected and boss-elected members of the Legislature, showing themselves as in the market for sale to the highest bidder. All such should be scorned and condemned by all honest men.

JOHN CURREY.

THE U. S. Pomologist has issued a circular, based upon frost injuries to fruits during March and April, which shows how seriously some States have suffered. The following are given as percentages of live buds after the freezing:

Delaware	12 to 20 per cent
Maryland	4 to 25 "
Michigan	37 to 56 "
New Jersey	76 "
Georgia	1 "
Alabama	2 "
California	100 "

It seems hardly possible that such great destruction could be. Georgia and Alabama saved only one and two per cent of the bloom buds.

CALIFORNIANS who are bothered by cutworms are advised to try a method which has been found successful by growers in parts of Burlington county, New Jersey. Bran is mixed with Paris green in sufficient quantity to give it a slight greenish tinge throughout. When thoroughly mingled dry, water is added and the mass mixed until it is wet throughout without being mushy. A small mass of

this is placed about the base of all the newly-set plants, and experience has shown that the cut worms will eat this in preference to attacking the plants. We should like to hear the results of trials of this material. Of course it cannot be used where poultry or domestic animals have access to the land.

Crops and Markets.

We quote the following from Bulletin No. 7 of the State Fruit Exchange, dated June 6th.

Crop Prospects.

The rains of the past two weeks have been a great, but not by any means an unmixed blessing to the State. So far as they may affect fruit, the result, of course, has been to ruin all ripe cherries, and soften and seriously injure those approaching ripeness. In the very latest districts, where Royal Ann is the leading variety, and which have not yet begun to swell, the effect may be beneficial. As to other fruits, we cannot know the result until we see the weather to follow. No damage has been reported to the apricot crop, and probably none has been received except in the very early districts where ripening fruit must have had some injury. Some mildew has been reported on peach trees, and grapes in some localities are doubtless in considerable danger. The result of the unsettled weather may delay us a week in making up our final estimate for the season of the condition of all our fruit crops. The present outlook, however, seems about as follows:

Apples.—Generally a good crop, although reported poor in a few localities.

Apricots.—The injury by frost in a few localities, some of them quite important, will not prevent the harvesting of a large crop.

Cherries.—Have been a medium crop, and much of that seriously injured by rains.

Grapes.—Are usually growing and blossoming well, but no estimate either of raisin or other grapes can yet be made.

Peaches promise much the largest crop we have ever yet harvested.

Bartlett Pears are generally reported as "dropping," and such orchards as we have seen are certainly doing so in a very unusual manner, but we have not personally seen any orchards where the drop has been more than a proper thinning. We may be mistaken, but we shall be surprised if there is not generally an abundant crop of excellent fruit.

Late Pears seem to be very uneven, as they are apt to be.

Prunes and Plums.—As to these it seems to be evident that in the interior great prune-producing sections the crop will be very light in spite of the vigorous growth and large size which the rains are giving the fruit. On the coast and in the upper foothills of the Coast Range the crop will apparently be excellent, but the amount produced, though important to their owners, can do very little towards making up the deficiency from the interior.

Nectarines are generally reported a good crop.

Almonds promise the largest crop we have ever had.

Olives are blooming full.

Fruit Prospects in the Northwest: An important fruit district is rapidly growing up in Oregon, Washington, western Idaho and British Columbia, the aggregate output of which for the present year has been estimated, we hardly know upon how good authority, at 1000 carloads of fresh and dried fruits. In the fresh-fruit trade these products do not compete with ours of the same variety, our latest districts being generally marketed before the northern fruit comes on. In prunes and dried plums, however, in spite of their expense of drying with artificial heat, they are prepared to compete with us on very favorable terms, as the cost of most of their orchard land has not exceeded \$50 per acre for cleared land of excellent quality. The most common prune there at present is the Fellenburg, which they call the Italian prune, and we the German. This prune, on the average, has seemed to do better there than with us, probably owing to the greater moisture preventing the dropping which troubles us here. Their dried product averages much better than our dried German prunes, as the whole product of the orchard is there dried, while with us the "German prunes" which get into the market are mostly culls, the Fellenburg being one of our most profitable shipping fruits when it bears.

Eastern Fruit Prospects.—The reports of serious injury by untimely weather in the Northern States continue, with more or less contradiction. Beyond what we have before said, that the Southern crops of all fruits are generally very light, with rapidly improving outlook from southern Pennsylvania north, subject to the damage by the latest "freezes," as to which, after due diligence, we are yet unable to form satisfactory conclusions, we can as yet say nothing.

Market Report.

FRESH FRUITS.

Throughout central and northern California, the rains, the disturbed condition of the East, and the uncertainty as to tariff have combined to stop transactions of all kinds. Buyers are entirely unwilling to meet growers' views either for drying, canning or shipping. We have almost no sales or offers reported from any county. Disturbed financial conditions are certain to prevent buyers from competing with each other at high prices, as the risk involved is too great, and it is almost certain that growers who do not provide themselves, either alone or by organization, with the means of drying will, as their fruit ripens, be compelled to accept buyers' views. Those who can take care of themselves will be in a condition to get whatever the market will afford when the proper time of selling arrives. The earlier districts are doing fairly well with all fruit reaching the East in good condition. The shipment of apples will begin next week from Placer county, where sales are being made at 75 cents a box.

Cherries from the earliest districts are gone and have, on the whole, realized fair prices, except for the earliest and poorest varieties which, except for the very first shipments, have not been profitable. The average of the sales of Black Tartarian and Royal Ann which have come under our eye has been about \$1.15 to \$1.30, in Chicago, which is rather a falling off from last week. The New York sales which we have seen have averaged \$1.30 to \$1.65. The rains are likely to stop all further sales of cherries to packers, who will be unwilling to take the risk of carrying.

Apricots are quoted in Placer county at \$1.25 per 25 pound crate. Some sales are reported from the south at \$15 per ton for the run of the orchard. At Hanford \$20 per ton is reported offered.

Peaches.—We hear of few sales or offers; from one county we hear of \$15 per ton for 2 inch and \$20 for 2½ inch. In Placer county some sales are reported at \$1.50 per 20-pound crate for early shipment.

Prunes.—No sales of green prunes reported to us this week. At Hanford \$20 per ton is reported as offered.

DRIED FRUITS.

The market for prunes and raisins, which are the only goods remaining out of jobbers' hands of the crop of 1893, is for the moment utterly flat, both here and at the East, and seems likely to remain so until opening prices have been made for the crop of 1894, when the remains of the old crop can be cleaned

up. We have Eastern quotations from several cities averaging \$2.30 to \$2.55 for three crown raisins and \$5.25 to \$5.55 for prunes four sizes, both in sacks f. o. b. coast, but in all cases with the statement that there are next to no goods moving.

In new crop we can yet hear of no transactions, but offerings have been made of choice Southern apricots at 9 cents f. o. b. coast, without takers. This is the equivalent of from \$22.50 to \$25 per green ton, and will doubtless yield a fair profit to those who have bought orchards at the usual rates in the southern counties. We can yet find no competent authorities willing to commit themselves over their signature to a judgment of the probable opening prices for dried fruits of the crop of 1894. In default of definite opinions, it will be wise to give some thought to the general conditions in view of which the opening prices must be made up.

In any forecast of the probable prices of dried fruits for the coming season, due consideration must be given to the condition of the country. Dried fruits have been considered the "poor man's fruit." Unfortunately, it seems only too probable that many who have been accustomed to fruit in this poor man's form may find themselves this year unable to eat fruit at all. We hope not, but many think so. Certainly such fruit as some are likely to eat will be cheap fruit, and the cheapest may perhaps be the dried apples. These will be supplemented by our smaller-sized prunes and raisins and the poorer qualities of our peaches and apricots. While we all hope for the best, nothing in the present outlook warrants any belief that the average laboring man will this year pay high prices for any fruit. If the average farmer will estimate how much high-priced fruit would this year be consumed in his own family, he can judge how much is likely to be used by hard-working families East, where the financial pressure is much heavier than here. American skilled workmen in reasonably prosperous times have always been good, wholesome livers, and are among our best customers for dried fruits. But if there is little work, or the pay small, they will use less of what they do not consider strictly necessary.

There is little doubt that for customers for dried fruits, ex-

peaches a demand can be created among a class which does not now consume them, but which can afford to pay prices which will justify the additional care and expense necessary to produce fruit which will satisfy a critical taste. Great Britain will take our best qualities of dried apricots, any year, at prices which will yield good profits to the grower. For some reason dried peaches have not been found salable there. Germany has a high duty on canned goods, and our market there for fruit in that form will always be limited, but on the same fruits dried the duty is low, and it ought to be able to create a large market. It would seem that a prudent capitalist owning all the orchards of California would seek to produce mainly those products which our conditions enable us to produce better and cheaper than others, and dispose of them in countries or districts where similar conditions do not prevail. This would seem to point to a large production of dried peaches and apricots, and their disposal not only in this country, but in northern Europe. Whenever a reliable and steady demand for these fruits can be created in foreign countries, the price which we are able to obtain for our surplus in those countries will determine the prices for the whole. The area suitable to the production of prunes and plums is much more extensive than that in which peaches and apricots can be produced—especially apricots—and we believe that the interests of the fruit industry of California will just now be best served by the same intelligent effort which a single capitalist would exert to improve the quality of our dried product and push its sale among classes and people who are accustomed to use fruit in more expensive but not more palatable forms, and this will be best and most cheaply accomplished by organization under intelligent leadership.

Sacramento County Exhibit at Midwinter Fair.

On Saturday of this week Sacramento interests will rule at the Midwinter Fair, and there will be a great concourse

66°; Sacramento, 64°; Fresno, 72°; Los Angeles and San Diego, 62°.

As compared with the normal temperature, there was a heat deficiency of 1° at San Francisco, 5° at Red Bluff, 3° at Sacramento, 4° at Los Angeles and 1° at San Diego, while Eureka gave an excess of 6° over the normal, Fresno being normal.

The rainfall during the week was for San Francisco .40 of an inch; Eureka, .60; Red Bluff, .80; Sacramento, .64; Fresno, .20; Los Angeles, 10; and San Diego, a trace.

The precipitation shows an excess over normal at all points except San Diego, where a slight deficiency prevailed. This excess of moisture and decrease of temperature and sunshine has been very detrimental to hay that was cut and cherries that were ripe, but has greatly benefited summer crops, pasturage and late-sown grain, which plainly show that the continued damp, cloudy weather of the past three weeks has been more beneficial to the crops of this State than otherwise, and has caused wheat and barley to be cut for grain that would otherwise have been cut for hay.

Sunshine and warmth is now badly needed over all portions of the State or else a vast amount of hay will be a total loss.

Highest temperature, 100° at Huron, Fresno county. Lowest temperatures, 38° at Pleasanton, Alameda county, and 39° at Tehachapi, Kern county.

HEAVY RAIN AT FRESNO.

FRESNO, June 5.—The rainfall to-day was .70 of an inch. Such a storm at this time of the year was never known before in this section. The heaviest rain in June since the



EXHIBIT OF SACRAMENTO COUNTY, NORTHERN AND CENTRAL CALIFORNIA BUILDING, MIDWINTER FAIR.

cept at very moderate prices, we must look to families which have heretofore been accustomed to fruits in more expensive forms, but which they now find themselves unable to purchase. And there are plenty of them. These families, however, have cultivated tastes, and while they will not willingly give up their fruit, they will not eat poor stuff. Small, skinny, half-ripened and half-cured fruit will find no place on their tables.

But we make some dried fruit in California which can be sold at prices highly profitable to us and yet seem a godsend of cheap living to those who have used fruit only fresh or canned. Take the supposed case of apricots at 15 cents a pound boxed. Adding the average of local freights and cartage to the overland rate, this means about 16½ to Eastern jobbers, who would sell at from 17 to 17½; and the retailer, who has to consider shrinkage, would need to get from 22 to 25 cents, according to local competition. This price would probably be prohibitory to the laboring man and yet seem cheap to those with larger incomes, for one pound of dried apricots is at least equal in amount of fruit contained in two 24-pound cans, which seldom retail at less than 50 cents.

Bartlett pears shrink in drying 7 or 8 to 1. A pound of dried Bartlett's is therefore nearly equal to four 2-pound cans, and in this case there is absolutely no comparison as to quality. Dried Bartlett pears are as rich and toothsome a food product as can be made at any cost. Suppose we get 10 cents for them—and they ought to sell for more—and they retail at 17 cents; in that case the consumer gets for 17 cents nearly as much fruit as he pays 75 cents to \$1 for in cans, and his 17-cent purchase is ever so much more palatable.

We are not now speaking of the contemptible little green culls, which dry as black as a dark night—these sometimes bring 2 or 3 cents, but are not worth it—but of large, full-grown, well-ripened fruit, cut in halves, with skins and cores left to impart flavor, and properly dried. They are like confections. There is very little such fruit, not enough to give it standing in the market, and make the demand to create an adequate price, and yet there are some who know how to do it. Even cull fruit, if allowed to ripen well, is worth something when so treated. Mr. Hatch sold his well-ripened culls last year at 7 or 8 cents—we forget which—dried in that way.

We have no doubt, also, that for the very best class of dried

of people from the capital city and county. It is timely, then, to present the view which appears on this page, which shows the wonderfully full and fine display of Sacramento county in the Northern and Central California Building. The central design is based upon the lines of the State Capitol, large enough to constitute an excellent pavilion in which fine products are displayed. These products are of almost infinite variety, for Sacramento county yields to none in the diversity of its resources and productions. Field products, garden crops, fruit and fruit products of all kinds, flowers and ornamental plants shown from Sacramento county constitute such a wealth of material that the effigy of the State Capitol is but the gem in a setting which extends in all directions.

Sacramento county has a peerless record for industrial displays. Several times it has beat the State at the State Fairs, and it captured \$2300 in premiums at one fair in San Francisco in 1893. Of course such success is firmly based on the productive ability of the county, but much credit should be given to the enterprise and zeal of the citizens, without which the adaptations of the county would not be so well focussed for the public eye. In this work Mr. Erskine Greer stands pre-eminent, and in his charge, with Clarence Foote as assistant, the great display shown in the engraving was collected and has been maintained.

Crop Condition and Outlook.

Reports of the Recent Rains.

Following is a synopsis of the crop bulletin for the past week issued by Director Barwick, of the State Weather Service:

The average temperature for the week ending June 4th was: For San Francisco, 58°; Eureka, 56°; Red Bluff,

United States Signal Service was established here, prior to this storm, was .06 of an inch.

A telephone message from Pine Ridge to-day said that a heavy snowstorm was falling there.

The damage to hay in the valley is considerable. There is also some damage to grapes, but nothing great.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, June 6, 1894, are from official sources, and are furnished by the U. S. Weather Bureau expressly for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total rainfall for the week.	Total seasonal rainfall to date.	Total seasonal rainfall last year to same date.	Average seasonal rainfall to date.	Maximum temperature for the week.	Minimum temperature for the week.
Yuma.....	.01	2.17	1.65	3.16	94	61
San Diego.....	T	4.98	9.46	9.81	70	54
Los Angeles.....	.08	6.71	26.25	18.21	72	50
Fresno.....	1.00	6.28	11.10	9.91	90	51
Sacramento.....	.64	16.38	23.95	18.71	70	50
San Francisco.....	.40	18.30	21.72	24.43	68	52
Red Bluff.....	.79	21.77	32.32	23.43	86	50
Eureka.....	.46	53.78	48.76	46.72	64	44

HORTICULTURE.

Olive Oil Machinery.

We continue below the account of olive-oil work at the University of California Experiment Station, as described by Mr. A. P. Hayne in Bulletin 104. The following will be found suggestive to those who contemplate either large or small-scale work:

In 1892 the University imported from Saragossa, Spain, two newly invented machines, said to be of great importance to the olive-oil makers of California. One was a so-called "pitter," the other a "crusher" or "grinder." These, while certainly very ingenious, and accomplishing the object in view under certain circumstances, were found to be wholly unsuited to oil making in California, or anywhere else where economy is an object.

It is generally conceded that the best oil is made from the first pressing of the pulp of the olive, *the pits being unbroken*. Practically the oil of the second pressing does not differ materially in quality from the first, *always provided that no hot water is used*; it is therefore usually mixed with the first pressing. This is especially important in California, where we must make only oil of the very finest quality if we would hope to compete with the cotton-seed oil of the South and the cheap oils of Europe; it being generally conceded that the foreign countries can make inferior oil far cheaper than we can.

In testing these machines, then, these fundamental points must be kept in view; for it is not only by the ease and rapidity of their work that they must be judged, but also by the relative quantity of oil yielded from the first and second pressings.

The Pitter and Crusher.—The so-called "pitter" does not remove the pits from the pulp, but merely tears the flesh, without breaking the pit. This is rather a good point, for it gives stiffness to the otherwise slippery mass. The machine itself consists of an endless screw in a metallic sleeve. The olive in passing down this screw is forced under a small wheel, which partially crushes it. Should the olive be of a variety having a large pit, the latter will be broken. If, however, the olive is small, it will pass underneath the crusher, and thus give little or no oil in the press. Under the most favorable circumstances, the yield of oil from this is far below that of the other machines. Hence the Spanish "pitter" cannot be pronounced a success in this respect.

The second machine, the "crusher," consists of two iron cylinders ribbed and turning toward each other. It resembles a large sausage-grinder, and is only useful in grinding up the dry residue from the first pressing, preparatory to the second pressing. While it certainly does reduce the residue to a finely divided state, it demands so much motive power that a good power engine is required. Even with sufficient power it allows so little material to pass through at a time that it falls far short of the efficacy of the old "arrastra," or rolling millstones. Then, too, it is hard to clean, requiring the work of a good man for ten hours to get it in good condition. Besides all this, it is of untempered iron, which imparts to the oil an "inky" taste. The machine, therefore, proved practically a failure in our experiments.

Failing, then, to do good work with the Spanish machines, and having no time to build a regular "arrastra," a small fruit-juice press was obtained. This consists of an endless, tapering screw, inclosed in a conical sleeve. The olives, entering the grooves of the screw at the larger end, are gradually but gently mashed and twisted till the flesh is thoroughly crushed, without the pits being broken, by the time the olives escape at the smaller end of the machine. Though the apparatus used was but a foot long, it was found to do better work than either of the other two. It gave more oil from the first pressing, and while accomplishing the same result in quicker time, was easier to work. No doubt the same principle, on a larger scale, would give excellent results, and be cheaper and cleaner than either of the others.

Oil Presses.—When the olives have been crushed they form a mass of pulp, pits, skins, oil and water. In order to press the oil and water from this, it is necessary to put all into some form of envelope, porous enough to allow the liquid part to escape without pulp, pits or skins. In Europe strong circular grass mats are used. These are filled with about 25 pounds of pulp, and placed one upon another under the flat "follower" that is attached to the lower end of the screw. When it is practicable to use these mats, any kind of oil press will serve. In California these mats cost from \$1.50 to \$2 apiece, hence are too expensive. Cloth has to be substituted for them, but the use of cloth, though more economical, necessitates presses specially adapted to this modification; for when the pulp has been divided into 25-pound packages, and wrapt in cloth, it is impossible to maintain the column in a vertical position unless some kind of lateral support is used. This is done by the use of a cylindrical metallic, perforated sleeve that fits closely the column of pulp. But the sleeve cannot be used unless the flat steel "follower" at the lower end of the screw is of the same shape as the sleeve. Investigation has shown that many of the presses on the market are adapted only for the use of mats; that is, the flat piece of steel on the end of the screw occupies the entire space between the iron columns that support the screw, and there is no room for the sleeve. The press in use at the University is adapted for the use of either mats or cloth, having the "follower" at the end of the screw circular, and smaller than the sleeve. This was found to be a great convenience, and economy in space, labor and material.

Cloth.—Finding the grass mats of Europe too expensive for use in California, various experiments were made in order to test the kind of cloth best suited to the conditions. In southern California and elsewhere "Turkish crash" has been found to be well adapted as a substitute for mats.

It was impossible to get this in time, so various grades of coarse "duck," linen "huck" and sail-cloth were tried. The linen "huck" was an unqualified failure; the "duck" was better, but not practical, while the sail-cloth worked admirably. The cost of sail-cloth sufficient to envelop 25 pounds of pulp is about 50 cents. The cost of a mat that holds the same quantity is from \$1.50 to \$2.

The "Separator."—One of the troublesome processes in the making of olive oil is the separation of the oil from the watery juice after it comes from the oil press. The universal custom is to collect this mixture of water and oil as it drops from the press, and leave it several hours; then to skim off the oil that has risen to the top by reason of its lightness. This skimming must be repeated every few hours, till the oil is entirely separated; for, if not at once removed it acquires a bad taste, from the fermented juices, which are heavily charged with broken tissues, etc. Besides the necessary handwork, it requires a large room and a very expensive outfit of large tanks. In order to avoid all this expense and trouble, an apparatus was made that performs the work automatically and continuously, enabling the oil-maker to have pure, clean oil within two minutes from the time it leaves the press.

Its construction and working was seen by the writer in the oil-room of Prof. E. Mingioli, of the Royal Agricultural School at Portici, near Naples, Italy. The apparatus consists essentially of a tin tank, about four feet high by two in diameter. This tank is kept constantly full of fresh water by means of a pipe connected with some adequate supply, the level being regulated by means of stop-cock outlets.

The juices from the pressing, charged with oil in a finely emulsified state, are made to flow into the tank near the bottom, through a small "drum," perforated laterally. Immediately below this oil escape is a larger flat "drum," perforated on the top, from which a stream of fresh water escapes in vertical jets. These two currents of oil and fresh water at once mix, and the oil passes upwards, by reason of its lightness. Being in very small drops, it is washed of its heavier impurities (tissue, coloring matter, etc.), and reaches the top of the column of water in an almost perfectly clean state, having left all grosser impurities to be carried off through an escape pipe at the bottom. When sufficient oil has been collected at the top, a stop-cock is opened and the oil runs off ready to be clarified. The level once established, the apparatus will work uninterruptedly for a long time without being cleaned out. Though the small quantities of olives at the disposal of the Station did not permit of any long continued test of the process, yet it was found that the larger the quantities used the better the separator worked. No doubt it is susceptible of many small improvements, such as automatic regulators, etc.; still, on the whole, it was found to work very well indeed, and to be a vast improvement on the method of hand skimming.

A model of this "separator," together with oil made at the Station, and olives, olive pits, etc., can now be seen in the agricultural alcove of the University exhibit at the Midwinter Fair.

CLARIFICATION OF THE OIL.

The American market requires that the oil should be put in glass, and be perfectly clear and brilliant. This necessitates careful filtration. Strictly speaking, olive oil should not be filtered at all, for by the process of filtration it loses a great deal of its characteristic taste and odor. Highly clarified oil is prettier to look at, but is not as agreeable to the taste as that which has been allowed to deposit naturally its solid matter. The oftener an oil is filtered, the more neutral in taste it becomes. In Europe oil is seldom clarified so highly as in America. There, simple cotton-batting is used for oil intended for domestic purposes, but in California, where only the most brilliant oil is in demand, something less porous than cotton-batting is required.

In the oil-room of the Station, experiments were made with cotton-batting, "glass wool," asbestos, and filter paper. All but good filter-paper, such as is used in chemical laboratories, was found to be unfit for purposes of clarification. Even with good filter-paper, some varieties of oil were found to require two filtrations before becoming perfectly clear and brilliant. It was also noted that where oil was at once filtered after separation, there was a tendency to become cloudy after a month or so in the bottle. Hence, in the clarification of oil, care should be taken to use only paper of such good quality as will necessitate but one filtration.

It was found that it was impossible to filter olive oil in a room where the temperature was below 45°. Of course no heat should be used, but the temperature should be at least 50° F.

The absolute avoidance of all odors in the oil-room cannot be too strongly insisted upon.

THE GARDEN.

Gardening in the San Joaquin Valley.

F. M. Reynolds of Delano is preparing for the Kern County *Californian* a series of articles giving his experience with gardening in that county. The suggestions will be widely applicable to interior valley situations, and we desire to give them wide circulation. We quote the first article as follows:

It has been customary for most people before leaving their former homes to come to this State, to depend upon their own gardens for fruits and vegetables, and they are much surprised to hear the false though oft-repeated statement that these articles can be bought from the Chinaman cheaper than they can be grown, and further, we are told that we can't grow them anyway. The majority of people, after a few unsuccessful attempts which are largely attributable to the erroneous ideas of planting and irrigating, fall into the very expensive and oftentimes ruinous practice of

patronizing "John" and the "tin cans" in buying everything they consume, as much so as though they had taken up with the avocation and abode of the Pennsylvania coal miners, when, in fact, they are in the Garden of Eden—well, the next thing to it anyway—California. It is so very natural for people generally to accept and adopt what "they say" for gospel truth, without making a single effort for themselves to ascertain if these things are so.

All conditions are radically different here (for which we are very thankful) from those of other States. Among other things the entire year is a seed time and harvest. When shall we plant, and how? Is it too early, or too late? Without persistent experimenting and carefully noting the results on all the articles you wish to grow, you are quite apt to conclude that "they say" was about correct after all. For instance, the seeds of some vegetables may be successfully sown throughout the entire year, while with others, only two crops may be raised. An inquiring mind and a little tenacity have assisted us in demonstrating that these things are not so; no, not by a good many dollars.

Our soil and climate are perfect, and by a frequent application of a small amount of water we get greater results than can ever be accomplished by depending upon the rainfall under the most favorable conditions. It is generally believed that without a great amount of water nothing can be accomplished. This is a great mistake. A windmill and tank or small brick or earth reservoir will furnish sufficient water, if rightly applied, to supply a family with choice vegetables all the year, and fruits in their season. I have artesian water, but I find I obtain the best results from the small and continual stream furnished by the windmill (no tank or reservoir).

If you wish to enjoy the blessing and pleasure of a good garden, give the chickens and turkeys all the rest of the farm except eight or ten rods square, fence this with wire netting three or four feet high, and place the lower edge of the netting in a trench six to eight inches below the surface of the ground. Pack dirt against it. This will prevent rabbits and squirrels from digging through. You are now in readiness to commence operations, in which I will in a series of short practical articles give the results of five years' experience in this valley, stating what to plant, when to plant, how to protect from insects, and how to irrigate. In preparing the ground make it as near level as possible, and cover the soil with about two inches of manure (avoid coarse straw or stalks), and plow this under six to eight inches deep. Then harrow and cultivate until the soil is smooth and fine. Use a wire or line to lay out the ground; spread fine manure (well rotted is preferable) two feet wide and one inch thick, on a line directly from your windmill or tank across the plat of ground. Take a plow and turn two furrows together directly over the manure, making a high ridge. Smooth and firm the soil with a rake or hoe, and directly on top and lengthwise of the ridge form a ditch or trough about five inches wide and three inches deep, on a grade so the water will run from one end of the ridge to the other, connecting the ends so that the water will run the entire length of all the ridges without any attention; or you can make the ridges around the plat, which will enable you to distribute the water from the ridge to any point desired by means of a small piece of pipe inserted in the edge of the trough, always maintaining a uniformity of moisture which is absolutely necessary for the growth of certain vegetables, such as watermelons, muskmelons, cucumbers, yellow crook-neck, Sibley and Hubbard squashes (the two last for fall and winter use), tomatoes (the Mikado is best), string or snap beans and sweet corn. Don't think it is too late. From now till the middle of June is a good time to plant the above-named vegetables. Run the water through the ditch on the ridge until it is settled and well moistened, then plant the seed at the base and on either side of the ridge. Be very careful not to cover the seed too deeply. Cover melons, cucumbers, squash and beans not more than three-fourths of an inch deep. Preparing seed beds for other varieties will be treated in the next article, and further details will be given concerning the culture of the varieties herein mentioned.

THE VINEYARD.

What Is the Matter With the Wine Industry?

B. H. Upham, a wine-producer of Alhambra valley, Contra Costa county, writes to the *Evening Bulletin* the following incisive review of the situation in wine:

The wine crop of 1893 is nearly all in the hands of the producers and a few of the large buyers are using a great deal of printers' ink preparing the producer for a price of five or six cents per gallon. Their chief argument is over-production. The following statistics will show the value of that claim:

There were shipped out of the State in 1893 12,500,000 gallons of wine, 500,000 of which were exported to foreign countries, leaving only 12,000,000 of gallons for all the 60,000,000 people—say one gallon for every family east of the Rocky mountains. It is generally conceded by the best authorities that 8,000,000 gallons of wine are consumed in the Pacific Coast States and Territories. I have already accounted for over 20,000,000 gallons, shipped and consumed.

The bears of the market will claim that the bulk of the Eastern shipments are still in their branch houses at New York. In answer I will say that there was shipped to New York in 1893, according to statistics, 3,134,969 gallons. How much of this has been already consumed I have no means of knowing, but according to a fixed law of nature about 75,000 gallons have evaporated. Now, take into consideration 793,587 gallons of brandy shipped out of the State during the year 1893, and as each gallon of proof brandy represents five gallons of wine, or its equal in brandy, together with home consumption, are over 24,000,000 gallons.

The years 1892 and 1891 only fall a little more than a

million short of the above. I have yet to hear any one claim that California produced over 25,000,000 gallons last season, which was by far the largest vintage California ever produced.

Now, according to the above showing, which I can prove by published statistics in the *Pacific Wine and Spirit Review* of January 20, 1894, pages 10 and 12, I claim there is no overproduction of wine in this State, unless it be in the "brick vineyards" of San Francisco. There is not less than \$50,000,000 invested in this State in the wine industry, a large percentage of which belongs to the growers and producers. Now the interest on this at five per cent per annum is \$2,500,000. The dealers who control the industry do not own five per cent of the capital invested. They propose to buy 1893 wines at five or six cents per gallon, or two and one-half per cent of the whole \$50,000,000 invested, leaving nothing for cost of producing. Think of it—\$50,000,000 invested! Twenty-five million gallons of wine at five cents per gallon is \$1,250,000 and nothing left for labor and expenses.

Fellow-growers, producers and honest dealers, is it not time to wake up?

Three or four firms of San Francisco are responsible for this state of affairs. How have they been able to do it? I answer, in this manner: During the boom, a few years ago, Merchant A, Attorney B, Doctor C and Capitalist D invested in vineyards and wine-making, in which they had no practical knowledge or experience, producing wine far beyond the demand. Their investments were merely side-shows with them, and when they found they did not pay they commenced to sell out at any price they could get. Their acts have ruined many of the hard-working growers, who would have been only too glad to sell their product to the dealers at a fair price. The middlemen naturally took advantage of the situation. The weaker growers have been forced out of existence, while the stronger have as a matter of self-protection been forced to become distributors of their own wine, and as they do not use salicylic acid or aniline dyes, which analysis shows some of the dealers are doing, they are building up a trade that the dealers cannot take from them with their cut prices. The small growers and wine-makers can take care of themselves, but there are a lot of the larger ones who have to go to the wall, and the sooner the better for the industry.

Those dealers who propose that the growers let their crops rot on the vines to help out the situation would show more practical sense by raising a few hundred thousand dollars and tying up five million gallons of wine.

Cream of Tartar Works at San Jose.

Is cream tartar made in California? Certainly, and the largest establishment is at San Jose—the California Tartar Works, Mr. G. De Latour proprietor, located on Bush street, near the narrow-gauge depot. The *Pacific Tree and Vine* gives the following account of it:

The materials all come from the vineyards and are: 1st. Pomace—the crushed grapes after the wine is all pressed out.

2d. Lees—the thick, muddy deposit in the bottom of the great wine casks which remains after the clear wine is drawn.

3d. Argols—crude deposits of a crystalline nature on the sides and bottoms of wine casks when the wine has been standing a long time. Much of this is used in Europe, but so little of this is found in California wine casks that the material counts for but little here.

Up to within a very few years all the cream tartar in these materials was wasted. Mr. De Latour is a native of France, where such things do not occur. He erected this tartar factory three years ago, and the wine-makers now get 50 cents per ton for the pomace they formerly threw away, and 3½ cents per gallon for the lees, which formerly was very largely wasted.

The pomace is mixed up with water, fermented and distilled, thus saving an amount of brandy sufficient to a little more than pay for the work. Then the pomace goes into a great cage of perforated iron, and this is lowered with powerful tackle into a tank of boiling water, boiled for some hours, hoisted out and drained, and the water in the tank, which has dissolved out all the tartar, is pumped to an elevated tank, whence it is distributed into crystallizing tanks of from 3000 to 5000 gallons each. Crystals soon form on the bottom and sides, and in ten days or so all the tartar is there deposited. This is known to the trade as argols.

The lees are placed in strong sacks, and then under a powerful press to force out the liquid part, which is distilled and rectified, making a fine brandy. The solid matter in the sacks is taken out and dried, partly in the sun and partly in a strongly heated room, broken into such fineness as to be easily sacked, in which form it finds a market.

To do this work, Mr. De Latour has invested over \$30,000. The works are running night and day eight months of the year, and days only the rest of the time. Eighteen men are at work in the factory, and for several months fifteen teamsters are employed hauling pomace and material. Besides burning dried pomace, over 60 tons of coal are used every month, consuming over 3000 tons of pomace and over 50,000 gallons of lees.

Up to last fall the California Tartar Works refined their goods, but it does not pay, owing to high cost of fuel, etc., so that now the concentrated crude material goes to the East to meet the competition from Europe. Cream tartar should be protected, and then we would have a prosperous industry on our coast. Now it is only by allowing nothing to waste that the business can be run. It is a blessing to the county, the State and the nation, and should be fostered rather than be surrendered to foreign competition.

The annual discovery of gold in a chicken's crop is announced from Sonoma county. This time it is a White Leghorn rooster at Santa Rosa, and he had 19 pieces of gold in his gizzard.

AGRICULTURAL ENGINEER.

Sprinkling Country Roads.

Santa Clara county, so far as we know, holds the palm for well-kept and watered country roads. All counties should emulate the example of Santa Clara. At the road convention held in this city last week, which unfortunately was very ill attended, the following address was made by Supervisor Greeninger of Santa Clara:

The impelling cause for assigning to me this topic is probably found in the fact that I have the honor of being a representative of the only county in the State and perhaps in the Union that has, for any considerable length of time, established and used a general system of watering country roads. It is now 16 years since Santa Clara county made the first experiment in this direction, but the inauguration of the system dates back only about eight years. That it has been successful as regards comfort, convenience and economy is proved by the demands of the taxpayers for a still further extension of the system. The first impression produced by the suggestion of watering public highways is that of convenience and comfort. At the first blush it has the appearance of a luxury too expensive to be indulged in by communities of ordinary resources. Santa Clara county has demonstrated that it is scarcely less economical than comfortable. I do not expect to enlighten the convention as to theories of road sprinkling. You are familiar with them. I understand that it is information as to the practical application of those theories that is desired, and to accomplish that object I can do no better than to detail to you the experience of Santa Clara county in this direction.

Many years ago the road connecting San Jose and the town of Santa Clara, the historic "Alameda," was sprinkled; but the first real effort toward watering outside roads in that county was made on the public highway leading south from the city of San Jose and known as the Monterey road. Three miles distant from the city is located the principal cemetery of the county, and it was for the convenience of the people visiting that place that the road was sprinkled. It is the main traveled thoroughfare leading to the southern county limits. The three miles of sprinkled road to the cemetery gave the property-owners living farther out an opportunity to compare the sprinkled with the unsprinkled highway. The result was an arrangement with the supervisors by which the system was extended two miles farther, the property-owners making up a subscription to pay for the water plant, and the county paying out of the road fund the expense of applying the water. Soon afterward another section was added, and then another, and then came applications from owners of property on other roads for like service, and the system has grown until now there are about

TWO HUNDRED MILES OF COUNTRY ROADS IN SANTA CLARA COUNTY WATERED

At the public expense, and the system is being extended as rapidly as water can be procured for the purpose.

The supervisors have ascertained that the only problem to be solved is that of obtaining water, and in the solution of this problem they have been compelled to employ several methods. In some instances they have sunk wells at convenient intervals, raising the water directly into the wagons by means of a horse-power attachment driven by the teams employed to haul the vehicles. In other cases they have purchased water from the company whose mains extend from the southwestern foothills to San Jose. The mains are tapped and stand-pipes erected from which the wagons are filled. The price paid to the company for water is 12½ cents per 1000 gallons. In other instances the water is raised from wells by pumps operated by engines, into a large tank at a central station, and thence distributed by pipes to smaller tanks at convenient intervals, and from which the wagons are filled. In still other instances creeks on the high grounds are tapped, the water conveyed by pipes to supply tanks along the road at lower levels. In some cases water is taken from artesian wells, either directly into the wagons, or raised by hydraulic rams into tanks. Hydraulic rams are also employed to lift the water from creeks where opportunity offers. As to the

COST UNDER THE SEVERAL METHODS,

I present the actual figures as they appear on the records. In other counties the expense might be less or greater, according to the natural facilities presented:

First—As to a watering station where the water is lifted by horse power directly into the wagon.

Sinking 10-inch well 60 feet, at \$1.75 per foot.....	\$105 00
Horse power.....	175 00
Centrifugal pump.....	75 00
Setting up pump, etc.....	50 00
Total.....	\$405 00

The wagons used hold 800 gallons and deliver the water over a surface of 20 feet wide, or they can be regulated to any less width. The wagons cost \$250 each, and are furnished by the county. The county also pays the driver, who furnishes his own team, \$70 per month. One wagon and team will go over five miles of road practically twice a day. The stations under this method are one mile apart. The team that hauls the wagon is also used to operate the horse-power. It requires about ten minutes to fill the wagon and fifteen minutes to distribute a load and return to station.

Second—Where the water is raised into a central tank and thence led by pipes into smaller distributing tanks. In this case the pump is operated by a gasoline engine of from four to eight-horse power, according to the distance through which the water is to be lifted.

Sinking twin 11-inch wells and pit for pump.....	\$ 250 00
Centrifugal pump.....	75 00
Setting up pump.....	50 00
Engine complete, about.....	700 00
Thirty thousand-gallon tank and frame.....	385 00
Total.....	\$1,458 00

A station of this capacity, properly located, will furnish water for ten miles of road, sprinkling the same practically twice per day. To accomplish this there should be 14 distributing tanks of a capacity of 5000 gallons each, with pipe connections, the expense of which will be:

For pipe and laying same.....	\$6,000 00
Fourteen 5000-gallon tanks, at \$110.....	1,540 00

Making a total for the system of \$8998, or about \$900 per mile. There must be added to this the cost of gasoline for the engine and \$2 per day for an engineer. Under this system the loading stations are closer together, the wagons can be loaded more rapidly than by horse power and more water can be distributed on the roads per day. This must be set against the greater cost of the central system. The expenses for wagon and driver are the same as by the other methods.

Third—Where the water can be taken from creeks or other sources of natural supply, at sufficient altitude to permit of its being carried by gravitation to tanks at proper intervals along the road to be sprinkled. Where this can be done the expense of the central station, including well, engine, central tank, etc., is avoided. The expense for distributing tanks, pipes and connections will be about the same.

It will be seen that the principal cost of any system of watering roads is the expense of procuring water. In Santa Clara county this expense has amounted to about \$130,000; but, as it has been distributed through a period of about eight years, the tax has not been onerous. It is generally conceded that good roads are as profitable to the cities and towns in which they center and other portions of the county, as to the particular communities through which they pass. Recognizing this principle, the Legislature of 1891, while reorganizing the general Road Law, placed therein a provision authorizing Boards of Supervisors to pay for water supply, machinery and plants for sprinkling roads, out of the General Fund. This has enabled the county of Santa Clara to advance her system to its present state of efficiency, without any material increase in the rate of taxation for road purposes. It will enable most of the other counties to do as much.

The foregoing is a brief statement of the expense of sprinkling roads in the county which I have the honor to represent. It is proper that a

STATEMENT OF THE BENEFITS

That accrue should also be presented. These benefits cannot always be estimated in dollars and cents; but they are of such a character as will be appreciated by every intelligent mind. Every person who has had experience in the country districts of California knows the horrors of traveling the ordinary country roads during the long, dry summer season—the roadway cut up into innumerable ruts and chuck-holes and covered to a depth of four to ten inches with dust ground into an impalpable powder, which rises in clouds at every motion of horse or vehicle, filling the mouth, nose, eyes and ears, and penetrating even to the lungs, covering the perspiring horses with a plaster of mud; obstructing the feet of animals and the wheels of vehicles; permeating and befouling the clothing and covering with nastiness everything not hermetically sealed. We all know the trouble and expense entailed by the efforts to protect our persons, our teams and our loads from this insufferable nuisance. A trip to town, even from a distance of only three or four miles, necessitates elaborate preparation for the encounter with the dust; and, even with the greatest precautions, a general cleansing operation must be performed before we are presentable in public. With our public highways properly sprinkled, this nuisance is entirely abated and travel over our country roads becomes a pleasure. In Santa Clara county a journey to town demands no elaborate and troublesome preparation for the encounter with the dust. The horses travel without inconvenience, the clothing is not soiled, the lungs are not injured, nor are the eyes and ears offended. The load in your wagon arrives at its destination as immaculate as when it commenced the journey, and the feeling of cleanliness that pervades your person gives you a sense of comfort worth more than all the tax you pay to establish and maintain the road-sprinkling system. The flying dust is not the only nuisance abated by the efficient sprinkling of the public highways. The ruts and chuck-holes, so wearing on animals and vehicles, disappear, and the smooth road bed that is substituted saves many a dollar to the taxpayer in the way of wagon repairs and horseflesh. The cost of transportation by wagons depends largely on the character and condition of the roads over which the hauling is done. This proposition is well illustrated in Santa Clara county. Before the roads were generally sprinkled it was estimated that an ordinarily good team would haul a load of from one to two tons. Over the sprinkled roads the load is from two to four tons. Then the cost of hauling, for, say, ten miles, was estimated at \$2 per ton and upward, according to circumstances. Now it is about \$1 per ton. The latter estimate is made from actual prices paid for hauling fruit, \$1 per ton being the amount allowed the seller for hauling when the point of delivery does not exceed ten miles in distance from the orchard. In this connection it is but fair to state that sprinkled roads are probably of more value to a fruit-growing county than to a community devoted to other interests. Fruit demands careful and clean transportation.

On roads not sprinkled, it requires vehicles with an elaborate system of springs and of costly construction, to prevent bruising; while the most careful covering will scarcely exclude the dust. Nor can such large loads be hauled. On the sprinkled roads there is almost no accumulation of dust, while a simple and inexpensive arrangement of springs, on an ordinary farm wagon, insures a delivery in good order. This means an absolute saving to the fruit-grower of more money than he pays toward the expense of sprinkling the roads. Another benefit, and one that is by no means insignificant, comes to the property owner, the taxpayer and the community generally, from sprinkled roads. They attract settlers and capital and increase the value of property

along their routes. People are willing to pay a considerably higher price for land situated on a sprinkled road, and, in many instances, intending purchasers make this a *sine qua non*.

The convention will, I hope, pardon me if I seem to intrude Santa Clara county too prominently into the discussion of a subject which is of interest to the whole State; but, as I understand, the convention wants facts and not theories, I am obliged to draw those facts from the experience of the only county that has had a general system of road sprinkling in practical operation for any considerable length of time. I do not wish to be understood as stating that

SPRINKLING WILL OF ITSELF MAKE GOOD ROADS.

The road bed must first be made smooth and the ruts and chuck-holes leveled up; otherwise the water will stand in the depressions and greatly aggravate the evil. But when once the road bed is made level, and the water properly applied, the cost of maintaining it in that condition is but a trifle in comparison with that on unsprinkled roads. In addition to the fact that the water aids materially to prevent the roadway from breaking up under heavy and continuous use, it places it in such a condition that fractures can be mended as soon as they appear. This is not possible on unsprinkled roads. In the latter case attempts to fill depressions in the dry seasons are worse than useless. But, in a public highway that is packed and moist from a judicious application of water, a few shovelfuls of gravel or broken rock will prove to be the "stitch in time that saves nine."

As to the manner in which the water should be applied: On narrow roadways the 16-foot throw from the wagons will be of sufficient width for all purposes if deposited in the middle of the roadway. On wide roads the water should be first applied to one side and then to the other, giving a lap in the center. This gives a thorough and uniform wetting; the center of the roadway, on which there is usually the most travel, getting the most water.

THE IRRIGATIONIST.

Hints on Earthen Dams.

Readers of the RURAL who think of constructing irrigation reservoirs on a small scale will be interested in the following notes by Samuel Fortier, in the *Irrigation Age*:

1. All materials used in earthen dams pack better when moistened. This is particularly true when the material consists of a series of particles ranging from very fine to coarse. When water is applied a mortar is made of the finer particles, into which the larger grains are imbedded, somewhat as the gravel or broken rock is in cement concrete.
2. No earthen dam will long resist the action of even a small volume of water flowing over its top, so that ample provision must be made to by-pass the flood water.
3. It is usually difficult to obtain a water-right between the original surface and the embankment, and as planks are grooved and tongued to make tighter joints in lumber, so it is good practice to dig a trench beneath the embankment and fill it with puddled borrowed material.
4. Two things are essential in all such structures, viz.: An impervious coating, and sufficient weight to resist the horizontal thrust of the pressure of the water.
5. Means must be provided to draw off the water when required for use. This is effected by a box, tunnel in rock, stone, culvert or pipe, with the area way of whatever is used stopped by a movable gate.
6. Water under pressure, unless acted upon by other forces, tends to flow in straight lines; and, other things being equal, that construction is the best which causes the escaping water to turn the most angles.
7. Earthen banks will not long resist the action of waves.
8. Every precaution should be taken to ensure thoroughness in the building, as a leak once formed can seldom be stopped.

SUGGESTIONS IN BUILDING SMALL RESERVOIRS

The objects for which water is stored and the various conditions which exist in each case differ so widely that it is impossible to lay down precise rules. Speaking generally, however, one of the first things to be done after the site is secured is to make provision to draw off the water. Wooden boxes or cribs of timber, although sometimes used, are not to be recommended from the fact that they soon decay, and are extremely difficult to replace, are a source of weakness to the reservoir and do not admit of easily inserting a gate which can be freely operated. Stone culverts, laid in cement, are costly and substantial as a rule, but require a special gate, which may give trouble. Piping, of which there are several kinds in the market, is perhaps the most suitable, and by its use one can purchase the standard low-pressure water valves, such as are in use in the city water works, that are guaranteed to give satisfaction. The following are some of the kinds of water piping, together with the approximate prices per linear foot, at principal cities in the arid region, for 12 inches interior diameter:

Cast-iron piping, in lengths of 12 feet over all, lead joints.....	\$1.60
Kalamain piping, in lengths of from 15 to 20 feet, lead joints....	1.60
Wyckoff piping, bored wood with spiral flat bands.....	
Wrought-iron or steel-riveted piping, No. 14 B gauge in joints of about three feet in length, riveted on lead joints.....	1.30
Spiral weld steel tubing, cast-iron joints with lead.....	
Spiral iron or steel-riveted piping, iron joints with lead.....	
Redwood stave piping (Allen patent) steel round bands, built continuous in the trench.....	.70

Valves may be ordered in more than a score of different places to fit into any one of the above kinds of piping. In most cases one can order valves with sockets for a long rod, which would be used on the inside of the reservoirs, and of sufficient length to reach above high water where a hand wheel is attached. It is much safer to place all valves or

stop gates near the inner end of the piping. Where water free of sediment is wanted, as for city use, the outlet pipe is placed two or more feet above the bottom, with a drain pipe at the lowest point to flush out the sediment, but for irrigation it may be placed on the bottom. In laying the pipe care must be taken to provide a safe and continuous bearing beneath it, otherwise the load imposed by the earth above will cause portions to settle, and so loosen the joints.

It is necessary, too, to dig one or more cross trenches from the pipe and pack them full of cement concrete, clay, or good earthen puddle, bringing the same up two or more feet above the pipe so as to arrest any leakage along the outlet pipe. The surface upon which embankments are to rest should be plowed and the roots of brush or weeds removed to the outer toe of the slope, after which the ground is again plowed and a trench dug along the center of each proposed embankment. When this much is done water should be applied. The writer considers the abundant use of water of prime importance in all works of this nature. Usually it can be conveyed to the site through a flume or pipe, and made to discharge at a height equal to the top of the embankment when finished.

A Windmill Irrigator.

A bright Nebraska farmer writes as follows: "I have a wind-power plant run by a 14-foot wheel, with an eight-inch pump that throws 4400 barrels per day in a medium wind. I have two reservoirs, one 60x150 and one 80x150 feet. With this plant I have watered from 10 to 15 acres, and it can be managed so as to water still more by using and applying the water to some of the land during the winter season. It is necessary to use reservoirs, so as to have a larger volume of water whenever you irrigate. By this means you have more pressure and can water more land at one time and do it quickly.

HOW HE BUILDS RESERVOIRS.

"To build reservoirs take from the inside of the dimensions that you wish to put into the reservoir the earth to make your banks with, by plowing and scraping it up from your bank, and by so doing you spoil no land on the outside. Two men and a team can make a reservoir 100x100 feet in eight or ten days, or less time. The Gause pump that I am using can be used in an open well or with drive points.

"To make your reservoir hold when you begin to pump water into it, commence tramping horses as fast as the water covers the bottom of the pond, until you get it into a loblolly of mud two or three inches deep, and this will then settle into the pores of the ground and stop very nearly all the seepage. Do not put manure or straw into the bottom of the pond if you ever expect to stock it with fish, as they will surely die.

"A plant like mine, or similar, with reservoirs, pumps, etc., complete, ought not to cost over \$250, counting pay for the farmer's labor that he does himself on the plant. I am lifting the water 17 feet. This pump will raise the water 25 feet from the valve successfully.

"In irrigating a great many kinds of fruit trees, berries, and, in fact, all small fruits, use furrows or small ditches instead of flooding the land, and by so doing save at least one-third of the water that it would otherwise take to flood the land. I have eight acres in fruit, and in the last three years I have always had enough water to flood this orchard. Where there is a sufficient supply of water underneath and you do not have to go too deep for it, say 20 to 30 feet, I would advise the use of points instead of digging open wells. Where a man is gardening, or wishes to grow an orchard of ten acres, one of these plants will pay for itself in one dry season, and the farmer who has a plant of this kind is always sure of vegetables and berries for his own family use, and I consider this one of the most essential things to the farmer, for, in any country, to make true farming a success, the farmer must grow his own vegetables and fruit for home use."

FRUIT MARKETING.

The Riverside Growers' Association.

So much interest is now manifested in growers' commercial movements that we give leading items of business at the recent meeting at Riverside, in which 150 growers participated. Those present were from among the residents of the valley most interested in orange growing, and the business of the meeting was taken hold of and conducted in a business way, and in a manner that indicated that those who had the matter in charge were conscious of the great responsibility.

The following are the recommendations reported from the committee of five through Geo. Frost, and which were adopted. They embody the lessons of past experience and will be the basis for the coming year's work. It is understood that the general plan in use during the past year is to be adhered to, save, and except, when directly modified by these recommended changes, to wit:

First—That each association shall contract to deliver to the Exchange all fruit packed by it, whether such fruit shall be under contract to the Exchange or otherwise.

Second—That the system of marketing and general outlining of the methods of transaction of business of the Exchange shall be determined by the board of directors of the Exchange and one representative of each association who shall be chosen by them as their representative; and that a majority vote of such directors and association representatives shall be endorsed by the board of directors.

Third—That there shall be an executive committee of three appointed by and from the board of directors of the Fruit Exchange, who shall be paid a reasonable compensation for the actual time devoted to the business of the Exchange, such compensation to be determined by the board

of directors and the representatives from the different associations.

Fourth—That the duties of the executive committee shall be to take charge or supervision of all correspondence; the distribution of orders to the different associations, and the general supervision of the business of the office of the Exchange. In case of any dispute arising from the distribution of orders, appeal may be made from the executive committee to the joint board of directors and association representatives, whose decision shall be final, as provided for in Section 2.

Fifth—That all orders received by the several associations shall be turned over to the Exchange, which shall authorize the filling of the same by the association designated in the order.

Sixth—That all orders received by the Exchange without designation of association shall be distributed to the different associations in such manner as shall keep them on an equality in shipments, so far as it is possible to do, in proportion to quantity of fruit under contract to each association.

Seventh—That any association may refuse to ship fruit to be sold at auction whenever they may so desire, and the Riverside Fruit Exchange shall notify the association, when giving orders, whether such order is f. o. b. or shipped on consignment or to be sold at auction.

Eighth—That no association shall directly or indirectly employ any salesman, and no association shall issue any circular or correspondence of any kind except in the name and under and by the authority of the Exchange. That no association shall offer or allow to any purchaser of its fruit any rebate, drawback and allowance whatever, and for every infraction of this rule, when proved to the satisfaction of the majority of the joint board of directors and association representatives, a penalty of \$100 for each car or fraction of car involved in the transaction shall be forfeited by the association to the Exchange.

Ninth—That adjustment of rejections and diversions shall be made by the Exchange only after notice to the association shipping the fruit shall have been given. But if instructions for its disposal be not given by the association to the Exchange within four hours after such notice, then the Exchange shall make such adjustment or diversion as they may deem best.

Tenth—That each association shall use the Riverside Fruit Exchange brand for its first-class fruit only. In addition thereto, they might use any local brand they may elect, provided that no association shall use a company or individual name other than the name of the association.

Eleventh—That all fruit other than first-class shall be packed under brands selected by each association, provided the words "Riverside, California," together with the association name, shall be upon the brand, and that the word "Riverside" shall be in letters not less in size than one inch in height.

Twelfth—That all expenses or outlay of the Exchange shall be first taken from the returns, including a guarantee fund of two per cent, and thereafter all proceeds of sales shall be distributed as soon as practicable, and not exceeding ten days after the receipt of the same.

Thirteenth—That the estimate of the crop made by the different associations shall be verified by experts employed by the Exchange, and any difference in estimates made by such experts and the association shall be adjusted by a committee of three, one being selected by the Exchange, one by the association objecting to the estimate, and the third shall be chosen by the other two, who shall be from some other association.

Fourteen—That weekly bulletins shall be issued by the Exchange to the growers, giving full information relative to the market movement of fruit, and such other information as may be of advantage to the grower. And also a weekly report of the several associations of all oranges shipped, varieties, character of sale and by whom shipped.

After the adoption of the recommendations, on motion D. W. McLeod, the meeting proceeded to the nomination of eleven directors. The first ballot resulted in the election of the following gentlemen: A. H. Naftzger, M. J. Daniels, J. H. Wright, S. C. Evans, Jr., T. H. B. Chamblin, George Frost, C. H. Low, D. W. McLeod, A. P. Johnson, E. F. Kingman, and G. W. Garcelon.

The first eight were members of the old board. The growers of the valley had the utmost confidence in all the members of the old board, and there would have been no change whatever made in the directory had it not been to as nearly as possible give each association a representation on the board. As it now is there are seven associations represented out of the twelve.

During the balloting Chairman Naftzger read the statement of the association's business for the past season: Amount paid associations to May 25, 1894, \$316,650; estimated amount of cash on hand or under process of collection, \$52,150, making a total of \$368,800. It was estimated that there were yet about 80 carloads of fruit to ship.

An Unnoted Feature of the Coxey Movement.

TO THE EDITOR:—There is one thing at least that has proved a success in the march of the "Industrials." Coxey may not be a great general, but he has certainly stolen a march on the press of this great country.

I don't think there is a paper in the whole land that has not lent its aid gratis to assist the advertising boom of the Coxey stallions. We can hardly suppose that the owner of a \$40,000 stud-horse is really one of the distressed or oppressed classes and needing much relief from Congress; but no doubt a free advertisement of his stallions does fill a long-felt want.

I sympathize with all real distress. I have no desire for legislation by intimidation. Those who encourage this movement are opening the door for every crank in America to gather a band of followers to besiege Congress and overawe our legislators by a show of physical force. It needs no prophet to see that, if this is permitted, our free institutions will speedily end in a military dictatorship.

EDW. BERWICK.

THE HOME CIRCLE.

A Garden of Long, Long Ago.

I can see long back in fancy, in kaleidoscopic view,
'Mid the circling disk of time-rings that my mind is
gazing through—
A fairyland of beauty which my early childhood
knew,
Where the purest, sweetest flowers and the softest
mosses grew.

The paths were stiffly outlined by a bordering of
box,
The flower-beds flashed brightly with marigold and
phlox,
While the grape-vines grew precisely, in a fashion
orthodox,
To evade the crafty cunning of each spoiling two-
legged fox.

I can see the drooping pear-tree stooping low to
touch the ground,
And deposit ripened sweetness where it soonest
could be found,
While the honey-bees grew heavy, as they circled
round and round,
And clapped their wings in soft applause, with hazy,
happy sound.

The currants flashed to crimson 'neath the bright-
ness of the sun,
Until, all red and rosy, they shook their heads for
fun,
And tumbled off demurely in the green grass, one
by one,
To wait until the children adown the pathway run.

And then—the very best of all—the merry little
brook
That dashed along and splashed along with circling
curve and crook,
Yet held its little mirrors where the lilies bent to
look,
And gave us tiny concerts from a natural music-
book.

As I tell myself the story, my heart is all aglow
With reverberating pleasures, that from the mem'ry
grow;
So I write down glimpses of it that others too may
know
The sweetness and completeness of the distant long
ago.

—Alice Cary.

Miss Bethune's Visit.

IT lacked a fortnight or so of the nation's sweetest and most solemn festival.

Over on one of the many wooded elevations of Glenhurst cemetery workmen were busy erecting a stately granite shaft in a spot which for years had been marked by only a plain and inexpensive headstone.

"Sure," one of them remarked, "and the general do be a long time resavin' his deserts. It's thirty years he's been slapin' wid only a bit of chape stun at his head; and after that same neglect, the bist of granite wid gould letthers beant none too good for him. It's reformed entirely thim paynurious Eliots beyant is gittin', and that's the truth."

"It isn't the son's widow who is paying for General Eliot's monument," another of the men explained. "It is the daughter, who lives somewhere in the West. She married a rich man named Bethune, who owns a large property out there; and she has never been home since her marriage."

"Faith, thin, and the Eliots take all the credit of the payin', bad cess to the desavers," rejoined the first speaker.

While they are discussing the family and the affairs of their employer, as workmen have a cheerful fashion of doing, a solitary pedestrian was moving leisurely along the undulating road which wound past the cemetery between the railway station of the village and the Eliot homestead, two miles beyond.

Leisurely, but not lazily. The girl's steps were not buoyant, and every curve and motion of her slim, straight figure was instinct with graceful vigor. Life, to her, was still a precious heritage. She was young enough to exult in the mere sense of being alive, and to rejoice in the simple power of motion, and her blue eyes looked forth blithely and unfearingly upon a world which was still rife with charms and wonders. Here and there she paused, loitered, stopped altogether for a space.

A rude stone wall which fenced one side of the road, and which was half concealed in a tangle of wild ivy, bittersweet and odorous sweet briar, stirred a vain regret for her pencil and sketch book.

The charm of the young, budding year, the spell of the fresh young day, was upon her. In her own bright youth, she was vividly responsive to the influences of the moment.

When she at length reached her destination, which was the Eliot homestead, both gloves had been discarded, and her hands were laden with wayside blossoms; rich, yellow buttercups, golden disks of dandelion

and snowy, honey-scented locust plumes, secured only by climbing to the very top-most rail of a zig-zag fence beneath the tree.

In performing that exploit those small, shapely hands had been stained by the green juices of crushed leaves and scratched by the locust spurs. And her soft, white chin showed a greeny-brownish smirch, more conspicuous than beautifying.

To the former marks she was serenely indifferent; of the latter she was blissfully unconscious.

But as she ascended the half dozen stone steps to the front door of the Eliot residence, she reflected that her nicely fitting boots were distressingly dusty, and that she must look rather untidy altogether after her walk and her frolics by the way.

She was not admitted until she had wrung the gong several times, and had waited an unconscionably long interval.

Then the door was opened noisily and with precipitation by one of the daughters of the house—Miss Minnie Eliot—a low-browed, dark-skinned and square-shouldered young woman, in a shabby wrapper of faded crimson silk, with diamonds in her ears and many rings shining on her large fingers.

"Oh, you are the girl Mrs. Lacy was to send from the city to help us with the sewing and housework until after Decoration Day?" she said volubly, in thin, high tones, with a supercilious scrutiny of the visitor.

The girl's soft cheeks flushed; there was an odd glint of amusement in the large, lovely eyes.

Her lips parted as if for utterance, when those high, thin, affected tones checked her.

"You'd better go up to your room and get yourself ready for work right away. There's a lot to be done; and to-day—Ella, oh, Ella, the new hired girl has come," Miss Millie concluded abruptly, her last words addressed to her sister, who had just appeared at the opposite end of the broad, pretentious hall.

The sisters were very much alike. Ella, the younger, was a little taller than the other; her rust-colored hair and hazel eyes were a little darker; her complexion was a little more florid and coarser; her air was more affected and her tones more artificial.

"What shall we call you?" she inquired haughtily of the visitor, who still remained silent.

"You may call me Anne, please," answered the girl, her face hidden for an instant with a handkerchief of finest, whitest linen.

"Well, Anne, you had better throw those weeds away the first thing you do," said Ella, glancing contemptuously at the flowers. "And then, as quickly as you can, we want you to clean one of our front chambers and put it in proper order for a guest. Have you brought no clothing except the absurdly unsuitable things you are wearing?"

Anne wore a tailor suit of rich cloth, a soft smoke-gray in color; and the exquisitely fitting coat, open carelessly, revealed an elegant bodice of violet moire and costly lace.

There was nothing mannish about it; and from the crown of her jaunty gray-plumed hat to the tips of her dainty boots, every curve and fold and seam bore the unmistakable but indescribable stamp of refined elegance.

But Ella and her sister were not able, either by taste or training, to detect such a distinction, although they noticed the fabric of her coat and gown was expensive, and were inclined to sneer at the fact.

"I am afraid my—my things haven't got here yet," Anne replied, with her eyes on the floor, and with a queer little sound like a smothered cough.

Or was it a stifled ebullition of mirth?

"It's surprising how inconsiderate people of your kind can be," Millie grumbled. "We never had a new servant yet who didn't leave her aprons or dresses or something needful behind her."

"I should say it was craft," Ella said, with a shrug which exaggerated the ugliness of her square, angular shoulders. "Of course, they know well enough we are obliged to give them something."

"We'll send the cook up to you presently, Anne; she will supply you with a dress and instruct you about your work," said the elder sister, as the two swept their frayed and faded silken trails in the direction of the family sitting room.

Left alone, Anne seated herself in one of the painted, leather chairs with which the hall was provided.

For a moment she sat quietly; and then suddenly she covered her face again with her dainty handkerchief, while her lovely figure shook from head to feet with—was it with weeping or with laughter?

In the midst of it the library door opened noiselessly, and a manly-looking young fellow approached her with quick, soundless footsteps.

"I beg pardon," he began, with as much deference as if he were addressing a throned queen, "will you not let me bring you a glass of water? You must be tired after your long walk, and the girls are very thoughtless sometimes."

Anne's proud head crested itself with dignity. She lifted her flushed face, and her large, blue eyes regarded him questionably.

But Richard Clavering was one who need neither wince nor quail before the searching gaze of any mortal creature. His were the lofty spirit, the clean conscience, the noble and generous heart. Proud he was as any monarch, but his pride was in his honor; in his power to right human wrongs; in his achievements wrought by toll and study, by courage and loyalty.

Anne read this in his grand young face. Manly sympathy for her shone from his great dark eyes, answered her mute questioning and extinguished her kindling resentment. She took the glass of water gratefully.

"You are very kind, and I appreciate it," she said with a little thrill in her low, refined voice; "but your kindness to a—a servant may annoy your sisters."

"It is the lowly who most need kindness. But I cannot think of you as a servant," he replied, with a little dubious shake of his dark, curly head, "and the Eliot girls are not relatives of mine. I am their father's ward, and nearly a penniless one, I fear."

"There are worse ills than being penniless," said Anne, looking at him with shy admiration from under her long, lovely lashes.

He was about to respond, when a coarse laugh startled both.

"Oh, I reckoned I'd catch you some time, Rich, if you do pretend to be such a saint! You meant to get the start of me with the pretty housemaid, I observe. But I'll overlook that if you'll let her give me a kiss," the newcomer exclaimed boisterously, as he swaggered up the hall toward them.

It was easy to discover that he was an Eliot. His resemblance to the sisters was as noticeable as their likeness to each other. As he advanced, leering and chuckling, Anne arose to her feet, her delicate face white with indignation.

"Oh, you needn't put on any airs with me, my dear," he sneered, as he extended a hand to seize her.

Rich struck the insolent hand aside and placed himself protectively before Anne.

"You will go at once, Wilkie, unless you want a quarrel with me," he said, with stern significance.

Wilkie began to bluster. But any serious dissension was averted by the sudden appearance of the cook.

"If you don't stop your tricks you won't get your rich cousin for a wife, Mister Wilkie," she admonished him.

"Oh, I can pull the wool over her eyes till I get her," Wilkie boasted, wickedly.

As Anne followed the cook up the broad staircase, she smiled gratefully down at her gallant young defender, who stood with bared head, looking after her with all his beautiful soul shining through his dark eyes.

Half an hour later she began her career as waitress, chambermaid and seamstress in the Eliot household.

It was soon discovered that her taste and skill in the latter capacity were almost invaluable; and henceforth the girls kept her occupied almost wholly in their services.

At first she dreaded lest Wilkie Eliot should repeat his insolence, and she scarcely dared venture outside the sewing-room.

But he did not annoy her again, although she was convinced that he was deterred solely by a wholesome awe of Rich Clavering's vigilant eyes and powerful young arms.

Anne was not unhappy during those days. But sometimes her lovely eyes brimmed with gentle tears as she reflected upon the unending misery of the many young creatures who are doomed to drudgery and the tyranny which is harder yet to bear, from dawn till dark, all their lives, from the cradle to the grave.

"It is such treatment which makes bad servants, I am afraid," she said to herself.

She spent many pleasant moments with

Rich, sometimes at the piano when the others were all away, and sometimes strolling through a dim and dreamy strip of pine grove between the house and the ever-brawling creek a little way beyond the garden.

Meanwhile, the Eliots' long-expected guest and cousin from the far West had not arrived. But early on the morning of Decoration Day a dispatch from her was brought to the house by a messenger.

Miss Bethune was at the Glenview Hotel, and if they would call for her later, she would accompany them to the cemetery.

"You must be careful how you behave before her, Wilkie; you must remember she has lots of money," said Millie.

"You may never have such a chance again, Wilkie, to get a rich wife," said Ella.

"You must let her have your seat in the carriage, Rich; there won't be room for all," said Mrs. Eliot.

"Oh, I don't mind walking," that young man declared. "I'll start early and meet you at the hotel."

"I don't see what he wants to come for. I'd rather he wouldn't, I'm sure. I'm afraid he'll try to set Miss Bethune against Wilkie. He does dislike the poor boy so," Mrs. Eliot grumbled later, as her stylish equipage was speeding toward the Glenhurst House.

On their arrival the party was conducted to a private parlor, elegantly appointed. Rich Clavering was already there.

They had waited but a few minutes when there was a little rustle at the opposite end of the room, and a white hand slowly drew aside the heavy crimson portiere.

Every eye was turned that way and fixed upon the lovely girl, who paused for an instant, looking, against the crimson background, like a picture stepping from its frame.

"Anne!" broke from every lip. And it was Anne, indeed—Anne Bethune, happy enough and generous enough to forgive even her enemies, if she had any.

She rode with them to the cemetery, and witnessed the Decoration Day services at her soldier grandfather's new monument. But she walked away with Rich beside her—her plighted husband.

"So that was why you insisted I should go to the hotel?" he said once. "You sweet little deceiver, I am not half worthy of you. But, ah, Anne, what a dear little housekeeper I shall have."

What the Eliots said is not recorded.—Enrietta Larbig.

Fashion Notes.

Cloth top shoes of navy blue and tan, gray and white are shown in the best shoe stores.

Some of the latest bonnets have immensely wide strings edged with lace, which form a scarf under the chin.

Tropical suiting is a new fabric for traveling and morning gowns. It is light in weight and has a smooth surface.

A stylish hat of black has a wreath of scarlet blossoms about the close brim. A stiff black pompon is erect in front, and two close-curved tips fall either side of the coil of hair.

Linens are gaining in popularity and are offered in considerable variety. Their grounds are neutral, but the stripes or embroidered dots that relieve them are prettily colored.

Cotton grenadines are very dressy, and, like the silk-and-wool varieties, are lined. Thus, a navy blue sample has a yellow lining that shows through the dark meshes with exquisite effect.

Ducks and heavy linens are to be in great vogue this year; also the old-fashioned pique. Tailor styles are liked for these substantial linens, and for the white and ecru duck, so popular last year for outing suits.

Eton jackets have taken on the addition of circular frills about six inches deep, which form a basque. The front turns back in wide revers, and is sometimes buttoned with one or two buttons at the waist.

Coronet hats consist of nothing but a twist

Highest of all in Leavening Power.—Latest U. S. Gov't Report.

Royal Baking Powder
ABSOLUTELY PURE

of silk or velvet or a mere run of jet. They have a bow of the largest size in front, and leave the crown of the head completely bare. They are good things in which to take cold.

A pretty way of making the sleeves of a summer silk is to have them accordion plaited from the shoulder to the elbow and gathered into a tightly fitting lower sleeve of another material, the full accordion plaits slightly overhanging the joining.

Blazer suits are made of hopsacking and serges of different weaves and degrees of roughness, and black in the most fashionable color. Blazer coats are short and have a broad turn-over collar and wide lapels, which may be faced with moire to make them more dressy.

Small round turbans of dark, fancy straw, or else black very simply trimmed, accompany tailor gowns. There is also a fancy for ecru straw hats, either in English walking hat shape or else with Alpine crowns that are indented. These are trimmed with black ribbon and ostrich tips, and are especially becoming to rather large faces.

A new feature in the handsome black silk dresses is that of having the front of the waist open on a full-gathered blouse of ecru batiste wrought in open embroidery and placed over white or colored silk. Such a waist has a basque back with short jacket front, either a bolero or a garcon de cafe, edged with jet and lined with silk to match that under the batiste. A collar band and a pointed belt are of jet galloon two inches wide, covered with spangles or with pendent sequins.

Accordion plaiting will be much worn this season, and it appears in a variety of new designs, the crepon effect being most novel. A beautiful pattern called the ondine has the plaits in two ways; that is, the material is plaited lengthwise, while a sort of crumpled plait crosses it and produces a serpentine effect. The writer saw a very pretty navy blue and white check, with a blouse front made of white chiffon, plaited in this way. The skirt was plain, with a slight pannier or hip piece. The waist was cut zouave effect, the small revers being bound with navy-blue moire, finished at the throat and waist in front with soft moire ribbon bows caught with steel buckles.

Gems.

Call no man happy until his death.—Solon, spoken to Cressus.

Whatever is worth doing at all is worth doing well.—Chesterfield.

Truth can understand error, but error cannot understand truth.—De Maistre.

Doctrine is nothing but the skin of truth set up and stuffed.—Beecher.

A person is always startled when he hears himself seriously called old for the first time.—O. W. Holmes.

Excess of grief for the dead is madness; for it is an injury to the living, and the dead know it not.—Xenophon.

The power of fortune is confessed only by the miserable, for the happy impute all their success to prudence or merit.—Swift.

Philosophy has given us several plausible rules for attaining peace and tranquility of mind, but they fall very short of bringing men to it.—Tillotson.

There is less misery in being cheated than in that kind of wisdom which perceives, or thinks it perceives, that all mankind are cheats.—E. H. Chapin.

Many build as cathedrals were built; the part nearest the ground finished, but that part which soars toward heaven, the turrets and spires, forever incomplete.—Beecher.

Never bear more than one trouble at a time. Some people bear three kinds—all they have ever had, all they have now, and all they expect to have.—Edward Everett Hale.

You can restrain the bold, guide the impetuous and encourage the timid, but for the weary there is no help; you might as well undertake to make a web stand up on end. Uncle Ezek.

Senator Wolcott tells a story of a man who, while traveling in a parlor car between Omaha and Denver, fell asleep, and snored with such intense volume that every one in the coach was seriously annoyed. Presently an old gentleman approached the sleeper, and, shaking him, brought him out of the slumber with a start. "What's the matter?" he exclaimed. "Why, your snoring is annoying every one in the car," said the old gentleman, kindly. "How do you know I'm snoring?" queried the source of the nuisance. "Why, we can't help but hear it." "Well, don't believe all you hear," replied the stranger, and went to sleep again.—St. Paul Dispatch.

The Poetical Patch-Quilt.

I only know she came and went —Lowell.
Like troutlets in a pool— —Hood.
She was a phantom of delight, —Wordsworth.
And I was like a fool! —Eastman.
"One kiss, dear maid," I said, and sighed, —Coleridge.
"Out of those lips unshorn;" —Longfellow.
She shook her ringlets round her head —Stoddard.
And laughed in merry scorn, —Tennyson.
Ring out, ye bells, to the wild sky, —Tennyson.
You hear them, O, my heart! —Alice Gray.
'Tis twelve at night by the castle clock, —Coleridge.
Beloved, we must part! —Alice Gray.
"Come back, come back!" he cried in grief; —Campbell.
"My eyes are dim with tears— —Bayard Taylor.
How shall I live through all the days, —Mrs. Osgood.
Through all this life of fears?" —H. C. Reynolds.
'Twas in the prime of summer time —Hood.
She blest me with her hand; —Hoyt.
We strayed together, deeply blessed, —Mrs. Edwards.
Into the Dreaming Land. —Cornwall.
The laughing bridal roses blow —Patmore.
To dress her dark brown hair; —Bayard Taylor.
No maiden may with her compare, —Brailsfield.
Most beautiful, most rare! —Rhad.
I clasped it on her sweet, cold hand, —Browning.
The precious golden link; —Smith.
I calmed her fears and she was calm —Coleridge.
As dewdrops on a pink. —H. C. Reynolds.
And so I won my Genevieve, —Coleridge.
And walked in paradise; —Harvey.
The fairest thing that ever grew—
A treasure beyond price. —H. C. Reynolds.

DOMESTIC ECONOMY.

HONEY COMB PUDDING.—One cup of flour, one cup of sugar mixed with the flour, one cup of milk, two cups of molasses, eight eggs. Beat the eggs and pour them into the molasses. Measure one cup of butter, then melt it and add it to the molasses. A teaspoonful of soda, dissolved in a little of the milk should be added the last thing. Bake three-quarters of an hour. Serve with wine sauce.

DRIED BEEF CREAMED.—Chip the beef in small, thin slices, or, if bought already cut, pick it apart in small pieces, and carefully remove all fat and stringy pieces. Put a tablespoonful of butter into a small saucepan; when hot add the beef and frizzle for four or five minutes, stirring constantly. Then add a cup of milk, into which has been stirred a level tablespoonful of cornstarch; let it boil up until it thickens sufficiently and serve.

CHARLOTTE RUSSE.—Put into one-half pint of milk one ounce of gelatine, one hour before you are ready to use it. Boil another half-pint of milk, add to it the yolks of four eggs and a quarter of a pound of sugar beaten together until light; add to this the gelatine and milk and let it come to a boil like custard. Set this away to cool. Whip to a stiff froth.

BREAST OF MUTTON GRILLED.—Half boil a breast of mutton, score it, and season it with pepper and salt, rub it over with the yolk of an egg, and sprinkle it with bread crumbs and sweet herbs chopped fine. Put it over a clear fire and broil it gently till it is a fine brown color. Chop a sprig of parsley, an onion, four pickled cucumbers and a tablespoonful of capers; boil them five minutes in half a pint of gravy. Put a tablespoonful of butter into a saucepan with a scant tablespoonful of flour, cook till smooth and brown, add the gravy, give it one boil, and pour over the mutton.

A domestic, newly engaged, presented to his master one morning a pair of boots the leg of one of which was much longer than the other. "How comes it that these boots are not the same length?" "I raly don't know, sir; but what bothers me the most is that the pair downstairs are in the same fix."

Baby's Compliment.

His father and mother were both away,
And Baby and I had been friends all day—
Many and gay were the games we played;
Baby ordered, and I obeyed—
We cared not at all for the rainy sky,
We built us a block house three feet high;
We threw pine knots on the nursery fire
And watched the flames mount higher and higher;
We hid in the most improbable nooks,
We looked at the pictures in all the books;
We ran in "tag" till his cheeks were red,
And his curls were tangled about his head.
So when the twilight was closing down
Over the fields and woodlands brown,
And nurse declared he must say good-night,
He clung to me still in the firelight—
He trampled my gown with his rough little feet,
He climbed on my lap and kissed me sweet,
And as he scrambled from off my knee,
"You'd make a good mother," said Baby to me.

I have had compliments, now and then,
From grown-up women and grown-up men;
Some were commonplace, some were new,
Never was one of them rung so true,
Never was one seemed half so real—
Baby compared me to his ideal!

—S. St. G. Lawrence.

In the Cascade mountains, about 75 miles northeast of Jacksonville, Oregon, the seeker for the curious will find the great sunken lake, the deepest lake in the world. This lake rivals the famous valley of Sinbad the Sailor. It is said to average 2000 feet down to the water on all its sides. The depth of the water is unknown, and its surface is as smooth and unruffled as a mammoth sheet of glass, it being so far below the mountain rim as to be unaffected by the strongest winds. It is about 15 miles in length, and about 4½ miles wide. For unknown ages it has lain still, silent and mysterious in the bosom of the great mountain range, like a gigantic trench scooped out by the hands of a gigantic genie.

MARFAN AND MONROT, two eminent French physicians, have recently shown that broncho-pneumonia and various other pulmonary maladies occurring in children are due to infection resulting from chronic indigestion, often the result of incorrect feeding. This was found to be the case in 13 out of 18 cases.

A man is relieved and gray when he has put his heart into his work, and done his best; but what he has said and done otherwise shall give him no peace.—Emerson.

THE wind, according to Professor Langley, is not a continuous and sustained force, but a structure consisting of a series of puffs.

If one could sell the sea at one cent per 10,000 gallons it would bring \$25,000,000,000.

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PATRONS OF HUSBANDRY.

Random Thoughts.

By A. P. ROACHE, W. M. S. G. of California.

With green and yellow the fields are flecked,
While the flowers of spring the summer has checked.

The open meeting of Watsonville Grange, called for the purpose of forming a fruit-growers' union, resulted in a second meeting, at which the union was consummated. One-fifth of the amount of stock required was subscribed on the spot. A board of directors will be elected on the 9th inst. President Walton and Manager Adams of the State Fruit Exchange were present and rendered valuable assistance.

Those who remain away from the grange for the reason that they can find nothing of interest to talk upon, should remember that there are nine constitutional amendments to be voted on at the next election. They are all important, many of them vitally so, and they should be taken up and fully and thoroughly discussed by every subordinate grange in the State.

If the farmers of this State are ever to be helped, it will only be when they thoroughly understand and unitedly determine to help themselves. No farmer should be so shortsighted as to expect any political party to go out of its way and bother its head in securing special legislation for his benefit. That is not, and should not be, the object of any political party.

The Populists have nominated J. V. Webster of Creston for Governor. Now, if the Republicans should nominate William Davis of Oakland, and the Democrats Senator Ostrom of Yuba, for the same office (all Patrons in good standing), would it not look as if farmers were coming to the front in earnest?

In the bonds of perfect union
Are the germs of perfect strength,
While the spirit of communion
Adds to life an extra length.
And to be a deathless hero
In the written deeds of man,
Just raise your flag of justice
And do the best you can.

Our State Grange Organist has selected and named the pages of 18 beautiful songs in "Grange Melodies." She expresses the wish that they be studied and the music made a feature of the next State Grange meeting, an expression with which we are in full accord. Worthy Master Brigham has appointed Hon. Leonard Rhone, chairman of the executive committee of the National Grange, and Sister M. S. Rhone, Worthy Ceres of the National Grange, a committee to take entire charge of the work of raising funds for the Grange Temple.

Take an old plow of the Roman age, compare it with one of our most improved patterns, and you have the odiousness of extreme comparisons. Take a farmer or housewife of fifty years ago, compare them to the most enlightened farmers of to-day, and the comparison will show you the full meaning of that noble Grange principle, "A higher and better manhood and womanhood." In both cases development of mind has wrought the wonderful transformation. Along the lines of this potential, dominating, all-powerful factor (mind) is the grange surely and steadily advancing, supplanting ignorance with knowledge, selfishness with charity, bigotry with liberality, opening out to light and life the broad fields of friendship, flashing its brightest gems in the streamlets of love, sending to the lone and isolated homestead the joys of companionship and the cozy pleasure of social communion, educating the mind, the heart, the hand in one beautiful symmetrical union. Surely these are attainments worthy of every one's best efforts to secure. Try it, friends, by a push on the wheels of progress.

Children's Day at Stockton Grange.

With music, recitations and mirth, finished off with ice cream and cake, the children kept Children's Day.

The address of Flora, who gracefully conducted the exercises, won merited applause, and the many visitors felt amply repaid by the efforts of the happy children under her charge. Mrs. Dodge favored them with a masterly effort, showing the mother's strong love for her boy which struck the one latent spark of good in the hardened criminal and moved the judge to pardon him.

Programme—March and salute the flag; recitation, "The Squirrel's Arithmetic," Celia Tangerman; piano duet, Bertha Jones, Nellie Pierson; recitation, Mark Alling; song, Sophie Root; recitation, "Kitty and I," Willie Olsen; "The Scarecrow," Edith Beecher; piano solo, Agnes Tangerman;

reading, lecturer; response, chaplain; grange song; "I Am Glad I Am a Little Girl," Laura Root; song, Bro. Root; recitation, Chas. Kerrick; concert recitation, Bertha Jones, Susie Moreing; piano solo, Miss Kerrick; recitation, Arthur Beecher; piano solo, Lottie Barber; recitation, Clarence Cole; solo, Walter Kerrick; recitation by 13, each raising a little banner on which were the letters spelling the words, "Dare to Do Right!" solo, Berge Harrelson; recitation, "Sugar Tooth Dick," Evelyn Kerrick; recitation in costume, "Billy Grimes," Bertha Jones, Nellie Pierson. A. A.

Stockton, June 2, 1894.

From Yuba City Grange.

TO THE EDITOR:—Yuba City Grange held its regular meeting on Saturday last and the attendance was fair, although it was very evident that the hay crop claimed the attention of a large majority of the male members. As a rule, the farmers in these parts can proceed with their haying leisurely, never, or hardly ever, being interrupted by showers, but not so this season, for they had to watch the skies and make their hay when the sun shines, which hasn't shone good for the haymakers for some time. Saturday, however, was very favorable for housing hay and everybody that could handle a fork was doing it, to the exclusion of grange day or the holding down of goods boxes on the street corners.

If there are any webfooters in California they must have been in their glory the past few weeks, wearing rubbers; and how they must have longed for a slice of the recent Oregon mists that put five feet of water onto the streets of Portland!

Well, our hay is damaged some but not seriously, while all other crops are still being benefited by the showers and cool weather. The growth of the straw is short, but the heads are large and well filled, and, strange to say, no rust has yet appeared, which may be attributed to the shortness of the straw permitting it to dry out more readily. Grain is turning color rapidly, indicating the near approach of another harvest. The extent of the crop is now estimated by some of our best guessers at 70 to 75 per cent of an average and of fine quality, while a month ago no estimates were above 50 per cent or half an average, some going as low as 33 per cent.

The fruit prospects were not affected by the drouth, but the recent cool weather is adding size and beauty to both the orchards and the fruit which, it seems to me, were never so promising as now.

But this is not telling you what we did at the grange. Well, we discussed the Lubin proposition that proposes to do something for the farmers, especially the wheat-growers. As we understand the proposition as modified, the General Government is to be asked to bear a portion of the cost of transporting the surplus to a foreign market, thus adding that much to the value of wheat at home. Owing to the slim attendance of farmers, further consideration was postponed to our next meeting. But the idea takes; for if everybody else is to be helped out of the national treasury, the farmers would be foolish to spurn the proposition.

Our grange has taken a new departure, at least for awhile. The next meeting will take place on Friday evening, July 6th. This is to better accommodate the members who labor in the orchards, vineyards and canneries. What a change! When this grange was organized these industries were unknown, and for many years after, and now their demands almost control the business of the county, the social habits of the people; and the prosperity of the community is as much dependent on horticulture as on wheat growing. It is well then to defer to the convenience of the horticulturists.

It was also decided to have a literary contest at the next meeting. This is to be managed by two captains, and there will be ice cream furnished during the session. Past Master W. J. Hardy and Miss Maud S. Green were selected as leaders, and from their known ability and energy a literary treat of rare merit will result.

The meeting will take the place of the usual monthly meeting, and will transact any business that may come before it, including instruction in the degrees. However, if necessary, other or oftener meetings will be held to transact the growing business. Under this arrangement it seems likely that our summer meetings, instead of being slimly attended on account of busy hours, will receive greater attention than those during the winter months. So mote it be. Fraternally, GEORGE OHLEYER.

Yuba City, June 4, 1894.

The Secretary's Column.

A special meeting of the Executive Committee of California State Grange was held at the office of the secretary, Santa Rosa, Cal., May 28, 1894. Present: Master A. P. Roache, Executive Committeemen G. P. Loucks and B. F. Walton and Secretary Don Mills. Bro. Cyrus Jones was not present at roll-call, but came in time to attend the evening session.

A communication from Bro. J. J. Woodman of the Executive Committee of the National Grange relative to Bro. O. H. Kelley's history of the order of Patrons of Husbandry was read, and on motion, the secretary was instructed to procure 25 copies. As soon as these books are received, patrons can have them at 75 cents per copy.

The subject of Mutual Fire Insurance was brought up and the Executive Committee appointed as a special committee to prepare data to be presented at the next State Grange regarding same; also the question of giving the wife the same power as a husband in settlement of community property, and the reduction of salaries of public officers was also referred to the same committee.

The secretary was instructed to have 500 copies of Official Directions of Subordinate Granges printed for distribution.

At this meeting the old records of the State Grange were assorted, and those that were of no value were ordered destroyed.

The joint anniversary picnic of Bennett Valley and Santa Rosa Granges took place at the hall of Bennett Valley Grange on Saturday, May 26th. Owing to the inclemency of the weather, the attendance was not as large as expected. Bros. A. P. Roache and S. Goodenough of California State Grange entertained the members of the order and visiting friends with able addresses, which were well received and greatly appreciated by those present. A harvest feast was served by members of both granges (picnic style) and everybody present invited to partake thereof. In the afternoon the seats in the large hall were removed and a social dance was enjoyed by all. The hall presented a handsome appearance, being decorated with evergreens and ferns and filled in with flowers, the product of the homes of the patrons there present. The occasion was voted a success.

The daily press brings to this office the news of the nomination of Hon. J. V. Webster of Creston, San Luis Obispo county, as the nominee for Governor on the Populist ticket. Bro. J. V. Webster was the second master of the State Grange of California, being installed master October 9, 1875, and holding that position until the expiration of his term of office, October, 1877. Bro. Webster has always been closely identified with the Patrons of Husbandry of California, and has stood by the order from its infancy, and is still a prominent member of Temescal Grange, No. 35.

The secretary of Colorado State Grange says: It has been the pleasant and profitable privilege of Colorado patrons to entertain our Worthy National Lecturer, Bro. Alpha Messer, for the past few days. It was a matter of general regret that Bro. Messer could not remain and work for us months instead of days. We are certain that in three months' time he could double the membership of the grange in Colorado. Bro. Messer gave a clear and comprehensive explanation of the principles, purposes and advantages of the grange, as viewed from a financial, educational and social standpoint. His words of encouragement created a good impression, and also created some new members, for directly after the meeting closed the master of the local grange was besieged with applications for membership. Bro. Messer told them of his work in California and other States and the condition of the order in all parts of the country. There was much in his report to encourage all loyal patrons and fill them with a determination to work for the order as they never worked before.

The committee on trade cards will meet at the office of the Secretary of State Grange Friday, June 8, 1894, to complete the work of said committee.

Bennett Valley Grange proposes to celebrate the Fourth of July in true Grange style. A committee has been appointed to make the necessary arrangements and a programme will soon be made out. All are cordially invited.

The following resolution was adopted at the Grange Congress held at the Midwinter

Fair grounds, San Francisco, Cal., April 13 and 14, 1894:

WHEREAS, The construction of the Nicaragua canal would be of infinite value to the people of the Pacific coast, and especially to the people of the State of California, as it would afford greater protection to the coast in time of war, open new lines of trade and commerce in time of peace, tend to cheapen transportation to foreign and Atlantic seaboard markets, build up new enterprises everywhere within our State and largely tend to maintain old ones, greatly increase our population and thus enhance our wealth and multiply our resources; therefore,

Resolved, by the Grange Congress held at the Midwinter Fair, that we would respectfully represent to the President and Congress that the construction of the Nicaragua canal is an immediate and pressing necessity to the entire Pacific slope, and to the country at large; and we would further represent that the construction of said Nicaragua canal, ownership, equipage and control, should be within the Government of the United States, believing such to be necessary to best subserve the interests of the whole people; and that upon adoption of the foregoing preamble and resolution it shall be the duty of the president of this Grange Congress to forward copies of the same to each of our Representatives in Congress, and to the presiding officer of each House of Congress, and to the President at Washington.

Address all communications for California State Grange to Don Mills, Santa Rosa, Cal.

Oregon State Grange.

Secretary Hilleary of the Oregon State Grange writes under date of May 28th, reporting a "pleasant, profitable and harmonious session," and the following list of new officers, with their addresses:

Master.....	Jacob Voorhees, Woodburn
Overseer.....	A. S. Roberts, The Dalles
Recturer.....	A. F. Miller, Sellwood
Steward.....	J. N. Scott, Tangent
Assistant Steward.....	G. R. Stephenson, Fulton
Chaplain.....	J. C. White, Crowley
Treasurer.....	J. B. Stump, Salem
Secretary.....	W. M. Hilleary, Turner
Gate Keeper.....	John Simpson, Sinslaw
Pomona.....	Mrs. Emma Spores, Mohawk
Flora.....	Mrs. Electra J. Phillips, Albany
Ceres.....	Mrs. S. J. Edwards, Mayville
L. A. S.....	Mrs. M. E. Tull, Barlow

RESULTS OF THE SESSION.

The grange adopted resolutions favoring direct legislation by the initiative and referendum.

Free coinage of silver on equal terms, with gold ratio 16 to 1.

Divide payment of taxes into two installments.

Government ownership and control of railroad and telegraph lines.

Abolishing State railroad commission and enactment of maximum rate and freight bill.

Executive committee is authorized to contract with established business houses for

AYER'S THE ONLY Sarsaparilla ADMITTED

READ RULE XV.



"Articles that are in any way dangerous or offensive, also patent medicines, nostrums, and empirical preparations, whose ingredients are concealed, will not be admitted to the Exposition."

Why was Ayer's Sarsaparilla admitted? Because it is not a patent medicine, not a nostrum, nor a secret preparation, not dangerous, not an experiment, and because it is all that a family medicine should be.

At the
WORLD'S FAIR
Chicago, 1893.

Why not get the Best?

trade on the Pennsylvania trade-card plan. In favor of petitioning National Grange to organize Idaho into a State Grange. In favor of interstate picnic ground on the Columbia river.

In favor of wide tires on lumber wagons. In favor of amending pure food law, especially in regard to oleomargarine, butterine, and other butter compounds.

In favor of re-enacting mortgage tax law, and would exempt debts when they are taxable in the holders' hands.

Election of United States Senators by direct vote of the people.

The grange received the greeting of the State Grange of California, sent by the worthy master, Bro. Roache; also greeting sent by worthy National Grange lecturer, Bro. Messer. These greetings were delivered by Bro. J. F. Henry, who had recently returned from a visit to the Midwinter Fair, where he had met the brothers above named.

Oregon City is the place selected for the next annual session. The grange refused to change time of meeting and it will continue to be during the season of roses and beautiful flowers, on the fourth Tuesday of May.

DO YOU WANT TO MAKE MONEY?



THE ELI—10 to 15 tons in Box Car.

IF YOU DO—BUY A PRESS FOR BALING HAY, HOPS, HIDES, WOOL, ORCHILLA, RAGS, or ANYTHING you want BALED.

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Hill's improved LIGHT-NING bales 44 tons per day. JUNIOR MONARCH, 20 to 30 tons per day.

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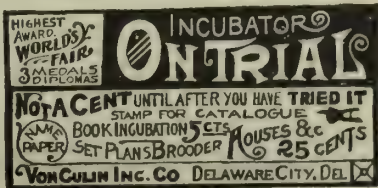


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SANTA ROSA, CAL. (Care Santa Rosa National Bank.)

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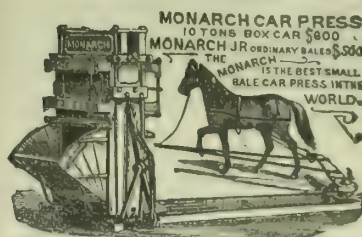
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Black Minorcas,

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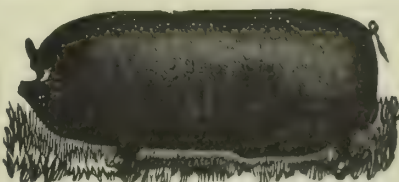


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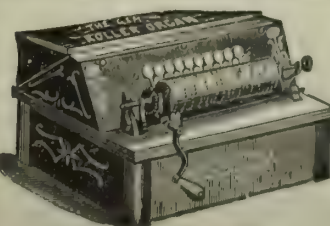
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AGRICULTURAL NOTES.

CALIFORNIA.

Butte.

The shipments of cherries from Oroville last week averaged 1000 pounds per day.

Oroville Register: One thing that has tended to prolong the present system of extensive grain farming has been the credit system as pursued by the merchants of this State. Farmers were carried on the merchants' books for a year and often longer. The plea was that grain was sold after harvest, and that was the only time of the whole year when the grain farmer had money. All his bills must run for twelve months, and the groceryman, the dry goods dealer and the boot and shoe dealer extended to grain-growers credit from the time one crop was harvested until the next one was ripe. This system injured the merchant, for if the crops proved a failure his losses were large. It injured the farmer, for as he did not have to pay as he went along he planted his whole land to grain and bought butter, hams, bacon, lard, beef, and even eggs and chickens. Now the system must change and farmers will each week bring something to town that will bring a little money, and in consequence merchants will be paid for their goods at once. This in turn will enable them to buy for cash, and consequently they can sell lower than they used to and yet make more money in the end because their losses will be small. The credit system has been a pernicious method for both farmer and merchant, and the sooner it is discontinued the better it will be for both.

An ordinance passed by the Butte County Commissioners requires that all trees brought into the county be submitted for inspection by the Horticultural Commissioner or his deputies within a stated time of their importation. The Board itself, through its agent, H. C. Bell, recently brought forty-seven olive trees from Alameda county, but neglected to report them according to the requirements of the ordinance. Mr. Boalt, the Horticultural Commissioner, seems to be no respecter of dignities, for he has brought suit against Bell and will prosecute it through the courts. The penalty is imprisonment for not less than five days or more than three months, or a fine of not less than \$10 nor more than \$500. In case of Bell's conviction the Commissioners will have to pay the fine for the violation of their own ordinance—all of which is deemed a pretty good joke in Butte county.

Kern.

Kern County Echo: The California State flower, the eschscholtzia or common poppy, may be kept blooming throughout the summer by ordinary care and attention. A little cultivation will cause the plant to put forth a much thriftier growth than it makes in its wild state. There are now a number of specimens of the flower in this city that are kept constantly in bloom.

Kings.

Kings county agriculturists have decided to pay \$12.50 per month for ordinary farm hands, and for teamsters and skilled farm labor \$17.50 per month, board included. A cut in the wages of school teachers in that county for the coming year has also been decided upon. Dry weather and hard times is what's the matter.

Lake.

A Kelseyville letter says: There will be more than an average crop of grain and hay. Prunes will yield about one-half a crop; pears, two-thirds. Peaches have been considerably injured. Our apples have suffered very little, while our berry crop is not injured at all. Take it as a whole, we have suffered less than other counties from the drouth and frost.

Los Angeles.

Pomona letter: There have been no end of theories among horticulturists in southern California in the past decade concerning the growing of cherries in this semi-tropic land. About half of the older and more experienced fruit-growers have maintained that cherries cannot be grown abundantly and with any degree of bearing ability in southern California. The crop of cherries that is gathered in Pomona this month ought to disprove forever any theory as to the impracticability of cherry culture here. Not only have the large trees on the Meserve ranch borne enormous crops of fruit, but experts in cherries say the quality and juiciness of the fruit are unexcelled. Mr. Meserve finds very large profits in his crop, and only regrets that he was dissuaded twelve years ago from planting several acres of cherry trees, as he had planned and prepared to do. Several of Mr. Meserve's larger trees are bearing yields that are worth \$18 and \$20.

Los Angeles Times: The work of picking and packing the crop from the great Seth Richards orchard near Pomona is finished. This ranch has the largest Navel orange grove in the world. There are 270 acres there planted to oranges. About 90 acres were planted in 1888 and the remainder in 1889, 1890 and 1891. This year a packing-house was built specially for handling the Richards crop. The reports show that 36 carloads of fruit were had from the property. From 60 acres there were picked 8542 boxes of marketable fruit. It is estimated that there will be easily 60 carloads of fruit from the orchard next year, and in three years more, with a good yield, the whole 270 acres ought to produce from 110 to 120 carloads.

The Los Angeles Times of June 2d says: The weather during the past week has remained cool and cloudy, with a slight fall of rain on Thursday. The moisture came too late to be of any use to grain, but it is beneficial to beans, corn and feed. Deciduous fruits are doing well, although from now on warmer weather will be needed to hasten their ripening in some of the lower lands and where irrigation is practiced. There will be a fair crop of barley, but generally it will be very short. It is scarcely probable that southern California will have enough for home consumption. From Ventura county it is reported that the bean crop will probably be very light. It is probable, however, that the recent moist, cool weather will have improved the outlook in this direction.

The finest strawberries in the Pomona market this year are of the Jessie variety, very large, deep red on

all sides and of excellent flavor. The only drawback is that the fruit is not a good shipper.

Monterey.

Heavy shipments of cattle are being made by rail from Monterey and San Luis Obispo counties to the State of Nevada, where feed is abundant in the alfalfa districts along the Truckee river.

Napa.

St. Helena letter: C. Carpy has just purchased the property known as the Bourn wine cellar, in Napa county, about a mile north of St. Helena. It has a capacity for storing 3,000,000 gallons of wine, cost \$600,000, and is said to be the largest cellar of any kind in America. It has four floors and is 400 feet long by 100 feet wide. The wine manufactory connected with the cellar is the largest in the State. The cooerage sold with the cellar will hold 2,000,000 gallons of wine. It also includes a distillery with a capacity for 1500 gallons a day. The stables, homestead, outbuildings and 34 acres of land go with the cellar. The price paid was about \$500,000, being \$100,000 less than the cost of the improvements. Mr. Carpy has a cellar in Napa with a capacity of 2,000,000 gallons; one in San Jose with a capacity of 1,500,000; total with the Bourn cellar, 6,500,000 gallons. He evidently does not think that the wine business is a failure in California.

Orange.

Santa Ana letter in Los Angeles Times: In the failure of the fruit firm of George L. Hassen of Los Angeles, who purchased several orchards of oranges in this county, a number of residents in this vicinity lost considerable money. Besides those who lost in the sale of their fruit to this firm, a number of laborers are reported out in various sums, ranging from \$10 to \$30 each. There are none others, perhaps, who will feel their loss more than these laborers, who can least afford to lose any part of their hard-earned wages.

San Bernardino.

The Ontario Record says: A visit to the Dwinelle cherry orchard on 24th street is a revelation to one who has been accustomed to believe that cherries cannot be grown with profit in southern California. The trees are literally loaded with fruit that in size, color and flavor compares with the best northern cherries. Messrs. Harwood and Woodford, who have charge of the crop, are marketing the fruit at from 10 to 12½ cents per pound, and find a brisk demand at those prices. On the heavier soil along the mesa, at an altitude of about 2000 feet, cherry orchards will pay well.

Santa Barbara.

The Santa Maria Times reports excellent fruit prospects. Apricots suffered in a few localities from frost, but the young orchards just coming into bearing will more than make up the loss. Trees generally are in good condition, and two months of moderately favorable weather will ripen all the fruit the trees are able to bear. Prunes and other fruits are at this time fully up to last year in condition and abundance.

Santa Cruz.

The Pajaronian reports that the shipment of Pajaro valley strawberries to the East in refrigerator cars has ceased. Locally it is considered a misfortune, for the growers are not satisfied with the San Francisco market—for reasons not stated.

The Pajaronian says: "Pajaro valley needs a fruit-drier of modern construction, large capacity, and backed by heavy capital and the co-operation and good will of fruit-growers. Much of the fruit of this section will have to be marketed at a loss because of the absence of a drier."

Solano.

A correspondent of the Dixon Tribune writing from Tremont says that a visit among the grain fields in the eastern section of the county convinces him that the yield of grain will be a great deal more than expected. In some localities the crops are short, while in others they are first class. The failures in most cases are of winter-sown grain.

Sonoma.

Hunt Bros.' cannery at Santa Rosa has been running this past week on white cherries. The Democrat says that "the canners and shippers are playing into each others' hands this season. The canneries want nothing but white cherries, and the shippers are after the black. There is a good crop, though in some sections the fruit is not as well developed as it ought to be."

The hay crop has been benefited by the late rains and will be fine all over the county.

Sonoma Tribune: The ravages of frost have not been as trivial as at first proposed at Geyersville. In that part Claus Meyer, a large vineyardist, says the loss to his crop of grapes will be fully 50 per cent, and other vineyards will suffer to the same extent. The crop, however, will not be small, and on account of the stagnation in the wine market the growers do not lament the damage much. A peculiarity about the frost is, that it only affected the grape-growing districts in spots. While some vineyards were partially destroyed, others bear no signs of being the least injured.

Sonoma Tribune: No large sales of wine have been made in this section for several days and the majority of the cellars are brimful yet. Gobbi Bros., a firm that produced as much wine as any other in this vicinity last year, have something like 50,000 gallons of the '93 vintage on hand. James Finlayson, another large maker, has disposed of only some of his older wines which were very choice.

Tulare.

Jas. O'Neill, whose place is near the Old Cottage postoffice, is the owner of a ten-day colt that is thought to be the largest of its age in the country. When foaled it was 46 inches in height.

Tulare Times: Eight of the four-year-old prune trees of J. W. Baume have broken off and five others have blown over. The cause of this disaster is that the tree was budded on apricot root. The two woods unite but poorly. John H. Harter has similar stock and he has lost ten or more trees.

Yolo.

J. D. Martin, says the Mail, has learned a trick in irrigating strawberries. He leveled off his land to as near a billiard table plane as possible. His

main irrigating ditch runs through the center and lateral ditches go down alternate rows and return between; thus the water is made to push itself along and to more thoroughly saturate the ground. This method prevents the hardening of ground, which keeps the water from striking in on the higher ground where the water runs fast, and does not stand.

Dunnigan letter: The farmers who have made a venture along the tule land seem to be in luck this year. Everything is going their way. The soil is just right and the weather is favorable for a big crop. All they have planned is doing well and they can continue the season for planting a week longer, in consequence of the rain, if they choose to do so.

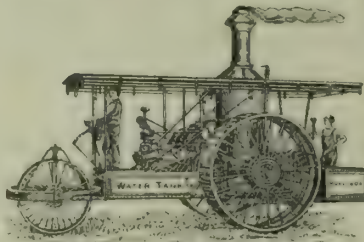
A San Francisco buyer has been quickly moving around among the farmers near Winters, trying to engage all the hay there is for sale.

But little hay has been contracted for in the Dunnigan district. The prevailing price is about \$10 per ton in the field.

The wild blackberry crop in the neighborhood of Knight's Landing has turned out to be immense. Hundreds of pickers are to be seen ranging over the Fair ranch searching for the delicious fruit.

RUDY'S PILE SUPPOSITORY is guaranteed to cure Piles and Constipation, or money refunded. 50 cents per box. Send stamp for circular and Free Sample to MARTIN RUDY, Lancaster, Pa. For sale by all first-class druggists.

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We have one of these engines that was used about one month last season and was taken back by us by reason of illness of purchaser. Engine is in perfect order, and in better working order than when first sent from factory. A BARGAIN. Indicated power, 80-horse; Cylinders, 8x8; Wheels, 8 ft. high, 28 in. wide; weight, less than 10 tons. Price when new, \$4500.

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Cheapest, Best and Only One to Protect Trees and Vines from Frost, Bunburn, Rabbits, Squirrels, Borers and other Tree Pests. For Testimonials from Parties who are using them send for Descriptive Circulars.

B. F. GILMAN,

Sole Manufacturer of Patent Tule Covers,
420 NINTH ST., SAN FRANCISCO, CAL.



S. F. MARKET REPORT

Market Review.

SAN FRANCISCO, June 6, 1894.

Wheat.

In the local wheat market the past week has been a dull time. There has been utter indifference, both on the part of sellers and buyers, and, of course, very little trading. This morning, however, the market picked up smartly in response to better news from England. Business in the sample line was not particularly brisk, but in speculative circles there was much excitement, and a large volume of business was done in futures at advanced rates. December wheat gained 6½¢ per cwt. from the closing figure of yesterday to the highest rate paid at the regular session this morning. Spot wheat for shipping purposes is quotable at 85¢ per cwt. for No. 1 grade and 86½¢@87½¢ for a choice article. The milling range is given at 95¢@1.05 per cwt.

Barley.

Sales this morning of choice bright feed at 92½¢ per cwt show that the market is in much better shape, while dealers are hopeful that the improvement will be maintained. We quote: Feed, 87½¢@90¢ for fair to good and 91½¢@92½¢ per cwt for choice; Brewing, 97½¢@1.07½¢ per cwt.

General Produce Market.

OATS—There is a weak tone to the market and sellers are at a disadvantage. Stocks are large, though not particularly burdensome. Still, dealers would be better pleased if some circumstance would occur by which a little stimulation would be imparted to trade in the Oat line. We quote: Milling, \$1.20@1.30; Surprise, \$1.35@1.40; fancy feed, \$1.27½@1.30; good to choice, \$1.15@1.25; poor to fair, \$1.05@1.10; Black, nominal; Red, nominal; Gray, \$1.10@1.20 per cwt.

CORN—The market has taken a change for the better, and a small advance in quotations has been established. Quotable at \$1.17½@1.20 per cwt for Large Yellow, \$1.30@1.32½ for Small Yellow and \$1.32½@1.35 for White.

CRACKED CORN—Quotable at \$27.50@28.50 per ton.

CORNMEAL—Millers quote feed at \$27@28 per ton; fine kinds for the table, in large and small packages, 2½¢@3½¢ per pound.

OILCAKE MEAL—Quotable at \$35 per ton from the mill.

COTTONSEED OILCAKE—Quotable at \$30 per ton.

SEEDS—We quote: Mustard, brown, \$2@2.25; Yellow, \$3@3.25; Triese, \$2.50@2.75; Canary, 3¢@4¢; Hemp, 3¢@4¢; Rape, 2¢@2½¢; Timothy, 6¢ per lb; Alfalfa, 10¢@11¢; Flax, 3¢@3.25 per cwt.

MIDLINGS—Quotable at \$18@19 per ton. **MILLSTUFFS**—We quote: Rye Flour, 3½¢; Rye Meal, 3¢; Graham Flour, 3¢; Oatmeal, 4½¢; Oat Groats, 5¢; Cracked Wheat, 3½¢; Buckwheat Flour, 5¢@5½¢; Pearl Barley, 4½¢@4¾¢ per lb; Normal Nutrient, \$3 per case of 1 dozen cans; Breakfast Delight, \$3.25 per case of 2 dozen packages.

FEED—Manhattan Horse Food (Red Ball Brand) in 100-lb cabinets, \$8. Manhattan Egg Food, 100-lb bags, \$11.50.

BRAN—Quotable at \$14.50@16 per ton.

HAY—Considerable damage has been done to the Hay crop by the late rain and the market is likely to be handicapped for some little time by off rings of this character. Prices weak all round. We quote as follows: New Wheat sells at a range of \$9@12; new Wild Oat, \$9@11 per ton. Wire-bound Hay sells at \$1 per ton less than rope-bound hay. Following are the wholesale city prices for rope-bound hay: Wheat, \$12@14.50; Wheat and Oat, \$11@13.50; Wild Oat, \$11@13.50; Alfalfa, \$9@12; Barley, \$10@12; Compressed, \$11@14; Stock, \$8@10 per ton.

STRAW—Quotable at 70¢@80¢ per bale. **HOPS**—Trade is quiet, while prices show no improvement. Shipments are being made to other centers on owners' account. Quotable at 12¢@13¢ per lb.

RYE—Quotable at \$1.07½@1.10 per cwt.

BUCKWHEAT—Nominal.

GROUND BARLEY—Quotable at \$21.00@21.50 per ton.

POTATOES—There is active demand and daily arrivals clean up tolerably well. We quote new: Early Rose, 60¢@90¢; new Peerless, 50¢@65¢ in sacks and 65¢@90¢ in boxes.

ONIONS—Receipts moderate. Quotable at 30¢@45¢ per cwt.

DRIED PEAS—We quote: Green, \$1.25@1.50; Blackeye, \$1.60@1.65; Niles, \$1.35@1.45 per cwt.

BEANS—We quote: Bayos, \$2.25@2.50; Butter, \$1.75@1.80 for small and \$2@2.15 for large; Pink, \$1.90@2; Red, \$2.30@2.60; Lima, \$3@3.25; Pea, \$2.35@2.50; Small White, \$2.40@2.65; Large White, \$2.40@2.50 per cwt.

VEGETABLES—Some green corn has been on the market for a couple of days, too poor to find a buyer. There is also a quantity of stale string beans that are offering at \$1 per sack. Summer squash is in larger supply, coming from new directions. We quote: Cucumbers, \$1@1.75 per box; Asparagus, 50¢@1 per box for ordinary run and \$1.25@1.75 per box for choicer quality; Rhubarb, 25¢@50¢ per box; Green Peas, \$1.00@1.50 per sk; Garden Peas, 2¢@2½¢ per lb; Summer Squash, 30¢@50¢ per box for Vacaville and \$1@1.25 per box for bay; String Beans, 2¢@4¢ per lb; Refugee Beans, 4¢@5¢ per lb; Wax Beans, 3¢@4¢ per lb; Green Corn, 30¢@35¢ per doz.; Marrowfat Squash, \$20 per ton; Green Peppers, 10¢@12½¢ per lb; Tomatoes, \$1.50@2.25 per box; Turnips, 75¢ per cwt; Beets, 75¢ per sack; Parsnips, \$1.25 per cwt; Carrots, 35¢@40¢; Cabbage, 50¢@60¢; Garlic, 30¢ per lb; Cauliflower, 60¢@70¢ per dozen; Dry Peppers, 17½¢@20¢ per lb; Dry Okra, —¢ per lb.

FRESH FRUIT—Another arrival of figs yesterday, but it was in poor order and unsalable. Peaches are in slim offering. Cherry quotations are a trifle firmer, owing to small receipts. Apricots are well represented. Currants are doing better in price. We quote: Peaches, \$1@1.25 per box; Cherries, white, 15¢@25¢; do, loose, 1¢@2¢ per lb; Royal Ann, 2¢@2½¢ per lb; black, 30¢@60¢ per box; do, loose, 3¢@5¢ per lb; Apricots, Pringle, 25¢@50¢ per box; do, Seedlings, 40¢@60¢; do, Royal, 75¢@1¢ per

box; Currants, \$3@4.50 per chest; Cherry Plums, 25¢@40¢ per drawer; Apples, 25¢@50¢ per box; Pears, 50¢@75¢ per box.

BERRIES—Good stock of all kinds in demand at full figures. We quote: Newcastle Raspberries, \$1@1.50 per crate; Alameda Raspberries, \$1@1.50 per chest; Strawberries, \$3.50@7 per chest for Sharpless and \$10@15 for Longworths; Blackberries, \$12@15 per chest; Gooseberries, 1¢@1½¢ for common, and 4 to 5¢ per lb for the English variety.

CITRUS FRUIT—The Orange season is nearing its end. Most of the offerings are faulty, and therefore slow of sale even at easy prices. We quote: Fair to choice Navel Oranges, \$1.25@2.50 per box; Seedlings, 75¢@1.25; Mexican Limes, \$3.50@4 per box; Lemons, Sicily, \$4@5; California Lemons, 50¢@1.25 for common and \$1.50@2.50 for good to choice; Bananas, \$1.50@2.50 per bunch; Pineapples, \$2.50@4 per dozen.

HONEY—Stocks are light and prices firm. At the same time trade is limited, as buyers are not inclined to pay current rates. We quote lots as follows: Comb, 10½¢@11½¢ per lb for bright and 9¢@10¢ for dark to light amber; water white extracted, 6¢@6½¢; amber extracted, 5½¢@5¾¢; dark, 4½¢@5½¢ per lb.

BEESWAX—Quotable at 24¢@25¢ per lb.

BUTTER—Arrivals continue large, causing prices to shape against sellers. We quote as follows: Fancy Creamery, 16½¢@17¢; fancy dairy, 15¢@16¢; good to choice, 13¢@14¢; store lots, 11¢@12½¢; pickled roll, new, 19¢@20¢ per lb.

CHEESE—Supplies are coming forward with freedom, and stocks are beginning to show some accumulation. We quote: Choice to fancy, 8¢@9¢; fair to good, 6½¢@7½¢; Eastern, ordinary to fine, 14¢@15¢ per lb.

EGGS—Offerings are still in excess of the demand and prices yet show weakness. We quote: California ranch, 13¢@15¢; store lots, 11¢@12½¢; Eastern, 12¢@13½¢ per dozen.

POULTRY—The condition of the market remains unchanged. Young stock is in fair demand, but old Roosters and old Hens are hard to dispose of. Many Broilers are still shipped to market that are too small to find ready sale and have to be sold at about anything that a buyer will pay. We quote: Live Turkeys—Gobblers, 9¢@10¢; Hens, 8¢@10¢; Roosters, \$3.25@3.50 for old and \$7.50@9 for young; Broilers, \$1.50@2.50 for small and \$4@5 for large; Fryers, \$6@7; Hens, \$3@4.50; Ducks, \$3 for old and \$4.50 for young; Geese, \$1 for old and \$1@1.50 for young; Pigeons, \$1.25@1.50 for young and \$2.25@2.50 per dozen for old.

PROVISIONS—Business is of fair proportions, while prices are steady, especially for Hams, Bacon and Lard. We quote as follows: Eastern Sugar-cured Hams, 13¢; California Hams, 12¢; Bacon, Eastern, extra light, sugar-cured, 14¢@15¢; medium, 10¢; do, light, 10½¢; do, light, boneless, 12¢; light, medium, boneless, 11¢; Pork, extra clear, bbls, \$20; hf bbls, \$10.50; clear, bbls, \$19; hf bbls, \$10; boneless Pig Pork, bbls, \$21.50; hf bbls, \$11; Pigs' Feet, hf bbls, \$4.75; Beef, mess, bbls, \$7.50@8; do, extra mess, bbls, \$8.50@9; do family, \$9.50@10; extra do, \$11@11.50 per bbl; do, smoked, 10¢; Pickled Tongues, hf bbls, \$8; Eastern lard, tierces, 7½¢@8¢; do prime steam, 10¢; Eastern pure, 10-lb pails, 10½¢; 5-lb pails, 10½¢; 3-lb pails, 10½¢; California, 10-lb tins, 9¢; do, 5-lb, 9½¢; do, kegs, 10½¢; do, 20-lb buckets, 10¢; compound, 7½¢ for tierces.

WOOLS—S. Pinschower of Cloverdale writes down that there will be a Wool sale held in that place on the 8th, when about 500 bales will be put up for competition. On the 12th inst. another auction offering will occur at Ukiah, on which occasion the catalogue will embrace at least 800 bales. Mendocino county Wools are attractive to the trade, and a goodly gathering at each place can be expected on the days of sale. Local business is briefly summed up in the weekly report of Thomas Denigan, Son & Co., as follows: "The past week has been fairly active for the Wool trade, moderately liberal sales having been made to both scourers and shippers, including fall and spring descriptions. Prices are getting weaker, and it is a buyer's market." We quote spring: Year's fleece, ½ lb., 5¢@7¢; Six to eight months, San Joaquin, poor, 5¢@6¢; do fair, 7¢@8¢; Oregon and Washington: Heavy and dirty, 6¢@7¢; good to choice, 8¢@10¢; valley, 10¢@13¢; Nevada: Heavy, 6¢@8¢; choice light, 9¢@10¢. We quote fall: Northern defective, 5¢@6¢; Southern and San Joaquin, 3¢@4¢.

HIDES AND SKINS—Quotable as follows:

	Sound.	Culls.
Heavy Steers, 54 lbs up, ½ lb.	4½¢@5¢	3½¢@4¢
Medium Steers, 48 to 56 lbs.	4¢@5¢	3¢@4¢
Light, 42 to 47 lbs.	3½¢@3¾¢	2½¢@2¾¢
Cows, over 50 lbs.	3½¢@3¾¢	3¢@4¢
Light Cows, 30 to 50 lbs.	3½¢@3¾¢	2½¢@2¾¢
Stags	3¢@4¢	2¢@3¢
Kips, 17 to 30 lbs.	4¢@5¢	3¢@4¢
Veal Skins, 10 to 17 lbs.	5¢@6¢	4¢@5¢
Calf Skins, 5 to 10 lbs.	7¢@8¢	6¢@7¢

Dry Hides, usual selection, 7¢; Dry Kips, 7¢; Calf Skins, do, 7¢; Cull Hides, Kip and Calf, 4¢; Pelts, Shearling, 10¢@20¢ each; do, short, 25¢@35¢ each; do, medium, 40¢@50¢ each; do, long wool, 50¢@75¢ each; Deer Skins, summer, 25¢; do, good medium, 15¢@20¢; do, winter, 5¢ per lb; Goat Skins, 25¢@40¢ apiece for prime to perfect, 10¢@20¢ for damaged, and 5¢@10¢ each for Kids.

San Francisco Meat Market.

There is a steady tone to the market, trade being fair and receipts sufficient for all wants. Following are the rates for whole carcasses from slaughterers to dealers:

BEEF—First quality, 5¢@5½¢; second quality, 4¢@5¢; third quality, 3½¢@4¢ per lb.

CALVES—Quotable at 3½¢@6¢ per lb.

MUTTON—Quotable at 5¢@6¢ per lb.

LAMB—Spring, 6½¢@8¢ per lb.

PORK—Live Hogs, on foot, grain fed, heavy and medium, 4½¢@4¾¢; small Hogs, 4¼¢@4½¢; stock Hogs, 3½¢@3¾¢; dressed Hogs, 6½¢@6¾¢ per lb.

Sales of California Fresh Fruit at Chicago.

CHICAGO, June 4.—The Earl Fruit Company sold at open auction to-day one carload of California fruit, realizing the following prices: Black Tartarian Cherries, \$1.30 to \$1.40; Royal Anne, \$1.10 to \$1.40; Black Republican, \$1.40; Biggareau, \$1.30 to \$1.40; Centennial, \$1.25; Apricots, half-crates, Royal, \$2.55; Seedling, \$1.85; Pringle, \$1.40 to \$1.70; Cherry Plums, half-crates, \$2.55.

GRANGERS' BUSINESS ASSOCIATION.

Principal Place of Business, 103 Davis St., San Francisco, State of California.

NOTICE:

There are delinquent upon the following described stock, on account of an assessment levied on the eleventh (11th) day of April, 1894, the several amounts set opposite the names of the respective stockholders as follows:

Names.	No. of Certificate.	No. Shares.	Amount.
Adams, D. Q.	220	8	\$ 30 00
Ashley, Geo. W.	245	6	22 50
Adams, Amos	326	12	45 00
Baker, John	268	8	30 00
Barber, M. R.	258	8	30 00
Barber, Orpha	257	4	15 00
Barber, Elam B.	259	4	15 00
Bangs, J. L.	37	10	37 50
Blyther, Mrs. A. E.	53	2	7 50
Brown, Sherman	49	8	30 00
Brake, G. W.	44	1	3 75
Clark, Jas. A.	59	20	75 00
Clark, Annetta	60	4	15 00
Dewey, Mrs. A. T.	382	2	7 50
Ewer, W. B.	282	20	75 00
Frye, W. H.	76	29	75 00
Gates, T. M.	340	2	7 50
Gray, M. L.	7	28	105 00
Hollenbeck, H. M.	238	8	30 00
Hollenbeck, Mrs. H. M.	239	8	30 00
Larned, D. A.	181	20	75 00
Larkey, John	184	30	112 50
Morris, J. R.	241	80	300 00
Morris, J. R.	242	12	45 00
McReynolds, S.	10	8	30 00
Nuckoll, N.	174	4	15 00
Nuckoll, Mrs. S. A.	175	2	7 50
Naglemaker, John	477	10	37 50
O'Brien, J. G.	283	20	75 00
Pittman, Mrs. C. J.	197	6	22 50
Pittman, Carrie	198	4	15 00
Proctor, G. W.	217	40	150 00
Russell, Mrs. C. B.	462	40	150 00
Rose, Miss C. E.	397	40	150 00
Sawyer, Jackson	16	4	15 00
Swain, R. C.	179	8	30 00
Strentzel, J.	187	2	7 50
Sayward, J. W.	323	4	15 00
Steckter, Mary E.	348	2	7 50
Steckter, John	347	2	7 50
Steckter, P. J.	346	2	7 50
Smith, S. R.	454	16	60 00
Smith, S. R.	455	20	75 00
Tuck, J.	313	38	135 00
Van Sandt, A. A.	200	4	15 00
Vincent, J. F.	243	10	37 50
Wilson, E.	130	6	22 50
Walker, Robert	185	16	60 00
Whitney, Mrs. S. D.	442	2	7 50
Young, A. J.	193	2	7 50

And in accordance with law and an order of the Board of Directors, made on the 11th day of April, 1894, so many shares of each parcel of such stock as may be necessary, will be sold at public auction at the office of the Corporation, No. 108 Davis street, San Francisco, Cal., on FRIDAY, the 15th day of June, 1894, at two o'clock P. M. of said day, to pay delinquent assessments thereon together with costs of advertising and expenses of sale.

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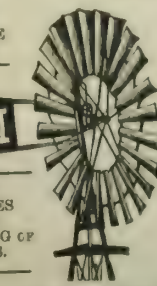
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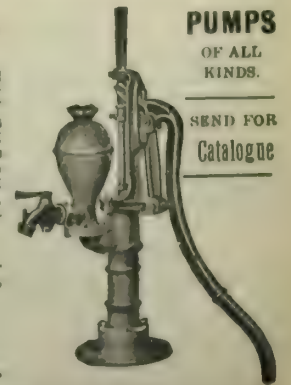
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520,202—STAY LADDER—G. E. Chittenden, Niles, Cal.
520,204—UNCOUPLER AND BRAKE—J. P. Diaz, S. F.
520,313—REVERSING GEAR—G. E. Hoyt, S. F.
520,164—ANIMAL GUN—G. E. Lande, La Grande, Or.
520,117—GATE LATCH—J. M. Mathews, Seattle, Wash.
520,372—BUG AND BUSHING—G. H. Merrick, S. F.
520,239—BUSHING AND FAUCHT—G. H. Merrick, S. F.
520,240—BUSHING FOR BARRELS—G. H. Merrick, S. F.
520,399—BOOT FOR STAMPS—A. F. Purdy, Laurence, Cal.
520,220—CURBS, ETC.—P. W. Reardon, Oakland, Cal.
520,232—GUIDE FOR DISCHARGE NOZZLES—C. F. Rodin, S. F.
520,083—TELEPHONE SYSTEM—Fabin & Hampton, S. F.
520,223—ELECTRIC ADVERTISING APPARATUS—G. L. Schneider, S. F.
520,224—BESS PRESSURE APPARATUS—R. S. Schroeder, S. F.
520,342—SWIMMING POOL—A. Suto, S. F.
520,096—LEDGER INDEX—T. A. Uren, Prineville, Or.
520,281—SIDEHILL PLOW—G. Willard, Los Angeles, Cal.
520,109—TRACK FOR DOORS, ETC.—G. E. Witt, Fresno, Cal.
520,348—FIRE ALARM—E. A. Wright, Monrovia, Cal.
23,284—DESIGN FOR PICTURE FRAME—W. F. Lambert, Milbra, Cal.

NOTE.—Copies of U. S. and Foreign patents furnished by Dewey & Co. in the shortest time possible (by mail or telegraphic order). American and Foreign patents obtained, and general patent business for Pacific Coast inventors transacted with perfect security, at reasonable rates, and in the shortest possible time.

Paper Pulp from Logs.

A new machine for grinding a log into paper pulp and producing a fiber believed to be much better than that obtained by the Voetter method is reported from New England, but without names of inventors or place of trial. The case of the machine is of metal, over one inch thick, and very heavily made. Throughout its surface it is pierced with holes and the inner surface is corrugated. Within is a heavy cylinder, the outer surface of which is corrugated, the corrugations running in a direction opposite to those of the casing. When the cylinder is set in motion and a log of wood is placed between cylinder and casing, the corrugations strip the wood into a soft, fluffy, fibrous material, almost like cotton; so nearly like it, in fact, as to be mistaken for cotton by the uninitiated.

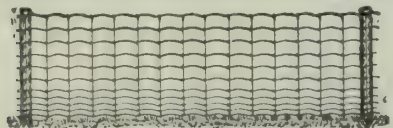
Branding by Electricity.

A novel system of branding horses, cattle and sheep is reported from Australia. The brand is kept the required heat by electricity from storage batteries. From these a flexible rubber tube carries the electric energy to the brand, which is heated from within. It is claimed that this brand is perfectly safe, that it marks without a blotch, and is kept at a uniform temperature.

New Naval Militia Flag.

The Secretary of the Navy has approved a design of a special flag for the naval militia. It has a field of blue, in the center of which is a division of yellow showing a blue anchor. This flag will be displayed on all warships engaged in naval militia drill and will be used by the militia of the various States.

McCart's Annual Statistician for 1894 is complete and excellent as usual. To those who, either in political, business or professional life, deal with comparative figures, it is a thing of infinite convenience and value; and whoever has once used it finds it indispensable.



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The purpose of this notice is to inform both farmers and merchants, who use or sell Horse Forks, that they must not purchase Horse Forks that infringe the above Patents; and to call their attention to the fact that certain horse forks, manufactured by F. E. Myers & Bro. Ashland, O., and imported and sold by the Deere Implement Company, of San Francisco, are direct infringements of the above patents, the manufacturers of the infringing forks having admitted in Court that their forks were an infringement of the above patents, and are now paying royalty for manufacturing and selling them; and they have agreed not to sell any west of the Rocky Mountains.

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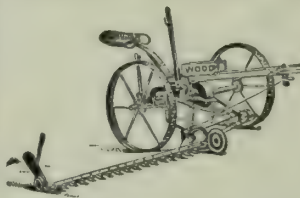
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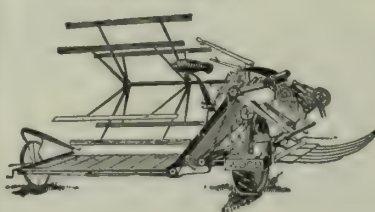
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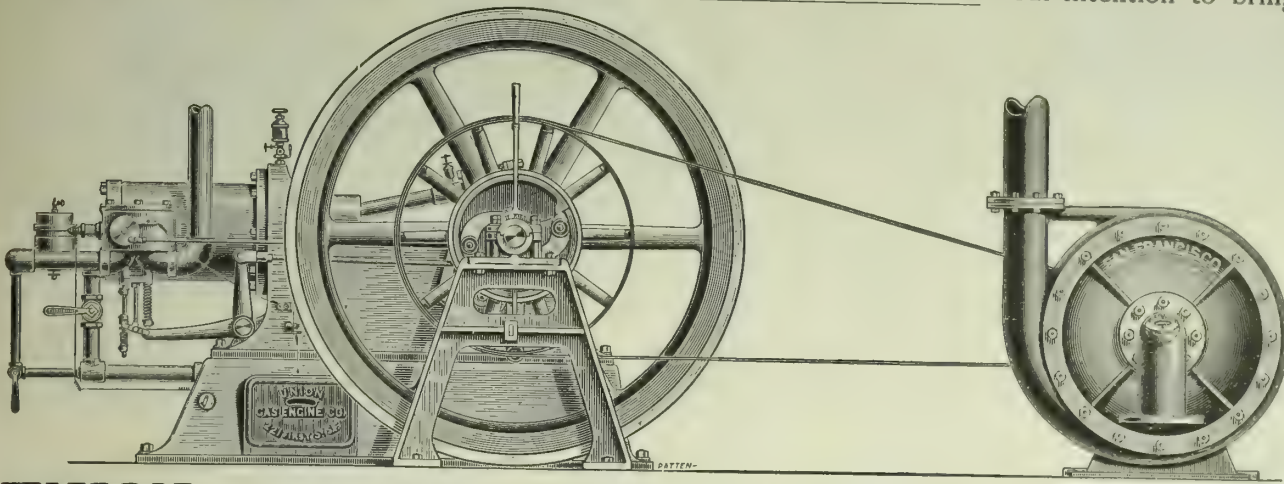
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Residence: Sausal Fruit Farm.

WARNING!

Many so-called gasoline engines are now on the market which are direct infringements of our patents, and it is our intention to bring suit against the various infringers. As the law holds the purchaser, as well as the manufacturer, we would advise parties who have already purchased other gasoline engines to obtain from the sellers of such engines A GOOD AND SUFFICIENT BOND PROTECTING THEMSELVES IN CASE DAMAGES ARE OBTAINED AGAINST THEM, as it is not the policy of this company to work a hardship on innocent parties, but the law makes no such provision.



UNION GAS ENGINE CO., 221-223 First Street, San Francisco, Cal.
OWNERS OF 20 PATENTS.

Ocean Cables.

A new 2200-mile cable is to be laid from Halifax, N. S., to England. This, with the two now in process of submergence, makes twelve cables between America and Europe. The original 1858 cable weighed 93 pounds per mile and had a conductor of seven copper wires of 22½ gauge. Price of deep-sea wire per mile, \$200; price of spun yarn and iron wire per mile, \$265; cost of outside coating of tar and gutta-percha, \$25 per mile; total cost per mile, \$485. At \$485 per mile the total cost of the 2500 miles of deep-sea wire was \$1,212,500. To this add 25 miles of "short-end" wire, costing \$1450 per mile, and we find that the first ocean cable, exclusive of instruments, cost \$1,250,000. Cables can now be made and laid for less than \$300 per mile.

A Curious Formula.

The following formula will enable you to determine the day of the week of any date: Take the last two figures of the year; add a quarter of this, disregarding the fraction; add the date of the month, and to this add the figure in the following list, one figure standing for each month, 3-6-6-2-4-0-2-5-1-3-6-1. Divide the sum by seven, and the remainder will give the number of the day in the week, and when there is no remainder the day will be Saturday. As an illustration, take May 10, 1894. Take 94, add 23, add 10, add 4. Divide the sum by 7. The remainder is 5, and the day is Thursday. Or take to-day, add 94, 23, 9, 0. Divide the sum by 7. There is no remainder, showing the day to be Saturday.

Golden Relics in Mexico.

In one of the oldest ruins in the State of Oaxaca, Mexico, a number of very rare and interesting images, found in metal, have been uncovered. The images represent people of oriental appearance and dress, as well as priests in their robes of sacrifice. They bear hieroglyphics of unknown characters and are elaborately wrought, with fine art lines shown in every curve. The images found thus far are of gold, either wholly or in part, and are coated with some unknown enamel, which has preserved them from all harm in the many years they have been buried in the soil.

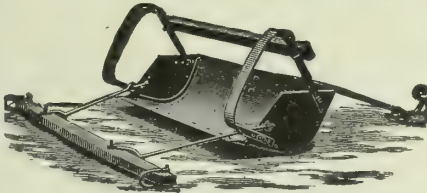
TREES are now felled to a considerable extent by electricity. A platinum wire, heated white-hot by the current, is used, stretched between two poles, as a saw. There is less work than with a saw, no sawdust is produced, and the charring of the surface of division tends to prevent decay. In some cases the time required to fell a tree by this method is only one-eighth of that necessary for sawing.

There is more Catarrh in this section of the country than all other diseases put together, and until the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease, and prescribed local remedies, and by constantly failing to cure with local treatment, pronounced it incurable. Science has proven Catarrh to be a constitutional disease and therefore requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, Ohio, is the only constitutional cure on the market. It is taken internally in doses from 10 drops to a teaspoonful. It acts directly on the blood and mucous surfaces of the system. They offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address F. J. CHENEY & CO., Toledo, O.

Sold by Druggists, 75c.

THE Porteous Improved Scraper

Patented April 8, 1883. Patented April 17, 1883.



Manufactured by G. LISSENDEN.

The attention of the public is called to this Scraper and the many varieties of work of which it is capable, such as Railroad Work, Irrigation Ditches, Levee Building, Leveling Land, Road Making, etc.

This implement will take up and carry its load to any desired distance. It will distribute the dirt evenly or deposit its load in bulk as desired. It will do the work of Scraper, Grader, and Carrier. Thousands of these Scrapers are in use in all parts of the country.

This Scraper is all steel—the only one manufactured in the State.

Price, all Steel, four-horse, \$40; Steel two-horse, \$31. Address all orders to G. LISSENDEN, Stockton, California.

STOCK SCALES

4 TON \$45.

U.S. STANDARD. FULLY WARRANTED.

Delivered at your R. R. Station and ample time for building and testing allowed before acceptance.

USGOOD & THOMPSON, Binghamton, N. Y.

PORTABLE PLATFORM SCALES, TRUCKS, ETC.

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G. H. LINDEMANN, Agent,

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BUSINESS COLLEGE.

24 POST STREET.....SAN FRANCISCO.

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J. I. C. DRIVING BIT STILL LEADS THEM ALL. IT WILL CONTROL THE MOST VICIOUS HORSE. 75,000 sold in 1891. 100,000 sold in 1892. THEY ARE KING. Sample mailed X C for \$1.00. Nickel, \$1.50. Stallion Bits 50 cts. extra. RACINE, WIS. J. P. DAVIES, Mgr. RACINE MALLEABLE IRON CO.

TREE WASH. OLIVE DIP.

"Greenbank" Powdered Caustic Soda and Pure Potash.

T. W. JACKSON & CO.

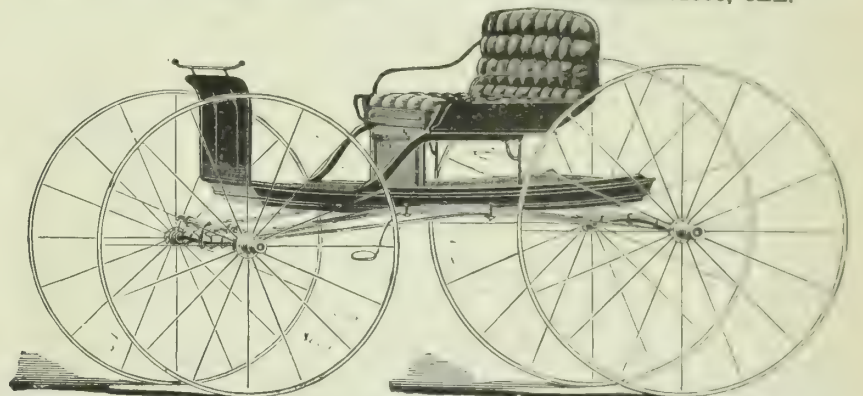
Sole Agents,

No. 5 Market Street, San Francisco, Cal.

J. W. FORGEUS, Santa Cruz, Cal. Three well bred Brown Leghorn cockerels or 2 pullets and 1 cockerel for \$5. A handsome lot of Barred Plymouth Rocks. I shall breed from 20 pens of P. Rocks this coming season. All interested visit my yards or correspond. Satisfaction guaranteed. Reference: People's Bank.

CALIFORNIA WAGON & CARRIAGE CO.

36½ to 44½ FREMONT STREET.....SAN FRANCISCO, CAL.

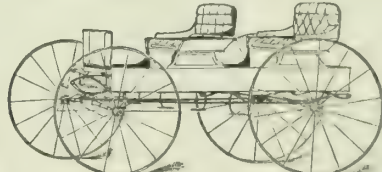


No. 31.—1-inch steel axle, leather trimmed. Price \$60.

HARNESS...\$7. BUGGIES...\$75. SURREYS...\$130.



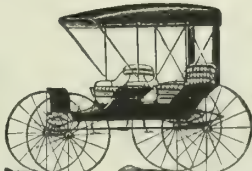
No. 129.—Price \$65.



No. 600.—1½ axle, 1½ wheel. Price \$65.



No. 81.—Price \$100.



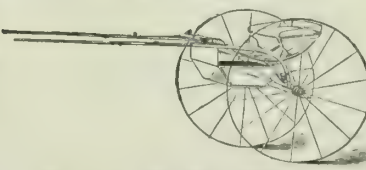
No. 90.—1½ axle. Price \$125.

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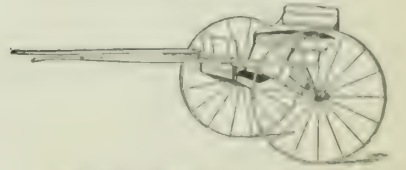
GOODS SHIPPED EVERYWHERE.



No. 58.—Price \$80.



No. 11.—1-inch axle. Price \$19.



No. 19a.—1-inch axle. Price \$25.

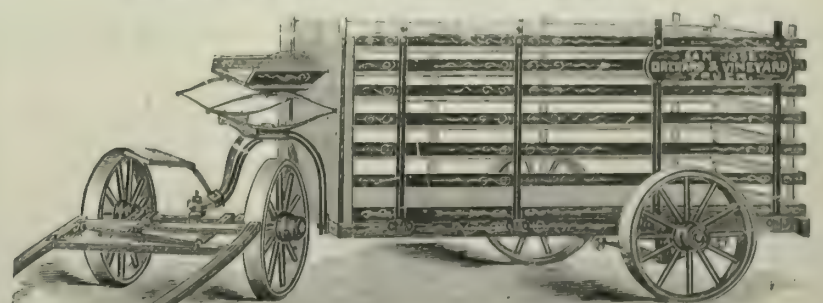
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SAN JOSE AGRICULTURAL WORKS,

San Jose, Cal.

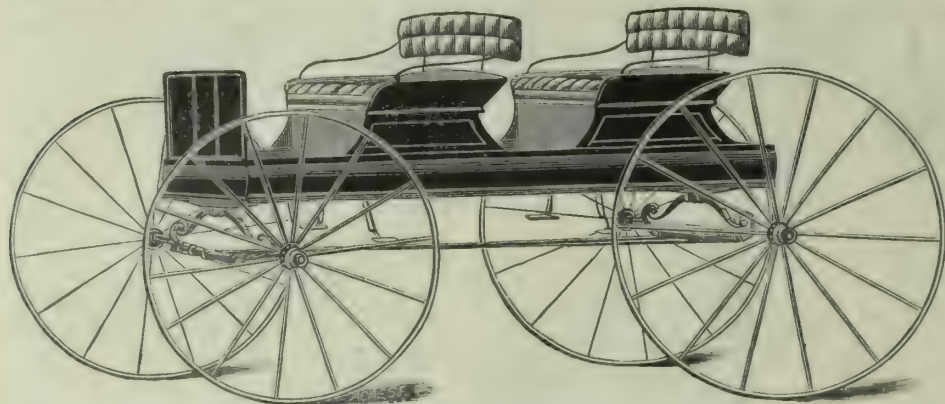
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FRUIT TRUCKS, CULTIVATORS, FRUIT GATHERERS, STEEL WINDMILLS, WAGONS.

Write for Circulars and Prices, sent free.



PACIFIC RURAL PRESS

Vol. XLVII. No. 24.

SAN FRANCISCO, SATURDAY, JUNE 16, 1894.

TWENTY-FOURTH YEAR.
Office, 220 Market Street.

Upper Coast Scenes.

The scenery of the coast region of California northward from the Golden Gate is unquestionably among the most charming of the State. It has a unique character and is as thoroughly *sui generis* as are the charms of the eastern mountain border or the southern panoramic region. It has its own trees and luxuriance of undergrowth and forest skirt and stream environment which cannot be found elsewhere. The heavy rainfall and moist summer heat give almost perennial verdure and a wealth of vegetation which the arid portions of the State cannot attain.

We have from time to time given local views from the upper coast region which displayed its grander features, and we choose at this time minor sketches which are quite characteristic even if less imposing.

The two small pictures contrast the native and the introduced forest. The first shows the heart of the redwood forest. This grand *Sequoia sempervirens* is one of the chief natural resources of the upper coast region, and the tree is as great in industry as in nature. Its fame is now spreading fast on commercial lines. For years it has been a leading timber for fine interiors at the East, and just at present it seems to be making rapid progress abroad. Cargoes of redwood have gone to England at irregular intervals for years, but there are present in this port three ships under charter to take full cargoes of this timber to British ports. This business may be expected to increase as supplies of choice finishing woods become scarcer in thickly populated countries, and it is a line in which California may long figure, for second growth redwood comes on rapidly and in great amount. Of course the primeval forest is still far from exhaustion.

The other small engraving shows the track of the S. F. & N. P. railway passing through a eucalyptus forest north of San Rafael. It shows what can be done with this foreign tree in ten or fifteen years of California soil and climate.

But the upper coast region has many valleys in which diversified agriculture is progressing more rapidly perhaps than in any other part of the State. The view shows the stock corrals and buildings of one of the farms near Hopland, Mendocino county, which comprise the country estate of A. W. Foster, president of the railway just mentioned. Mr. Foster has on his lands dairy and stock interests, orchards and vineyards, hop fields and other cultures. The upper coast region is full of such properties, and the people owning them are as well conditioned as owners of deep, rich soil well watered and covered by a peerless climate can well be.

DR. H. W. WILEY of the U. S. Department of Agriculture has returned to his post at Washington, after three weeks in California. He is gratified at the progress in beet-sugar making which is being made here. He estimates that California will make this season as much beet sugar as the whole country produced last year, that is 54,000,000 pounds. The consumption of sugar in the

Improving the Park.

The State Floral Society held an open-air meeting in Golden Gate Park last Friday, and one of the most interesting features of the proceedings was a statement by Irving M. Scott, Park Commissioner, that one of California's millionaires had put a million dollars in her will for the improvement of the park, and another lady had a fifty thousand dollar clause for the same object. These indications that the development of the park is appealing strongly to private donors are very acceptable. The attainment of such a recreation ground as the park will afford when brought to its best will be a credit not only to the metropolis, but to the whole State. There are still hundreds of acres unsubdued which court the establishment of many grand features. The Midwinter Fair will bequeath some very desirable things, although the proposition that the park should accept some of its temporary buildings seems to have been wisely declined. It is proposed that the several counties plant groves of trees to commemorate their participation in the Midwinter Fair, but this proposition of mid-summer tree planting is too much like the Goat Island scheme of a decade ago. It would be simply a waste of time and money to plant now, unless trees should be moved from pots or boxes, and even then it would require constant attention to keep them alive in the sand of the park.

WHILE our public policy seems bent upon the destruction of the American wool industry, it adds insult to injury to read that our great Australian rival in wool production is forging ahead under the most favorable auspices. Advices from Australia are to the effect that the wool clip this year is the largest ever produced. The clip is estimated at 1,860,000 bales, or 52,000 bales in excess of the previous year's clip. Most of this wool is sent to England. The money value of the clip will help out materially in Australia, though, in common with all other staples of produce the world over, the net



REDWOOD FOREST NEAR ORR'S HOT SPRINGS.



EUCALYPTUS FOREST NORTH OF SAN RAFAEL.



SCENE ON HOPLAND STOCK FARM IN MENDOCINO COUNTY.

United States is about 2,000,000 tons annually, while the total product of all kinds of sugar last year was but 300,000 tons, or about one-seventh of the quantity consumed. The world's annual consumption of sugar is about 3,500,000 tons, of which 2,500,000 tons are from the beet.

THE State Board of Horticulture had a day at the fair last week which was enjoyed by quite a concourse of people. Secretary Lelong planted an olive tree, half a dozen people took part in the literary exercises and several hundred in the social features. The exhibit by the board at the fair has been well maintained and is creditable.

prices received in the English market will be less than usual. The decline, however, is not so bad as in this country. A comparison of wool prices in San Francisco now and one year ago shows a decrease of just 50 per cent. Inasmuch as it has been clearly shown by events at Washington that the free-trade doctrinaires cannot carry their theories into practice, why should not wool be pulled into the back door of the Senate as well as the products of wealthy manufacturers who are accomplishing so much at Washington? The answer is that agriculture is not adequately represented in Congress, while other industries are represented for more than they are worth.

PACIFIC RURAL PRESS.

Office, 220 Market St.; Elevator, 12 Front St., San Francisco, Cal.

All subscribers paying \$3 in advance will receive 15 months' (one year and 13 weeks) credit. For \$2 in advance, 10 months. For \$1 in advance, five months.

ADVERTISING RATES.

	1 Week.	1 Month.	3 Months.	1 Year.
Per Line (agate).....	\$.25	\$.50	\$ 1.20	\$ 4.00
Half inch (1 square).....	1.00	3.50	6.50	22.00
One inch.....	1.50	5.00	13.00	42.00

Large advertisements at favorable rates. Special or reading notices, legal advertisements, notices appearing in extraordinary type, or in particular parts of the paper, at special rates. Four insertions are rated in a month.

Registered at S. F. Post Office as second-class mail matter.

Our latest forms go to press Wednesday evening.

ANY subscriber sending an inquiry on any subject to the RURAL PRESS, with a postage stamp, will receive a reply, either through the columns of the paper or by personal letter. The answer will be given as promptly as practicable.

ALFRED HOLMAN.....Editor
E. J. WICKSON.....Special Contributor

San Francisco, June 16, 1894.

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The Week.

Evidently the distant person must find it difficult to understand California. If he hears of current events he must reconcile the facts that within the limits of the same county, on the same day, one man is picking ripe apricots and another has to abandon his flock of sheep in the snow to save his own life; that in another county one man is packing peaches for shipment and another reports his apples and pears ruined the same day by frost; that in the same county some fields have yielded nothing through drouth, and others have their grain prostrate through rank, heavy growth, and no irrigation either. Some of these things, all of which are equally true as occurrences of the last week, must cause aspersions to be cast upon California veracity in distant parts, but we cannot help it. The well-known truthfulness of Californians may be due to the fact that they have no object in lying; the truth is good enough even for the most appalling recitals.

Our weather report this week gives an intimation of how much good has been accomplished, on the whole, by the late rains. Evidently the ugly features of a dry year have been considerably smoothed down, and even where the yield was hardly worth the gathering the moistening of the ground has facilitated summer-fallowing for another better year, which is devoutly hoped for.

The unusual atmospheric disturbances which brought us unexpected June rains, came just in time to help out the rain-makers on the great plains of the interior. It is reported that the Rock Island railway has set its employees to rain-making. Last week three of the company's rain-makers' outfits were located, one at Beatrice, Neb., another at Belleville, Kan., and the third at Mankato, Kan. The three were to operate simultaneously and to endeavor to flood all of the country lying between Phillipsburg, Kan., and Omaha, Neb. Sunday night rains fell in the vicinity of each of the stations and Monday night there was a heavy downpour, extending east to the Missouri river, which in most of the territory covered amounted to a total fall of three inches. It was a lucky strike for the rain-making business, and we expect to hear of considerable investment in such ventures on the strength of it.

THE secretary of the London Stock Exchange says that the total amount of foreign bonds held in Great Britain is \$3,820,000,000. The interest on the American proportion of this enormous holding is payable in gold, forming a factor in the present eastward drain of the yellow metal.

Wheat.

The first carload of new wheat came at the close of last week from Delano, Kern county, and was sold at auction at \$1.02½ per cbl. This is 27½ cents lower than the first new wheat has brought since wheat growing began in California, except in one instance, in 1880, when the stampede in wheat occurred and wheat was sold wholly without reference to its value.

According to all reasoning from statistical data, wheat ought to be worth more than it is now bringing. One of our city statisticians shows that we are coming to the harvesting of a short crop with reduced supplies from previous crop years. This statement is of much interest just at this time:

The usual way of ascertaining the wheat crop of this State of late years is to add the quantity exported to the quantity taken for local consumption in the form of seed and food, and deduct the receipts from Oregon and Washington and the stocks on hand. Pursuing this line, we have the following for the 12 months ending June 1st, that being the date of late years for taking account of the stocks of flour and grain in the State:

Exports 12 months, tons.....	599,171
Consumption.....	300,000
Stock June 1, 1894.....	394,351

Total.....1,293,522

Deduct

Stock, June 11, 1893.....236,795

Receipts Oregon.....50,097

Crop 1893.....976,630

Crop 1892.....1,035,460

Decrease.....58,830

The crop of 1891 was 1,085,820 tons. The crop for the previous 14 years varied from 743,000 tons in 1884 to 1,707,500 tons in 1879. The average for the past 17 years has been a trifle over 1,000,000 tons. In view of the low prices, it is possible that all of the wheat in the State on the 1st of June was not discovered, and that the actual crop was nearer 1,000,000 tons than the above analysis shows.

It is claimed also that the visible supply of wheat in this State is enough for the coming year's consumption both for food and seed, so that what we grow this year will be available for export. There is a disposition now to greatly overestimate this year's harvest. Too much credit is given to the late rains. Our city statisticians do not seem aware of the vast area which was ruined and abandoned before these late rains touched the ground. Unquestionably, much wheat was saved and improved by the rains, but the seas of land south of the central line of the State which did not make hay or even decent sheep feed should not be forgotten. It is fortunate for all that the claim can be made that we have a good supply of wheat in the State. Now, in all reason, it should be worth more than the paltry prices now prevailing, and we cannot but believe that much better prices will be realized. Wheat is altogether too low at present.

We take pleasure in presenting on another page of this issue a carefully prepared statement concerning the wheat supply regions of the world, which shows how erroneous are the current bear proclamations that the world is going to be crushed by its own wheat yield. The old Greeks first phrased the idea that all haste to kick a man that is down, and ever since civilization developed commerce, the same disposition has been manifested toward a declining product. The outcome has been that at present people vie with each other in saying bad things about wheat. This has resulted in the gross exaggerations which are pointed out by the able writer whose work we present in this issue. California is in the wheat business to stay, and we believe that the millions which have been drawn from the soil of our State by this cereal are few compared with the wheat values of the future. We have decided advantages for the cheap production of as fine wheat as the world eats, and as soon as the business gets out of its present slump, and strikes the up-grade, we shall improve our wheat and increase our yield to a degree which seems incredible at present. We do not claim to be prophets, but we will go that much on California wheat of the future.

BELIEF on the modification of climate by irrigation and forestry is gaining ground and increasing its literature. We read that M. Henri Moser has written a book in which he shows from personal observations made in Turkestan that prosperity can be brought back to that part of Central Asia by means of irrigation and the planting of trees to increase the rainfall. He expects that cotton will be cultivated there on a great scale by and by. Already the Russians have been successful in producing rain by reforesting the environs of Tashkend.

IN the report of Clarence J. Wetmore of the Viticultural Commission the wine crop of 1893 is estimated at 21,000,000 gallons, of which 17,000,000 gallons are dry wines. The vines are not yet far enough advanced to make an estimate on this year's crop. It is recommended that viticultural cafes be established in New York, Washington and Chicago for the purpose of making California wines better known.

That Butte County Joke.

There is a disposition in Butte county, at least on the part of the newspapers from which our information is drawn, to take the controversy between Horticultural Commissioner Boalt and the Board of County Commissioners very seriously. The facts seem to be as follows: Mr. H. O. Bell, a member of the Board, and acting as its agent, recently brought from another county an invoice of olive trees and planted them in the county Infirmary grounds, neglecting to submit them for inspection as required by ordinance. Commissioner Boalt heard of it and instituted proceedings against Mr. Bell just as if he were an ordinary unofficial personage. As Mr. Bell is a member of the Board of County Commissioners, and in the matter of the trees was acting as agent for the Board; as the violated ordinance is a law of the Board's own making; and since Mr. Boalt holds office by appointment at the hands of the Board, the case has, to say the least, some very unusual aspects. It is, in effect, a suit against the Board of County Commissioners, prosecuted by one of its own servants for violation of one of its own ordinances. To an outsider the humor of the thing is very striking, but at home that view of it seems not to be very highly considered.

When the charge against Bell came up for hearing, the defendant asked for a postponement until after the meeting of the Board of County Commissioners next to follow, and it was so ordered. A few days later the Board came together and played smash with the case by repealing the ordinance upon which the charge against Bell was founded; and in doing so played smash with the system for protection of Butte county against orchard pests.

The ordinance thus repealed is a very necessary and proper one, requiring that all trees imported into the county be submitted to the County Horticultural Commissioner or his deputies for inspection within twenty-four hours of their arrival. It is necessary, because no other way has been found to keep out the pests, which are carried from one district to another in consignments of nursery stock. The case in hand illustrates the value and necessity of the ordinance, for upon expert examination it was found that the trees received by Mr. Bell were infested with a scale against which the vigilance of Commissioner Boalt has until now prevailed.

Of course, orchardists outside of Butte have no interest in the immediate controversy, except to be amused at the complications in which the law, the makers of it and the enforcing officer find themselves; but they have a very active interest in the protection of Butte county orchards, and will feel very much aggrieved if the incident shall result in permanently breaking down the system which up to this time has made Butte a banner county in the matter of cleanliness of its orchards. Of course, any rigid system of inspection is more or less of a bother, but it is a sort of bother which our fruit counties cannot afford to throw over.

It is right to say that Mr. Boalt has shown himself to be an industrious and efficient county officer. His energy and integrity in his work are facts beyond question, and in two instances which have come to the knowledge of the RURAL, he has stamped out infection in its incipient stage and thus saved Butte county many times over all the cost, direct or indirect, of the inspection system. Such vigilance and efficiency is unusual and ought to be encouraged and supported. The present case is one much better suited to good-humored banter all round than to an ill-feeling, which endangers the efficiency of a really good and necessary system. It is not as if the charge against Mr. Bell—and through him against the County Board—were one involving moral turpitude. It is simply a case in which there is a joke on the County Commissioners and they will show good sense by accepting the fact in good spirit. At least, that's the way it looks from this distance.

THE committee of wine men is still at work on its plan for the good of the interest. It has framed a plan for the organization of a syndicate, with the view to control the wine business of the State. The plan contemplates capitalization to the extent of \$1,000,000. This syndicate would control production in consideration of paying fair prices to the producers. The syndicate plan is to be laid before the wine producers at district meetings to be held on Saturday of this week.

IN 1880 only 400 carcasses of fresh mutton were imported into Great Britain from Australia, and none at all from the River Plate. Year by year the quantity has gone on increasing; and summing up the annual totals, it is found that the carcasses of no fewer than 22,073,144 sheep and lambs have been imported and sold as fresh meat since 1880, and up to the end of 1893. Of that enormous quantity, 2,253,093 came from Australia and 11,824,879 from New Zealand.

From an Independent Standpoint.

The claim against the Stanford estate for fifteen millions of dollars, just presented by the United States Government through Attorney-General Olney, grows out of times and affairs so long past that it becomes necessary to run over the history of thirty years ago to understand the case in all its bearings. In 1863-4-5, to promote the building of the Central Pacific Railroad, the Government gave its endorsement to the bonds (and the interest upon them) issued by the Company—the Company being Stanford, Crocker, Hopkins, Huntington, et al.—under certain limitations as to amounts. It was a loan of credit to the Company, under its implied pledge to pay the bonds from the earnings of the road. When the road was finished the Company made some interest payments, but finally defaulted altogether, leaving the Government to meet the payments which, under the terms of its guaranty, it was compelled to do.

In the meantime the members of the Company pocketed the enormous earnings of the property and personally—as all the world knows—grew enormously rich. They built roads of their own, including the Southern Pacific and its many branches, largely out of their profits from the Central Pacific which they loaded with debt and made practically bankrupt. It was looted systematically in the interest of the private railroad properties of its stockholders, the Government being left, under the responsibility of an endorser, with no recourse, excepting upon a property so loaded up with preferred indebtedness that the security amounts to nothing. How all this was done is a story very interesting in itself, but not essential to the case in hand. The fact which now claims attention is that within a few months the bonds of the Central Pacific Railroad Company, to the amount of sixty millions of dollars and upward, will fall due; that no provision has been made by the Railroad Company for their payment; that the railroad property upon which these are based is so loaded up with preferred debts as to be utterly worthless as security; that the Government as endorser must pay the money. The obligation thus falls upon the Government, not because the original builders could not pay, but because they did not; because instead of using the funds of the Company to pay its debt, they diverted them to their own private uses.

Hopkins died worth vast millions, which were distributed in accordance with his wishes. Crocker died also enormously rich, and his property was divided among his heirs. Stanford died equally rich, and his property is about to be distributed. And now the Government steps in with a protest, claiming that no provision has been made for paying the bonds of the Central Pacific Company, soon to fall due, and claiming further that such part of the obligation as rested upon the stock held in that Company by Stanford is a legitimate charge upon his personal estate. The theory of the Attorney-General is that each of the stockholders in the road at the time of issuing the bonds is, under the laws and Constitution, primarily liable for the payment of these bonds, given in the aid of construction of the road, together with accrued interest. Stanford's proportion under this theory is about fifteen millions of dollars and the Government's claim against his estate is fixed at that amount. The soundness of this claim in common sense and in morals is beyond question; it remains to be seen what the courts will say of it as a matter of law. The claim will, of course, be resisted with all the resources which money can bring to the contest. The Hopkins and Crocker heirs have their part and cannot be reached; but Huntington is still alive and still holds his thirty or forty millions, and is therefore in the same boat with the Stanford estate. He will, of course, join in the fight. No man can guess the outcome, but it is hardly to be expected that the diverted millions will be recovered. It will be something, however, if the fact of the theft—so long obscured by the brilliancy of its results and by the melodramatic beneficence of one of the principals in the act—shall be demonstrated before the world and held up to the scorn of honest men.

This claim made against the Stanford estate, so notable in many ways, has not escaped attention at Washington and was the subject of an earnest speech early in the week by Senator Hoar of Massachusetts. After a warm eulogy of the late Senator Stanford, eminently creditable to his heart, if not to his observation and judgment, Mr. Hoar proceeded to justify the ways in which the Stanford fortune was created by the uses to which it had been dedicated. This judgment, in spite of its very extraordinary logic is a common one; and since it is so, it is right that all the facts should be known—right because it is a serious injustice and wrong to make things essentially bad seem worthy. It is true that when he could no longer make personal use of his millions Mr. Stanford gave them to a noble public purpose; but he contrived to do it in a way to combine

with benevolence and paternal affection the gratification of a vindictive personal hatred. In 1880 or 1881, he was nominated by the then Governor (now Senator) Perkins for regent of the State University, but was rejected by the Legislature. He vowed that he would be revenged; and the method of his revenge was the foundation of a rival school, the Palo Alto University, dedicated to the memory of his dead boy. The act was in keeping with the ways in which the fortune was made; with the character and career of the man. We submit that it was not an act which entitles the giver of it to a place among the immortals.

In their late convention at Sacramento the Populists named a candidate for the United States Senate for whom Populist members of the Legislature will be bound to vote, just as Presidential electors are bound to vote for their party Presidential candidates. The plan is by no means new, having been followed from time to time by both the old parties. The most famous precedent was in 1858, when Douglas and Lincoln were named by the Democratic and Republican conventions, respectively, of Illinois. But there are more recent instances. Three years ago the Democrats of Illinois nominated Gov. Palmer for Senator and subsequently elected him. Two years ago the Republicans of Massachusetts did the same thing in the case of Henry Cabot Lodge. But the practice remains unusual; and it seems strange that it should be so when it is considered that it affords a neat and practical way to accomplish a reform for which all parties are calling, namely, the choice of Senators by popular vote. Under any possible plan of popular election, the choice would, practically, be restricted to selection between the candidates of the several parties. Thus, the party conventions would select the men to be voted for just as they do now in the case of the Governorship. The difference between voting directly for a particular candidate, and of voting for Legislative representatives bound to give him support, is simply a difference in method. We employ the latter plan in the matter of the Presidency and with entire satisfaction; and there is no reason why it would not work equally well in the choice of Senators. Of course, for obvious reasons, our political masters—the politicians—prefer to leave the selection of Senators to the Legislature; but, as we view it, no good interest is served by it and it would be far better to choose candidates in general convention. It would allow the citizen to give or withhold his vote for Senator in making up his Legislative ticket; it would prevent the election of mere money-bags and corruptionists, who would not dare appeal to the people; it would practically relieve the Legislature of a duty which now confounds and corrupts it. In short, it is a plan commended by every consideration upon which the choice of Senators by popular election is urged.

The Oregon election was a clean sweep for the Republicans. They elected their full State ticket, a strong majority in the Legislature and the entire Congressional delegation. This result substitutes a Republican for a Democrat-Populist (the famous Penoyer) in the Governor's chair, and assures the re-election of Dolph to the U. S. Senate. It puts Oregon again in the list of surely Republican States and is a severe blow to Populism, which had hopes—and apparently reasonable hopes, too—of making Oregon its own. The dominating issue was the tariff. Oregon is a heavy producer of wool, lumber, shingles, hops, hides and fish, and is just coming to be a heavy producer of fruits; and its material welfare is, therefore, closely bound up in the policy of Protection. It voted for the tariff with more regard to considerations of local interest than to ordinary political motives. Although it is ten days since the election, the returns are not yet reported in detail, so we have only partial information as to the Populist strength at the polls. Enough is known, however, to indicate a Populist vote of about twenty or twenty-one thousand in a total vote of about eighty thousand, or about twenty per cent of the whole. This is a very considerable falling off as compared with two years ago, Oregon having cast 26,875 votes for Weaver. The Populist strength has apparently declined, but it remains quite sufficient to give the party a distinct standing in the political organization of the State. It has a following which in combination with that of either of the old parties would make a majority—a fact of great significance in connection with the future of things in Oregon.

THE next three weeks will probably complete the duration of the Midwinter Fair. Some of the counties propose to make notable fruit displays. Placer county has done most thus far in early fruits. For several weeks past shipments of strawberries, raspberries, cherries and apricots have been displayed, and now the peaches and blackberries are ready. Placer county Alexanders were the first lot of ripe peaches received by any county at the exposition.

Fruit Exchange Bulletin.

The bulletin of the State Fruit Exchange for the current week (No. 8, June 13th) has little to say about crops or markets, being devoted mainly to a study of the dried fruit situation, given below in full. Concerning the market it says:

Transactions in fresh fruit for drying or shipping are mostly confined to sales of orchards, of which the largest reported is one of 120 acres of two to four-year-old trees in Tulare county to Chinamen at \$108 per acre. Such sales on offers by the ton as are reported are at about \$20 to \$25 for apricots, peaches and pears, taking the run of the orchard. The great majority of growers expect to dry, and are likely to do so, as growers and buyers' views show no signs of agreeing. In dried fruits, crop of 1893, there is no "market," although existing stocks are doubtless moving slowly at about previous quotations. No transactions in new crop are yet reported, although the opening prices of apricots at least are by this time usually well settled. Both growers and buyers are evidently studying the situation more carefully than ever before—a fact which will tend to give stability to the market when once business starts.

The Dried Fruit Output of California.

By the courtesy of the Southern Pacific Company we are enabled to give this week an instructive table comparing the output by crop years, which extend substantially from July 1 to June 30, with the figures as heretofore published by the State Board of Trade for calendar years. We also give below the detailed tables from which this summary is made up. These tables include only the shipments by the S. P. Co., and exclude those sent by sea and the Southern California railroad, which we have not obtained by months and which do not separate prunes from other dried fruits. The figures, however, include all shipments by the Santa Fe route, except those originating on the Southern California railroad, and comprise substantially nine-tenths of the dried fruit shipments. There were shipped out of the State for the calendar year 1893 only 3760 tons of raisins, 3298 tons of other dried fruits, and 7058 tons of dried fruits including raisins, not covered by this table, as may be seen by comparing the figures of the following table with those compiled by Gen. N. P. Chipman and published by the State Board of Trade:

FRUIT.	CALENDAR AND CROP YEAR SHIPMENTS COMPARED.		
	1891.	1892.	1893.
Prunes, tons of 2000 pounds.....	11,598	13,166	9,424
Raisins, tons.....	18,680	19,267	21,927
Other dried fruits, tons.....	14,106	15,768	14,288
† Total, tons.....	44,390	50,576	48,805
* Except grapes and figs. † Including prunes, raisins, grapes and figs.			
CROP YEAR SHIPMENTS COMPARED.			
Prunes, tons of 2000 pounds.....	9,515	9,424	20,428
Raisins, tons.....	21,927	23,544	36,634
Other dried fruits, tons.....	14,288	13,028	15,351
† Total, tons.....	48,805	48,679	71,554
* Except grapes and figs. † Including prunes, raisins, grapes and figs.			
CROP YEAR SHIPMENTS COMPARED.			
Prunes, tons of 2000 pounds.....	9,424	20,428	26,413
Raisins, tons.....	21,927	23,544	37,056
Other dried fruits, tons.....	14,288	13,028	16,094
† Total, tons.....	48,805	48,679	81,114
* Except grapes and figs. † Including prunes, raisins, grapes and figs.			

There were shipped of the crop of 1893, 259 tons, or 21½ carloads of dried figs, as against 70 tons for the two preceding years combined.

A study of this table, involving the experience of three years, except May and June of the present year, enables us to note a few points of value.

Raisin grapes are early and constant bearers. We know that the acreage is not increasing by planting, and it is quite possible that its decrease by uprooting and abandonment is equal to the increase by age. This, however, is hardly probable, and if this season should prove as favorable as last, which is not now likely, some increase of output over that of the crop just marketed might be expected. From Gen. Chipman's tables we ascertain that our shipments of raisins by all routes during the last six months of 1893 were 32,871 tons. Since January 1st the S. P. Co. has shipped 8107 tons; 45 tons have been shipped by sea. If we assume 800 tons to have been shipped since January by the Southern California railroad, and 1000 tons left over (about double usual amount at this time of the year), we have a grand total of 42,823 tons, or 85,646,000 pounds, or 3568 carloads of 12 tons, as the real crop of 1893. It will be a month before any reliable estimate can be made as to whether the coming crop will be greater or less.

In regard to prunes, we are unable to get data for an estimate as close as we can make of raisins, for the reason that, except by the S. P. Co., prune shipments are not kept separate from other fruits. The S. P. Co. returns, however, include all but those shipped by the Southern California railroad and by sea. The total shipments of dried fruits from southern California by both lines, in the calendar year 1893, were 1257 tons, of which not more than one-third could have been prunes. If we assume 400 tons of prunes as the crop of 1893 from southern California, and that the shipments were equally divided between the two lines, we shall not be far enough wrong to seriously affect the result. We may also estimate that 75 tons of the 178 tons of dried fruit shipped by sea were prunes, and that there were 200 tons left over May 1. Making these additions to the 25,413 tons moved by the S. P. Co. since July 1, 1893, and we have a grand total of 25,888 tons, or 51,776,000 pounds, or 2157 carloads of 12 tons, for the prune crop of 1893.

In considering the probabilities of the coming crop, we have first to deal with the question of increased acreage. In 1892, the report of the State Board of Horticulture gave the acreage of non-bearing prunes as nearly equal to that in bearing. Assuming the two acreages as equal, and that the non-bearing represented all the acreage under five years old, and that

one-fourth of this new acreage comes into bearing each year, we can say roughly that the annual increase of acreage is 12½ per cent of the total acreage in 1892, and the increase of 1894 over 1893 may be 11 per cent. It cannot be more if there is any reliance to be placed on statistics gathered by the State Board at considerable expense, and will not nearly make good the deficiency in the crop in the largest prune districts. In spite of the increased acreage, there must be a decided falling off of our prune crop this year, as there was in 1892 after the full year of 1891.

No reliable estimates on dried fruit crops other than prunes and raisins can be made, not only because the shipments of the different varieties are not kept separate, but because the amounts dried depend largely on the canning and shipping demand. In regard to increased acreage, however, by the same reasoning that is applied above to the prune acreage, we find the average increase on apricots to be 8½ per cent of the total acreage of 1892, and on peaches 10 per cent, or about 7½ and 9 per cent respectively of the acreage of 1893.

By referring, however, to the items of "other dried fruits" in the above table, and to that which includes all fruits and raisins, it will be seen that, while there are certainly as great irregularities in the annual bearing of other fruits as of prunes, yet something or other always steps in to at least partly fill the gap in the dried fruit output. The combined acreage of apricots and peaches compared with that of prunes is about as 85 to 50, and the crop of those fruits is this year large enough, in connection with the pears and other fruits, and after fully supplying the canning and shipping demand, to fully make up the deficiency in prunes. These facts, in connection with what we said last week as to our probable customers, ought to impress all growers with the importance of taking every pains to produce dried fruit of the very best quality, and then packing it honestly. Good fruit well graded and honestly packed will pay best.

In making a study of marketing dried fruits, it is proper to consider that the principal consumption begins after fresh fruits become scarce and dear in Eastern markets, and continues until new fruits come in, while the following tables show that our principal shipments are before January—October and November being the largest shipping months. It is for us to consider whether or not our interests will be served by arrangements and methods tending to distribute shipments over a greater period.

As our output has increased we have been annually more and more forcing the market with goods consigned under heavy advances. There is a general agreement that this, at least, is unbusinesslike and disastrous. It is the result of financial pressure felt by growers. This forcing has resulted in very large sales, but at prices, in many cases, below cost to growers. It is a question for us to consider, however, whether, if we had been able to hold them back for better prices, the market would not have been supplied with the surplus of Europe and our own goods left on our hands. The Greek vineyardists, whose currants cause our raisin growers so much distress, are themselves reported as made nearly bankrupt by the loss of so much of our market, and to be leaving their vineyards uncultivated. The rise in prices of our prunes a couple of months since at once started shipments from France.

It is necessary for our growers to understand the competition to be expected and not to expect impossibilities from their orchards or their salesmen. But there is no need for discouragement. In a contest for supremacy our virgin soil, favorable climate and intelligent methods give us advantages that cannot well be overcome. Organization, economical methods of preparation and marketing, and, above all, the most careful attention to the quality of our output, should and doubtless will ensure fair living prices for all and handsome profits to the most skillful. The proper method of procedure is evidently to ascertain first our own probable output, next the output with cost of production and delivery of our foreign competitors, and finally existing markets and the means of extending them. The Exchange, to the extent of its ability and means, is endeavoring to ascertain these facts, to the end that growers may act intelligently. The approximate value of our products being then known, they will form a proper basis for necessary advances at home, our goods can be kept from unnecessary and unreasonable competition with each other, consignments stopped, and the prices for the season obtained on f. o. b. sales.

The following tables show in detail the movement of our dried fruits by months for the past three years, excluding those originating on lines of the Southern California railroad and those shipped by sea. These items would not materially change the proportions of the fruit shipped before and after New Years. As San Jose is the largest single shipping point for our principal dried fruits, except raisins, we have shown the shipments from that station separately. It will be noted that while the Santa Clara valley is almost a controlling factor in prune shipments, its influence on other dried fruits is much less:

B. P. SHIPMENTS OF PRUNES BY CROP YEARS, IN TONS.

	1891.	1892.	1893.
July.....	1	5	2
August.....	303	67	28
September.....	4,198	2,001	1,487
October.....	6,093	4,964	10,249
November.....	1,651	1,497	5,831
December.....	612	490	2,036
January.....	377	290	1,095
February.....	377	401	1,032
March.....	496	195	1,699
April.....	212	80	2,269
May.....	127	116	.....
June.....	6	18	.....
Shipped from San Jose.....	13,166	9,224	25,413
Per cent shipped before January 1.....	86 p. c.	88 p. c.	75 p. c.
Per cent shipped from San Jose.....	85 p. c.	88 p. c.	75 p. c.

S. P. SHIPMENTS OF DRIED FRUITS OTHER THAN GRAPES, FIGS, RAISINS AND PRUNES, BY CROP YEARS, IN TONS.

	1891.	1892.	1893.
July.....	750	1,408	357
August.....	1,367	2,567	1,819
September.....	2,601	3,575	4,848
October.....	3,406	1,958	4,196
November.....	3,398	1,077	1,896
December.....	1,172	622	1,114
January.....	570	508	674
February.....	766	686	632
March.....	744	383	789
April.....	440	118	449
May.....	394	81	.....
June.....	178	95	.....
Shipped from San Jose.....	15,769	13,028	16,094
Per cent shipped before January 1.....	80 p. c.	86 p. c.	84 p. c.
Per cent shipped from San Jose.....	24 p. c.	8 p. c.	23 p. c.

S. P. SHIPMENTS OF RAISINS, BY CROP YEARS, IN TONS.

	1891.	1892.	1893.
July.....	128	86	48
August.....	31	107	38
September.....	1,301	927	793
October.....	7,156	7,183	13,616
November.....	5,563	7,373	11,013

December.....	2,026	3,243	8,512
January.....	1,336	1,762	2,292
February.....	544	1,478	2,296
March.....	288	898	1,307
April.....	376	321	2,212
May.....	309	130	.....
June.....	211	96	.....

Per cent shipped before January 1.....84 p. c. 80 p. c. 70 p. c.

SHIPMENTS OF ALL DRIED FRUITS, INCLUDING RAISINS AND PRUNES, IN CROP YEARS, BY TONS.

	1891.	1892.	1893.
July.....	879	1,589	439
August.....	1,398	2,836	1,434
September.....	4,938	7,688	7,289
October.....	16,932	13,890	28,884
November.....	14,502	10,256	18,857
December.....	6,021	4,460	6,788
January.....	2,650	2,634	4,167
February.....	1,771	2,065	4,171
March.....	1,830	1,518	4,012
April.....	1,029	587	5,123
May.....	834	367	.....
June.....	392	229	.....
Tons.....	50,676	48,679	81,114
Pounds.....	101,152,000	97,358,000	162,228,000

Per cent shipped before January 1.....84 p. c. 83 p. c. 71 p. c.

We commend the above tables to the careful study of all growers. When the returns for May and June of this year are in we will publish the corrected totals.

Crop Condition and Outlook.

Following is a synopsis of the crop bulletin for the past week issued by Director Barwick, of the State Weather Service:

The average temperature for the week ending June 11th was: For San Francisco, 56°; Eureka, 54°; Red Bluff, 64°; Sacramento, 62°; Fresno, 60°; Los Angeles and San Diego, 62°.

As compared with the normal temperature, there was a heat deficiency at San Francisco of 4°; Eureka, 1°; Red Bluff, 9°; Sacramento, 6°; Fresno, 13°; Los Angeles, 5°; and San Diego, 2°.

The rainfall during the week was for San Francisco nothing; Eureka, .60 of an inch; Red Bluff and Sacramento, a trace; Fresno one inch, and nothing at Los Angeles or San Diego.

The cool weather has greatly benefited all summer crops, but is retarding very much the ripening of fruit and the curing of hay. The excessive and unprecedented rainfall in the San Joaquin valley has injured considerable hay, and along with the wind and sandstorms has injured fruit by blowing it off the trees. The fruit crop from one end of the State to the other will be a heavy one, except in Modoc, Lassen and parts of Siskiyou counties, where late frosts killed the buds. Late grain has made a wonderful improvement in the central portion of the State, and in places where ripe for harvest the ground is too wet to bear the combined harvesters until dried out by sunshine and northerly winds. The grape crop is reported from poor to fair and good, owing to the portions of the State from which the reports come. The honey crop will be much smaller than usual in southern California. Highest temperature, 95° at Huron, Fresno county, and lowest 35°, at Yreka, Siskiyou county.

MODOC (Adin)—This is a pretty wet spring and crops are growing nicely. The yield of grain will equal the best ever raised here.

LASSEN (Susanville)—The weather favorable for the growing crops and the grain.

SISKIYOU (Ager)—Good growing weather for grain, but warmer needed for corn and garden truck.

TRINITY—Rainfall for the past week 1.45 inches, with a total of 47.28 inches for the season. (Hyampome)—Grain is looking fine and having has commenced.

SHASTA (Big Bend)—All crops except corn are doing well, and grass on the range was never better.

TEHAMA (Red Bluff)—Temperature below normal and precipitation above, with not enough sunshine for haying, but fine for fruits and summer crops.

HUMBOLDT (Eureka)—All crops will be large in the county. Pasture is good, both in the valleys and foothills.

LAKE (Upper Lake)—The rains have damaged the hay crop, especially alfalfa, all of which was cut and very little hauled from the fields.

PLUMAS (Quincy)—A large hay crop is a certainty. (Sierra Valley)—Crop prospects very good, as the recent rains will insure a large yield.

BUTTE (Chico)—Prospects continue good for crops of all kind. The rains have not damaged hay as much as at first expected.

GLENN (Willows)—Winter-sown grain greatly benefited by late rains.

SUTTER (West Butte)—Sunshine and warmth needed, as nearly all the grain is mildewed. (Yuba City)—The cool, rainy weather, while damaging to hay that was cut, has been excellent for maturing the grain, and throughout the county there is a very promising outlook.

YUBA (Wheatland)—The June rains completed the ruin of a good deal of hay, and what is saved will be of poor quality. The cool weather is of great benefit to growing grain, which now promises to be of a superior quality, but the yield will be light, especially on upland.

PLACER (Newcastle)—The cool, showery weather the first part of the week has had no injurious effects other than retarding fruit ripening. Cherry crop a good one. Early peaches coming into market. (Dutch Flat)—The recent late frosts have killed the entire apple and pear crop through this section and Towles.

AMADOR (Shenadoah Valley)—The late rains nearly ruined hay that had been mowed, but the crop is the best one in several years.

SACRAMENTO (Sacramento)—The crops are being greatly benefited by the drying winds and sunshine of latter part of week. (Walnut Grove)—The shot-hole fungus badly affecting the whole apricot crop. Alexander peaches entirely reserved for outside shipments. Pears and plums looking well; thinning about over. Eastern shipments of plums and apples commenced; beans, potatoes and grain growing fine.

YOLO (Winters)—The rain has injured the apricot crop—that is, such of it as is about ripe—some of them being burst open; the wheat crop greatly benefited. Summer-fallow is standing up well, and is only lodged in spots. The yield of late-sown grain will be doubled in consequence of the rain. The wheat crop will not be ready to harvest for two weeks.

SOLANO (Vacaville)—Apricots, peaches and plums are being shipped in large quantities. Prospects are good for a successful season in the fruit line.

COLUSA (Colusa)—The late rains have been worth thousands of dollars to Colusa and Glenn counties. This county will have far better crops than last year in most of her territory. Summer-fallow is fine and much of the winter-sown will give a good yield.

SONOMA (Healdsburg)—Apricots very abundant, fully one-third the crop having to be culled from the trees to insure the perfection of the rest. (Sebastopol)—Cherry crop benefited by the rains. Hops are in fine condition and making a fine growth.

SANTA CLARA (Santa Clara)—There will be a fine crop of hay this year, and the quality promises to be of the best.

SAN JOAQUIN (Acampo)—Rain has improved some fields of grain, while in others there is considerable rust, and much damage may be expected from that cause.

STANISLAUS (Turlock)—The week has generally been beneficial to growing crops. The rains damaged the hay somewhat, and some rye that had been cut and was not in the stack. Rye-harvesting is in full swing. (Newman)—There was not enough rain to damage hay or lodge grain, the only effects being beneficial in helping grain to fill out. (Oakdale)—Hay damaged by the late rains and some grain lodged. All other crops are looking remarkably well.

FRESNO (Reedley)—Considerable of the crop of grapes has fallen. Harvesting about begun. Rainfall 1.80 inches. (Fowler)—Over an inch of rain fell during the fore part of the week, damaging hay, but not as much as at first expected. Early grain damaged by wind and rain. Late grain filling well. Many vineyards damaged by the wind knocking off the bloom. Tree fruit coming on finely. (Sanger)—Weather cool and cloudy, with .50 of an inch of rain. Much damage to hay out and slight damage to that in stacks, and slight damage to fruit and grapes on account of being knocked off. Grain injured by being lodged, and which is ripening slowly on account of the cool weather. (Fresno)—Sand storms and rains have done much damage to grapes, fruit and hay. Heavy snows in the eastern portion of the county caused much loss to sheep.

KINGS (Hanford)—Rains damaged hay considerably, but have improved the prospects for a large grape crop. TULARE (Tulare City)—Rains spoiled some hay, but helped summer crops. (Visalia)—Large quantities of hay wet badly, but not much ruined. The storm will be an advantage rather than a detriment.

MONTEREY (Gonzales)—The weather for the last two or three weeks has been cloudy, with occasional showers. While being very bad for the hay, it is of great benefit to growing crops. The indications now are that there will be considerable more grain harvested than was expected three weeks or a month ago.

SAN LUIS OBISPO (San Luis Obispo)—The rainfall of .30 of an inch has damaged considerable hay, but has been of great benefit to all summer crops. An excellent stand of beans reported from the bottom lands and fair crops on the uplands. Pastures much benefited by the showers and continued cool weather. Dairy cows doing well and keeping healthy.

SANTA BARBARA (Los Alamos)—Wheat in places stands over three feet high, and is filling nicely. The damp, cool weather has made vast changes in the crop outlook. (Santa Maria)—The rains have done no damage in this section. Heavy winds have dried out and counteracted the effects of the rains. Crops about the same as last report. Grain will be light, hay good but short, and beans and corn well started, but growing slowly.

VENTURA (Santa Paula)—The last two days have been warmer weather—too much so for the growth of beans. LOS ANGELES (Los Angeles)—Days clear and mornings cloudy and damp. Warm weather needed to ripen fruit. Corn and beans somewhat injured by high winds. Highest and lowest temperatures, 77 and 49 deg. Rainfall, .10 of an inch. (Pomona)—Owing to continued fogs, sugar beets are making wonderful growth and promise a very large tonnage.

SAN BERNARDINO (Chino)—The beet crop growing vigorously. (Redlands)—Apricot orchardists complaining that the cold weather is retarding the ripening of fruit and that the entire crop will ripen at once. (Rochester)—The farmers are happy over the prospects for one of the largest yields of fruits and raisins they have yet had; and this being a dry year the outlook is brighter, owing to the abundance of water for irrigation purposes.

RIVERSIDE (Arlington Heights)—The continued cool weather is very favorable for planting orange and lemon trees, but is still retarding the second growth. (San Jacinto)—In the mountain sections there will be considerable grain, and in some places the hay crop will almost be equal to last year. SAN DIEGO (San Diego)—The honey crop will be medium in the back country, but poor along the coast, on account of extra dry weather. Feed and water and quite plentiful in the mountains, but on account of the dryness there is more dust than usual, and the honey will therefore be a light amber, with very little white.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, June 13, 1894, are from official sources, and are furnished by the U. S. Weather Bureau expressly for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total rainfall for the week.	Total seasonal rainfall to date.	Total seasonal rainfall last year to same date.	Average seasonal rainfall to date.	Maximum temperature for the week.	Minimum temperature for the week.
Yuma.....	2.17	1.65	3.16	98	60	.....
San Diego.....	4.98	9.46	9.83	70	50	.....
Los Angeles.....	6.71	26.23	18.26	78	46	.....
Fresno.....	14	8.42	11.10	80	48	.....
Sacramento.....	16.33	23.95	18.74	78	50	.....
San Francisco.....	18.30	21.72	24.49	68	48	.....
Red Bluff.....	T	21.77	32.32	23.66	84	46
Eureka.....	.64	54.32	49.01	46.10	60	42

A Fruit-Handling Corporation.

The Niles Co-operative Fruit Association has been incorporated. The principal place of business will be at the town of Niles, and the objects of the incorporation will be the handling of fruits—receiving, stoning, preparing for market, buying and selling fruits of all kinds.

The corporation is to run fifty years and the number of directors are seven. The directors for the first year are Joseph Shinn, H. J. Tilden, Joseph Tyson, G. E. Chittenden, William H. Ford, C. B. Overacker and T. J. Sullivan, all of Niles.

The amount of capital stock is \$30,000, divided into 2000 shares of the value of \$15 each. There has been subscribed \$2610.

HORTICULTURE.

Relative Value of Olive Varieties.

The latest publication of the University Experiment Station concerning olives, by Mr. A. P. Hayne, from which we have already given several extracts, contains elaborate tabulation of the results of chemical analyses of the olives used in the experimental oil making at Berkeley and of the resulting oils. The reader who desires this detailed information can secure a copy free by addressing Prof. Hilgard at Berkeley. The deductions from the tables are best fitted to enlighten the general reader, and we give them as follows:

Examination of the analyses of olives and olive oil from different localities brings out the importance of a close study of soil, climate and varieties before undertaking to plant an olive orchard. It will be seen that there are varieties that yield a very high percentage of oil and others that do not. Further, it appears that the same variety, on different soils, etc., will vary 20 per cent in the amount of oil yielded, while the crop on each may, to all appearances, be equally heavy. Thus the Rubra, in one place, contains as much as 34.90 per cent of oil, and in another locality has but 14.85 per cent—a difference sufficient to ruin an olive-grower in a few years.

In the eleven varieties of which more than two samples were received, the differences between the maximum and minimum of oil in fresh fruit varies very greatly; thus, while in the Rubra the difference is 20.05, in the Uvaria it is only 4.20—thus showing for the latter a greater uniformity in oil percentages for the State at large. The following list comprises the commonest varieties now growing in California, and the table is arranged in the order of highest to lowest variations between maximum and minimum oil percentage:

Variety.	Variation.
Rubra.....	20.05
Oblonga.....	14.21
Redding Picholine.....	13.10
Nevadillo Blanco.....	13.06
Mission.....	11.09
Pendulina.....	10.00
Præcox.....	7.45
Atro-rubens.....	6.50
Manzanillo.....	5.10
Nigerina.....	5.00
Uvaria.....	4.20

The table shows what a matter of "guess work" the selection of varieties for orchards in the State has been thus far, and emphasizes the importance of the work undertaken by the Agricultural Experiment Station in bringing out all of these various characteristics.

It would not be safe to pass judgment too hastily, taking into consideration the relatively small number of analyses at our command, yet it will at once be seen that there are varieties that seem to be better adapted for general planting than others. Take, for example, the Mission. This is the oldest variety cultivated in California, and we have examined 13 samples; yet it stands as a very good oil variety, never falling below 19.20 per cent of oil, and an average of 30 olives in 100 grams (144 in one pound). This fact, taken with the experiments in the olive room, show it to be one of the pre-eminently safe varieties to plant. It gives an oil of very good quality, and one that keeps its marketable qualities in an exceptionally good manner.

What is said of the Mission can be said of the Manzanillo, which, while being a trifle larger than the Mission, is a more regular bearer, and fully as hardy.

The Nevadillo Blanco, while a smaller olive than either of the other two, is, by reason of its high average in oil and its regularity as a bearer, one of the olives of the future.

The Redding Picholine shows itself unworthy of the place it has in the olive plantations of the State. Though it is a good bearer and a vigorous grower, it is the smallest olive of any of the varieties thus far found in California. It has more pit and less flesh than any other variety. Next to the Rubra, it varies more than any other in the above table, and the oil-room experiments show it to give an inferior product. Of all the oils made this year in the Station oil room, that of the Redding Picholine was the "greasiest" and the first to solidify, assuming the appearance of partly melted, yellowish lard.

The Uvaria was a disappointment, the general impression being that it was a very good oil variety, so far as regards quantity.

The Rubra, in spite of its uncertainty as to richness in oil, is a good variety when well adapted to its surroundings. The Rubra oil made at the Station was of a very high degree of excellence, and stood cold weather very well.

The publication by Mr. Hayne gives for the first time analyses of the leading Italian varieties, *i. e.*, Grossajo, Razzo, Frantojo, Correggiolo and Morajolo. From the very high yield of oil, when we take into account that the Mission on the same soil gives but 19.20 per cent of oil, we are led to conclude that these new varieties will be of great importance in the future.

Further comment is not deemed wise at this time, owing to the fact that there are too few varieties of which samples were received from more than one locality. In another year, with the co-operation of the olive-growers of the State, it will be possible to discuss more fully the results. They are given to the public as they stand, as the only data existing at this moment.

The thanks of the Department are extended to Messrs. Alfred Wright and J. S. Calkins of Pomona, J. Rock of Niles, Hatch & Rock of Biggs, and Louis Mel of Livermore for their generous donations of samples of olives in lots large enough to be made up into oil.

Thompson's Navel Orange.

TO THE EDITOR:—In your last week's issue you referred to this orange and gave a description of the processes by which it was produced, and you suggest that there is a field for inquiry as to the why the new type of the orange is produced by the repeated blending of wood by means of repeated budding of different kinds of the orange.

I take the liberty of suggesting, to start with, that the fruit is part of the tree instead of its product, as commonly pronounced. If we now, while the fruit is well formed, take a Bartlett pear from the tree and cut it in halves from calyx to stem inclusive, we can plainly trace the woody appearance of the stem running through the whole length of the fruit; and if it be true "that everything grows on what it feeds," then it is evident that a blending of wood in the tree will carry its resultant characteristics through the fruit. And if it be conceded that a blending of diverse qualities of fruit can be made by blending the buds which belong to the different varieties, it is perfectly reasonable to suppose that a repetition of such budding of the new formation will still further vary the type of fruit produced by the first budding as shown by the orange referred to, and there seems to be no limit in the repetition of this process.

It is no new thing in horticulture to blend known varieties of fruits and flowers by means of budding and grafting. I have in my orchard here a tree bearing apples that are partly sweet and partly sour. The original tree from which I secured grafts is in the orchard of Mr. Eastman, near Eatonsville, a few miles north from Little Falls, Herkimer county, N. Y., and is said to have been produced in precisely the same way that Mr. Thompson produced his first blending of the two varieties of orange by way of splicing their buds. The apple tree I refer to must be 60 to 80 years old, or upward. I brought home with me a quantity of the fruit of this tree about 20 years ago and presented samples to the members of Santa Clara Horticultural Society, and their qualities were recognized. S. Harris Herring of San Jose, then editor of the *Agriculturist* of that place, gave this fruit and its characteristics special notice in his paper. The fruit is ridged, containing distinct sunken parts, forming lines between the mild acid portions and the sweeter parts of the fruit. My recollection of the opinion expressed is that the acid portion of the fruit owed its paternity to the Rhode Island Greening. The apple is inclined to be square from stem to calyx, so there is no mistaking the location of the different qualities of fruit indicated by the depressions referred to.

POLLINATION EXPERIMENTS.

In this connection I desire to allude to Bulletin 5 of the Division of Vegetable Pathology of the Department of Agriculture, of which you gave an outline in the *RURAL PRESS* of May 5th. Any one who desires to study the variation of fruit by cross-pollination should apply for Bulletin 5. The following is an extract from the summary by Merton B. Waite, special agent:

"The foregoing series of experiments furnish repeated evidence of the value of cross-pollination in pears for fruit production. It was found in more than half the varieties worked upon that they were either entirely incapable of setting fruit when limited to their own pollen or so nearly so as to show them to be unsatisfactory as self-fertilizers. Careful hand-pollinations, in which different kinds of pollen have been applied to the same kinds of pistils, under the protection of paper bags, have shown the decided advantage of cross-pollination, and have given results substantially agreeing with the simple bagging experiments. Not all the varieties showed this deficiency in producing fruit with their own pollen; some were quite productive under its influence. Even with these varieties, self-pollination seemed to be less certain than cross-pollination, and was less satisfactory some seasons than others. The results have shown that the varieties belong more or less distinctly to two classes—self-sterile and self-fertile. Absolute reliance should not be placed in any particular one of the statements in the synopsis; but where work was duplicated several times and repeated in four different places, and the general result continues the same, the conclusion finally becomes assured."

These conclusions are of importance to California fruit-growers, and I trust their publication may lead to wider local observation and experiment. I. A. WILCOX, Santa Clara, June 11th.

Pruning the Prune.

The latest contribution to the rapidly accumulating literature on how to prune the French prune is by Frank Buxton, formerly of Santa Clara county, and now a resident of Tulare. In answer to a question, Mr. Buxton gives the *California Cultivator* his experience and observation on the subject as follows:

Since the commencement of the prune industry in the Santa Clara valley, every method of pruning that could possibly be conceived has been tried in the various prune orchards, and, in many instances, in different rows of the same orchard, where the merits and demerits of the various methods could be more readily compared.

For many years the practice most in vogue was to form the head of the prune tree knee-high from the ground, and each successive winter cut back two-thirds of the previous summer's growth. This was the stereotyped plan, and most of the older prune orchards of the Santa Clara valley have grown by this method.

Some seven or eight years ago I commenced the practice of letting the canes grow without any pruning on trees that had been cut back for the first four years of their growth and a symmetrical head or basis for a head established. It was a departure from established rules, and was freely criticised and commented on. The method gradually commended itself, for many and various reasons, and was adopted by one orchardist after another, until at the present

time it is the commonly accepted method practiced in young prune orchards of Santa Clara county.

In the first year my practice is to start the head quite near the ground—within a foot or so. For the second year no specific instructions for pruning can be given. Before attempting it, one must have had some little practical instruction in an orchard, and must then draw on his fund of judgment and horse sense. Knowing the tree's habits of growth, he must look ahead, before applying the shears, and picture the tree in his mind's eye as it will grow and appear the following season in case he cuts thus and so. He must have a reason for cutting some of the branches entirely off, others back to the last bud, and others a third or a half or two-thirds back. He must have in his mind the forming of a well-balanced head, symmetrical and capable of sustaining the weight of a crop without splitting away from the main trunk, and to attain this must cut to top or side buds as the case may require.

The same remarks will apply to the third year's pruning. Leave no long canes, but cut well back to form good stocky butts as a basis for future growth. The growth of the tree up to this time has been such that mistakes in last year's pruning can generally be rectified, but no rule for general application can be formulated. It is entirely a matter of judgment based on experience.

The fourth year's pruning will depend largely upon the growth made by the tree, as in some localities a prune tree will have made as much growth at four years of age as trees in other localities at six or seven years of age. After a satisfactory basis for a head is formed, allow the canes to grow, cutting out only the cross branches that rub or chafe. Do not thin out the canes too much, as a prune tree at five or six years of age may have the appearance of having entirely too dense a head, but as soon as it comes in good bearing, the weight of the crop will cause the branches to bend outward and open up the head. The reasons for the above method are that growing the head as near the ground as possible protects the trunk from sunburn during the first years of its growth, shades the ground and retards growth of weeds and evaporation of moisture. The long canes are very pliable and will bend over gradually as the weight of fruit on them increases, until many of them will rest their outer ends on the ground, which helps very much in sustaining the weight of the fruit and keeping the canes from splitting off or breaking. It also commends itself in the saving of the cost of pruning after the tree is four or five years of age, which is a considerable item. The canes opening outward allows the warm sunshine to penetrate to the center of the tree, reaching the fruit, developing the growth of the saccharine juice to the fullest extent, and bringing the fruit to early and perfect maturity.

The above method has been so generally adopted in the prune-growing sections that it is safe to practice it as the best for any of the coast counties, but in the inland valleys the wisdom of the above method of pruning is open to question, as the fruit is liable to sunburn.

A common mistake made in following the system is in allowing the top canes to grow before a sufficient base is established. As trees of the same age vary so much in size in different localities, no certain age can be stated at which it would be advisable to let the top grow without pruning. This, like some of the other details of pruning, must be a matter of judgment.

Strawberry Growing in the San Joaquin.

S. A. Stiles of Fresno writes to the *American Farmer* an account of strawberry culture in California. The writer speaks of the success of persons who cultivate small fruits and raise a variety of crops. He describes the place of J. P. Johnson, who has two acres in bearing strawberry vines. He plows up half an acre of them every year and sets out another half acre. Last year from half an acre he sold \$600 worth of berries, from which, if we deduct \$180, the total expense, we have \$420 as the net profit per half acre.

Mr. Johnson says: "The soil should be rich and somewhat sandy. It must be situated where the rains are frequent or where it can be irrigated. The ground should be carefully prepared as for gardening. Then set your plants sixteen inches apart in the row, leaving a space of four feet between the rows."

"In this climate they should be set in the month of February or early in March. Cultivate and hoe to the single plant the first year, cutting away all runners with a common straight spade. Water when needed, as indicated by wilting or falling of leaves, and cultivate and hoe as soon after as the condition of the soil will warrant."

"Half an acre can be put out and cared for the first year for \$75. Some time during the following February it should be well cultivated, all runners again removed and vacancies filled with new plants. Then run your furrows for irrigation, midway between the rows. Once a week during marketing time I allow the water to run very slowly down these furrows till the whole surface of the ground is well saturated, great care being taken, however, that it does not overflow them and wet the berries. All weeds should be pulled after each irrigation."

"About the first of April we have berries for the market. During the first two weeks it generally requires about a dozen pickers to the acre, which number must be somewhat increased as the season advances. Pickers are paid one cent per pound basket for picking, and the basket costs about three-fourths of a cent."

"I find it much better to sell my fruit to the dealers than to try to dispose of it to the consumers."

"During the three months above mentioned we gathered from half an acre 6000 pounds of berries, which sold for an average of ten cents per pound. From the first of August on the yield gradually diminishes; still, I have never failed to have strawberries at our Christmas dinner."

"From the first of July till the fall rains come they should be watered, cultivated and hoed every two or three weeks, as needed."

"Care must continually be taken to keep them back to

narrow, single rows, as wide, matted rows produce small, inferior berries, and there is no market for fruit of inferior size in California.

"I have tried as many as 30 varieties and find that for marketing the Jessie and Haverland excel all others, although the Mrs. John A. Logan is not far behind them.

"Although some of your readers may think it altogether incredulous, still I am going to state to you the size and weight of some of my largest berries. The circumference of the largest measured last season was seven and one-half inches, and six of them weighed, together with the basket, seventeen ounces—possibly the basket may have weighed two ounces. For fine flavor the Jersey Queen and Golden Queen excel all others, though they fall short in productiveness."

CEREAL CROPS.

A Better Time Coming in Wheat.

Our wheat-growers will be deeply interested in a carefully prepared argument to show that there is still a future for wheat-growing in this country and that market values which will yield profit are sure to come. California can hardly afford to lose the wealth which her vast area of wheat lands should return. It is useless to think that all these "seas of land" can be profitably devoted to fruit-growing, nor are they all adapted thereto. We still want to grow a great weight of fine wheat and sell the world bread as well as sauce.

Mr. C. Wood Davis of Kansas has all along claimed that better times were coming for the American wheat-grower, and some of the claims of those who hold contrary views make him tired. In the June *American Agriculturist* he reviews briefly the positions of his opponents and then constructs his argument, introducing a host of facts which will be new to our readers. We quote as follows:

Extravagant Claims.—Statements to the effect that the lands suitable for wheat culture in North America alone are more than sufficient to double the present product; that every farmer knows that the present product might be doubled without adding a single acre; that some farmers raise three times an average of twelve bushels an acre, and that all may; that in the northwestern provinces of Canada exists a region but just touched with the plow capable of producing 2,000,000,000 bushels, which is about the whole product of the world; that the undeveloped fields of Africa, Australasia and South America will yield great quantities of the best qualities of wheat; that two years ago no one thought of Argentina as a wheat-exporting country; that Argentina last year exported 20,000,000 as a beginning, and this year expects an exportable surplus of 50,000,000 bushels; that in Argentina wheat is grown at a profit at 25 cents a bushel; that 25 cents is also about the cost in the Dakotas and Manitoba; that the wheat of Argentina can be laid down in England for 50 cents a bushel; that the American farmer must and can compete with foreign growers at this price; that the yield may be made to reach 40 bushels an acre for the United States, and that a view bounded by 25-cent wheat is the one which the American farmer must consider.

Farmers, Don't Be Scared.—It would be difficult to make a greater number of fallacious and misleading and mischievous statements in the space of a half-column article than those paraphrased above; and this is the feast of Dead-sea fruit to which the writer invites all the farmers of the United States.

The Real Facts.—I have been at much pains to investigate the facts in relation to wheat-growing, and I find that there are the most abundant reasons for believing that the American farmer will never be called upon to compete with wheat that costs but 25 cents; one all-sufficient reason being that wheat cannot be grown at this price and has not for centuries over the whole of any wheat-producing country; that there is not the slightest probability of any American farmer having to sell his wheat on the basis of 50 cents in England; that there are no more considerable areas of wheat land to bring under cultivation in the United States; that we are, and have been for some years, annually diverting wheat fields to the production of forage—oats and hay—required by the 1,500,000 yearly added to the home population; that the wheat area of the United States, if we can rely either upon the census or the report of the Department of Agriculture, is very much less now than in 1884; that the corn area is nearly 6,300,000 acres less than in 1889; that the annual additions to the population require the product of at least 3,300,000 acres in corn, oats and hay; that the hay acreage alone yearly absorbs more acres than are yearly reduced to cultivation; that additions to the corn and oat fields can only be made by drafts upon the lands now employed in growing wheat for export; that more than 90 per cent of all additions to the population are centering in the urban districts and becoming customers of the farmer, and that few new farms are being added, by reason of the practical exhaustion of the arable lands which few now question, although I was written down for a crank when I first directed attention to the fact less than five years ago.

Our Waning Area of Wheat.—There are probably few men in the United States better informed as to agricultural conditions, especially in the great Central West, than Mr. Eugene V. Smalley, who, in the April *Forum*, summarizes the situation by saying that, "We can fill up the eastern parts of the Dakotas, where the population is still scant, and then we shall have done with any important increase of our wheat acreage. Kansas and Nebraska are already settled as far west as rainfall warrants tillage. I do not take into account the strip of wonderfully fertile country in eastern Washington and northern Idaho, because that is already better settled than either of the Dakotas. We shall have no new agricultural States, and no very great increase of the food-producing areas in the older States."

Canadian Competition.—There is a productive region of

limited extent in Manitoba, but quite as fully occupied as the Dakotas, while wheat-growing in the other provinces of northwestern Canada is, and is ever likely to remain, an extra-hazardous business, because of destructive frosts that ruin the hopes of the farmer one year out of three, and even this much of success is questionable, as the meteorological data are not such as to show clearly how far North wheat can be grown at all. At most, the area possibly adapted to wheat-growing does not exceed the area of the Dakotas, and nothing could well be more preposterous than to talk glibly of the ability of that region to produce 2,000,000,000 bushels of wheat, or even a tenth of it, as there is nothing, as yet, to show the adaptability of any considerable part of that country, outside of Manitoba, to wheat-growing, and at most it can never exceed the power of the one State of Kansas in that direction.

Increased Yields Per Acre.—The statements that the product of the United States may be doubled by improved processes, and that because one man with soil of the highest fertility and favorable climatic conditions has grown 40 bushels of wheat, all may, are too ridiculous for serious consideration, and show an entire misconception of the conditions surrounding wheat culture which, here, as elsewhere, are more a matter of climate than tillage, or of soil. I have raised 45 bushels an acre on rich creek bottom, but if my upland neighbor had tried to secure such a yield, it would have cost him more than the legendary two dollars a bushel for fertilizers; and then he must reckon with climatic conditions. The land that gave me 45 bushels one year failed to return the seed the next time it was in wheat. In 1892 Kansas grew 71,000,000 bushels, and in 1893 only 23,000,000, although more wheat was sown for the latter harvest than for the former—climatic conditions.

Australasia has 200,000 acres less under wheat in 1893 than in 1887, because the growers, although getting more for their grain than Kansas and Dakota farmers, find it unprofitable; and much land occupied under long term pastoral leases, but little expansion of the wheat area is possible for years. Even then there is no such expansion possible as will materially affect the world's markets.

Africa as a Wheat-Grower.—Outside the Boer republics, Africa contains no considerable areas adapted to wheat-growing, and even there the whole possible area does not exceed that of one of the Dakotas. Cape Colony has been settled hundreds of years, and yet it still imports a fourth of its breadstuffs and will continue to, as but little of the area is adapted to wheat. Wherever the banana ripens wheat will not, and this is conclusive as to nearly all Africa north of the Dutch republics.

Truth About Argentina.—The statement is made that the unoccupied areas of Argentina will alone suffice to furnish all the wheat required, the area adapted to wheat being placed at 240,000,000 acres. These statements will not bear the least scrutiny. There are but 240,000,000 acres in the whole of Argentina that the most enthusiastic "boomer" of that country of collapsed booms has ever claimed was adapted to any kind of cereals. This estimate was first made by a Mr. Fliess, and is of such a character that the British Minister to Argentina cautions Lord Rosebery against placing confidence in its accuracy, designating the estimates of the cereal area as exaggerated.

The facts are that three-fourths of Argentina has a rainfall ranging from 11 to only 16 inches annually; that there are about 200,000,000 acres adapted to grain culture; that 100,000,000 acres, or one-half the cereal area, is within the region of tropical rains and fit only for corn; that of the 14 provinces of Argentina only Buenos Ayres, Entre Rios, one-half of Cordova and one-third of Santa Fe are in any degree adapted to wheat growing; that even the southern 200 miles of this area is subject to destructive frosts; that the whole wheat area only equals two such States as Kansas; that locust invasions are of almost yearly occurrence, and while very destructive to the corn crop, yet rarely come in time to damage the wheat; that the whole wheat belt has a climate as capricious as that of Kansas, and destructive drouths are common, and that Argentina did not begin wheat exportation last year, as 780,000 bushels were exported in 1879; that the exports of 1887 aggregated 9,000,000 bushels, as those of 1890 aggregated 12,500,000 bushels, while the exports of 1893 were some 33,000,000 bushels instead of the stated 20,000,000.

A World's View.—We had two phenomenal crops in 1891 and 1892, and Argentina had equally as phenomenal acreage yields in 1892 and 1893, and while there is annually a material percentage added to the acreage of Argentina, it does equal one-third the additions yearly made to the world's wheat requirements. The additions made to the wheat areas of Argentina, Uruguay and the Balkan States have long been offset by reductions in western Europe and the United States. This is made manifest by the incontestable fact that the wheat acreage of the world in 1893 was but 100,000,000 acres, or barely five-hundredths of one per cent greater than in 1884, while in 1894 it is probably one or two million acres less than ten years since, because of reductions in the United States that exceed the additions made elsewhere.

Wheat is Low because the world had a surplus acreage of quite 9,000,000 in 1880, permitting the accumulation of great stores from the extraordinary crops of 1882 and 1884 that sufficed, with the product of an acreage that continued in excess up until 1887, to carry the world to the end of the 1890-91 harvest year, when consumption had overtaken production and remunerative prices would then have come to stay, but for the enormous acreage yields of the fields of the United States in 1891 and 1892—yields that enabled us to throw upon the world's markets at least 370,000,000 more bushels than we could had those crops been but average ones. The world's crops of 1891 and 1892 were 369,000,000 bushels in excess of the two preceding ones; the excess being nearly in the measure of our extraordinary contributions to the world's supplies.

When Prices May Advance.—But for the extraordinary acreage yields from American fields in 1891 and 1892, the acreage deficit in the world's wheat area, now equalling 16,000,000 acres, would long since have brought good prices

for wheat and carried up the prices of all other grain, as the bread-eating people have increased 60,000,000 since the world's wheat area ceased to expand. Moreover, the world's area under all grains of the temperate zones has increased but 12,200,000 acres in ten years, while the increase of population indicates an increase of nearly six times that amount. In other words, the bread-eating populations have, since 1884, increased more than five times as fast as the food-producing areas, and but for an excessive acreage in 1884, scarcity and high prices would have long since ensued.

A Brighter Future Ahead.—The farmer is certainly entitled to all the encouragement that can be drawn from these facts, and there is no excuse for any writer drawing upon his imagination for material with which to paint the future in somber hues, especially when, even if the alleged wheat lands were existent, it would take decades to bring them under cultivation, while ten years will add acreage requirements of not less than 20,000,000 acres, to which must be added an existing deficit of 16,000,000 acres.

The future of the farmer is bright and hopeful, and with two crops not above the average in yield per acre, the better prices will materialize.

THE FIELD.

Great Possibilities in the Peanut.

As California is one of the great peanut States, and as our adaptations and advantages for the production of this crop favor a vastly increased output, it is locally significant that the peanut is now coming to the front as a staple food product. We rarely chance upon anything more interesting than a review by Consul Frank H. Mason of Frankfort, of the standing of the peanut among food experts of Germany, which we find in the last volume of the consular reports of the U. S. State Department. We quote leading portions of this document as follows:

The duty on raw peanuts imported into Germany is \$4.70 per metric ton (2240 pounds), and the duty on peanut oil is \$2.38 per 100 kilograms, equal to about nine cents per gallon.

The nuts from West Africa and from America arrive usually in the shell, but in East Africa and in India they are often thrashed out by machinery and the seed only exported. There is thus a saving of bulk on shipboard, but at some expense of quality, as the kernel or bean of the peanut is much more apt to grow strong and rancid when naked, and more or less crushed and broken by thrashing than when inclosed in its natural husk or shell. The shells of dried peanuts constitute 23 per cent of their weight, and are used in Germany as material for certain kinds of paper or are ground up as food for cattle.

At the oil mills the kernels are ground or crushed and submitted to three successive pressings, in which a force of about 250 atmospheres is employed. The first pressing expels about 40 per cent of the oil, the second four per cent and the third pressing from two to three per cent of the remainder. Cold-pressed oil of the first pressing from African or the best American peanuts is used in Germany as salad oil and for various culinary purposes. It ranges in price (wholesale) from \$14.75 to \$26 per 100 kilograms (approximately from 56.7 cents to \$1 per gallon), which is far cheaper than any edible quality of olive oil can be imported and sold in this country. The American peanut is larger, sweeter, and, when roasted, better flavored than any of the others, but its oil is of medium quality and ranks below the African, being worth in the present market \$15.47 per 100 kilograms, or 59 cents per gallon. Oil from the East Indian peanuts ranges in value from 40 to 50 cents per gallon, and like the last pressing from African and American nuts is not used directly for food, but is used in the manufacture of soap and for various other technical purposes, among which is included the "fattening" of oleomargarine.

The most important secondary product of peanut-oil manufacture is the oil cake or meal which remains after the oil has been, as far as practicable, extracted by pressure. This sells for from \$30 to \$33 per ton, and until within a year or two past has been used in Germany exclusively as food for cattle, sheep, and to some extent for horses, though it is said that it is too rich and heating for working animals, and except in the coldest weather, causes excessive perspiration unless fed in small quantities and mixed with grains. Under chemical analysis peanut-oil meal shows such extraordinary richness in nitrogenous elements that the German savants have seized upon it as an obvious source of cheap and highly concentrated material for human food, adaptable not only to army and navy rations, but of timely and important value to the peasant and industrial classes, which have suffered from a long and nearly exclusive diet of bread and potatoes, unmixed with a due proportion of nitrogenous animal food. This has led to a series of experiments, which are still in progress, and to the invention by Dr. Nordlinger, a chemist at Bockenheim, of a series of preparations from peanut meal which seem destined to play an important part in the future food economy of the German people. The problem was to convert a waste material—the secondary product of oil manufacture—into a palatable, nutritious and wholesome form of human food, cheaper in cost than the same equivalents of nutrition could be supplied in any other form, and susceptible of simple and easy preparation by any cook of ordinary intelligence. How satisfactorily this result has been already attained is shown by the four samples which are submitted with this report, and which represent the principal forms in which oil cake from peanuts is prepared by the Rademann Food Product Factory, of this city, under the processes of Prof. Nordlinger. These are:

1. **Peanut grits** (*Erdnussgrütze*).—The coarse meal dried, purified, bolted, and packed in papier-mache boxes containing one German pound each, which is sold at retail

for 12 cents. In this form it is used for soups, cakes, and is cooked like a vegetable as puree.

2. *Peanut flour (Erdnussmehl).*—Similar to the above, except that the meal is ground and bolted like ordinary flour.

3. *Peanut biscuits.*—Dry, light, highly palatable biscuits, or "crackers."

4. *Diabetic chocolate biscuits.*—Highly recommended for persons suffering from diabetes.

These preparations have been in the market and in experimental use for something more than a year. One of the most important trials which they have undergone was that described in an address delivered before the Berlin Medical Society on the 8th of February last by Prof. Dr. Fuhrbringer, director of the Friedenshain Public Hospital at Berlin, and published in No. 7 of the Berliner klinische Wochenschrift for 1893. It gives the results of the experiments made by Dr. Fuhrbringer, under whose direction the peanut grits and flour were prepared in various forms and supplied as food to 120 men, women and children, inmates of the hospital named and suffering from the usual variety of complaints that prevail in a public hospital. The report of Dr. Fuhrbringer enters into medical details and technicalities which it is impractical to follow here, beyond the general statement that of the 120 patients included in the experiments, more than half found the peanut-meal soup palatable and excellent, and ate it gladly whenever it was offered. Of the remainder, eight or ten persons found it disagreeable in taste, and the others, while not especially fond of it, ate it without complaint. All thrived well upon it, and the analyses of excretions showed that it had been in general well assimilated.

This being the case with invalids, some of whom were suffering from dyspepsia and other digestive weaknesses, it will be readily inferred that for all persons in robust health, particularly for soldiers, sailors, workmen, and the inmates of prisons and asylums, this cheap and highly nutritious food may have an important value. Its sustaining power is remarkable. Although easily digested and assimilated even by invalids, its durability—for want of a better term—surpasses even that of the hitherto unequalled "Soja bean" of Japan and China. All this has been made the subject of careful experiment by the military authorities of Germany. In the garrisons at Frankfurt and elsewhere the men have been supplied with soups made from peanut grits, and the results carefully noted in official reports which have been recently made to the Ministry of War at Berlin, and which are not yet accessible. The first series of experiments, which was made some months ago, was announced by the Ministry of War as having proved quite satisfactory, and if the later trials are equally favorable, it is probable the peanut meal will be included in the future garrison rations and "field sausage" of the German army.

Thus far, however, the most conclusive evidence in its favor is furnished by the analyses which have been made by several German chemists of high authority, and who have rendered the demonstration more striking by comparing the nutritive value of peanut meal with that of other well-known forms of vegetable and animal food.

The bulk price of a pound of prepared peanut meal in Germany is a little more than four cents, and as, by analysis, one kilogram of that material contains 3134 "units of nutrition," its price is thus reduced to a cost of about three cents per thousand. Upon this fact as a basis, Prof. König builds the following demonstration, showing the comparative nutritive value and cost per 1000 units, in Germany, of twelve principal animal and vegetable food materials, viz:

Food materials.	Nutritive units per kilogram.	Cost per 1000 units.
Skimmed milk.....	216	10.4 cents.
Skim-milk cheese.....	1914	11 "
Full milk.....	320	11.5 "
Bacon.....	2767	15.5 "
Butter.....	2510	20.4 "
Veal.....	1157	22.2 "
Beef.....	1168	26 "
Peas.....	1713	4.2 "
Potatoes.....	304	5.1 "
Rye flour.....	1328	6 "
Rice.....	1177	10 "
Peanut meal.....	3135	3 "

It follows, therefore, that peanut meal is not only the most nutritious, but, estimated by its alimentary value, by far the cheapest of this whole list of food materials. From its richness in protein and its low proportion of carbohydrate elements (starch, sugar, etc.), it is especially adapted to the use of persons suffering from obesity, and may be made to enlarge in a most welcome degree the restricted menu of patients under treatment for excessive fatness or diabetes.

THE APIARY.

The Honey Failure at the South.

N. Levering, the well-known Los Angeles bee-keeper, gives the *Cultivator* of that city the following facts about the honey failure of 1894:

From reports from various parts of the country, the outlook for honey is anything but encouraging. No honey is being stored and bees are dying of starvation. Prospects are gloomy without a cheering ray to hang a hope upon. Up to the present the season looks more unfavorable than the memorable year of 1877, for then, at this time of the year, the weather was warm and bees gathered enough to subsist upon, but stored no surplus. We do not write to discourage apiarists, but feel that the facts should be squarely told. Apiarists should expect a Waterloo defeat once in a while, and when it comes once in 17 years they should at least take it stoically and hope for better in the future.

This year the work for June will vary from ordinary seasons. There will be little or no extracting done, owing to the drouth, which will be an epoch in the history of apiculture in southern California. The most essential work for this month will be to keep the bees in as good condi-

tion as possible. The continuous cool weather up to the present writing indicates a scarcity of honey—not more than the bees will consume before the approach of a favorable honey flow. The honey harvest is most generally in June. This year, if any, it will be in July, as it is barely possible that the sumach will produce some honey. We would advise no extracting unless there is an oversupply. Bees should be kept strong during the prevalence of a drouth. Usually one extreme follows another, and the year 1895 will most likely be a good honey season and then strong colonies will be in demand. "In time of peace prepare for war; in time of a drought prepare for a crop. Keep your bees strong, for this at dull times is the key to success."

A Cheap Sun Extractor.

Geo. W. Brodbeck of Arrowhead tells the readers of the *California Cultivator* that the most simple, the cleanest and the best method to extract wax from old or new combs is by a sun extractor. The wax is always of a nice yellow color, free from impurities, and no one ever takes any exception to it, for in such wax you have all you could desire, so if your apiary is without a sun extractor you are dispensing with one of the most valuable aids you could have. You can make them to hold four, six or eight frames, and, as an illustration, I will give you the dimensions of one to hold four 17½x9½ frames or 17½x10 inches.

First make a box out of well-seasoned lumber, 24 inches wide, 50 inches long and 12 inches deep, with a close-fitting bottom with two short legs in front and one longer one at center of rear end, giving the legs a tripod form. Use screws instead of nails and paint the box with three coats of some dark color. Make a tin pan five inches deep, the width of the inside of your wooden box, and 10 inches less in length with one end of tin pan open. Then make a light framework in wooden box for pan to rest on and of the right depth, as the top of pan is within half an inch of the top of the wooden box, nailing the pan securely along the edge. You thus have an air space beneath the pan which equalizes the heat and prevents rapid cooling beneath. The ten-inch space on the end gives you room to set a pan to catch the wax or honey, for this can be used to extract honey as well as wax, but the objection to use as a honey extractor is that the sun darkens the honey. Any kind of glass sash will do for the top, but I find it better to have a solid pane.

Wearing a Bee Veil.

When it is necessary to wear a veil in hot weather, who has not wished that there was some way of holding it down, aside from that of tucking it inside the collar? When the neck is hot and sweaty, how it feels with a sort of muffler pressed close against it by the collar. Besides this, the veil is held suffocatingly near the face. All this may be avoided, and I'll tell you how.

In a hem in the bottom of the veil run a string, leaving about a foot of the hem, right in front, unoccupied by the string. That is, let the string enter the hem at about six inches to the right of the center of the front of the person, pass it around the back of the neck, bringing it out of the hem at a point six inches to the left of the center. The projecting ends of the string must be long enough to pass under the arms, cross at the back, and then be brought around and tied in front. The string holds the edge of the veil securely upon the shoulders, while if the right length of hem is left without a string in front, that part will be drawn snugly across the breast.—Review.

SWINE YARD.

Pigs as a Dairy Adjunct.

We know of cases where the pork saved the dairy ranch from loss on a year's run. It is wise to get all out of the pig department that there is in it. The following from the *Breeders' Gazette* is suggestive:

The low price to which dairy products are now dropping will set many to wondering if the bottom has not fallen out of this industry as well as other agricultural lines. While the present low prices are certainly but temporary, in a large degree at least, it is but fair to expect that butter will never again bring as high prices as it has sometimes in the past, and that the unusual prosperity which has so long marked this rapidly developing industry will shade off considerably.

Dairying is hard work, and few will follow it long without fair returns. To those who wish to come out best in the trying times now at hand, we urge a more considerate use of the by-products of dairying, viz., the whey and skim milk. At the Wisconsin Experiment Station careful feeding trials showed that whey was worth seven to eight cents a hundred for mixing with cornmeal and shorts for pigs when hogs bring the prices they now command. To have anything like this value, however, the whey must be fed sweet. Let the farmer who patronizes the cheese factory insist that the whey tank be kept as clean as the cheese vat, claiming this as one of his rights with the maker.

We must build good frames in the case of our hogs, and have them in a thrifty condition preceding the fattening period if the returns are to be profitable. To make a fine pig there is nothing available equal to skim milk. We have known breeders of registered stock to skim their milk cans very lightly when a few fine litters of pigs stood in need of the product from the dairy house. No doubt the extra price these pigs brought more than compensated for the butter-fat lost. Generally, one had better have his milk skimmed closely and feed the sugar and casein of the skim milk, making up the deficiency of fat with cornmeal and other foods cheaper than butter. As to whether skim milk should be fed sweet or sour may be left for the feeder to decide. A few are in favor of giving the milk sweet, while many and some of our best feeders insist that they

prefer it sour. Certain it is that a pig revels in a generous supply of sour milk just as a harvest hand enjoys the jug of buttermilk fresh from the cellar. The acid in milk is healthful and is often a needed corrective. Experiments at the Wisconsin Station show that skim milk made the strongest bones in pigs of any feed that was supplied. We do not wonder at this when we reflect on the nature and purpose of milk. Every hundred pounds of it contains seven-tenths of a pound of mineral matter designed by nature to build up the bony framework of the calf. In these days of swine that become too fine-boned it is well to give special attention to this matter of building up a good frame, and nothing does the work so well as milk. As to the value of skim milk per hundred pounds, much will depend upon the way in which it is used. It will range all the way from 10 to 20 cents per hundred with hogs at present prices, and for pigs may even go higher.

The feeder should arrange to have his milk flow largest when the pigs need it most; to have the cows dry, or practically so, when the litters of pigs are six or eight weeks old is bad management. For young pigs three or four parts of skim milk with one part of a mixture of cornmeal and shorts or cornmeal only will do splendid work. As they grow older, increase the cornmeal and diminish the milk, unless the milk is at hand and would otherwise be wasted. The dairy farmer should have the best pigs that can be raised, and his pork should then command a high price with the buyer. In figuring up present prices of dairy products, do not forget that a good cow should return not less than 4000 pounds of skim milk worth from 10 to 20 cents a hundred, and even more according to how it is used.

THE DAIRY.

The Why in Dairy Matters.

Why should the udder, etc., of the cow and the hands of the milker be made as clean as possible before milking? To keep bacteria from getting into the milk.

Why should the milk be removed from the stable as soon as possible after milking? To prevent absorption of any odors of the stable.

Why should milk not be put at once, after milking, into closely covered cans? Because by so doing odors are retained in the milk.

Why should milk that is to be set for cream in covered cans, or put into cans for immediate delivery, be aerated? To remove the animal and other odors from the milk.

Why should milk be set as soon as possible? To stop the action of bacteria.

Why should the temperature of the milk be reduced as quickly as possible for creaming? To prevent the formation of fibrin and the growth of bacteria.

Why should milk that is to be set for cream be agitated no more than is necessary before setting? Because agitation favors the formation of fibrin.

Why should milk pails, pans, churns and every utensil used in the dairy be kept most carefully clean? Solely to keep out bacteria.

Why is cream ripened before churning? To develop flavor and render churning easier.

Why should the ripening process of cream not be allowed to continue too long? To prevent the development of bacteria that produce offensive products, such as bitterness, and destroy aroma.

Why should a thermometer be used at every step of the process of making butter? To be sure that the temperature is the one desired in each stage or division of the work.

Why does cooling the milk prevent or retard souring? It retards growth in bacteria.

Why do milk and cream sour less rapidly in winter than in summer? There are few bacteria in the air and the temperature is lower.

Why does the ripening of cream make it churn more easily? The albuminous matter of cream is rendered less tenacious.

Why does milk become sour? Bacteria changes sugar into lactic acid.

Why should the room in which milk is set be made perfect in its sanitary conditions, such as good ventilation, cleanliness of floors, walls, etc., freedom of bad odors, etc? To keep out undesirable bacteria and to keep products free from bad odors.

Why does the presence of casein in butter injure it? It affords nourishment to bacteria, which causes butter to decompose.—London Dairy.

Poisoned Wheat for Moles.

TO THE EDITOR:—I have found an effective way to kill moles is to puncture the runways with a sharp-pointed stick about the size of a lead pencil and then drop a few kernels of poisoned wheat in the holes. I have tried this a number of times and it has always been successful.—H. F. D., Alameda.

This is rather contrary to the common belief that moles subsist wholly upon animal food, grubs, worms, etc. An account was given in the *RURAL* last year of a lady in Oregon who showed that moles in confinement would eat green peas. We understand that others besides our correspondent have successfully used poisoned wheat. We would like to hear more of this and other methods.—ED.

THE limestone monument bearing the title used as a headline is located in Decatur county, Ind. The center of the population in the United States, as located by the census of 1890, is in the above-named county, 20 miles east of Columbus, one of the cities of Hoosierdom. This is the second time in the history of our country that the center of population has been indicated by marking it with a monument. The first was the spot located by the census of 1810. The "monument," which may still be seen, is simply a flat stone embedded in the soil 40 miles northwest of Washington, bearing these three words, "Center of Population."—St. Louis Republican.

THE HOME CIRCLE.

Worth the While.

It is easy enough to be pleasant,
While life flows by like a song,
But the man worth while is the one who will smile
When everything goes dead wrong.
For the test of the heart is trouble,
And it always comes with the years,
And the smile that is worth the praises of earth
Is the smile that shines through tears.

It is easy enough to be prudent
When nothing tempts you to stray,
When without or within no voice of sin
Is luring your soul away.
But it is only a negative virtue
Until it is tried by fire,
And the life that is worth the honor of earth
Is the one that resists desire.

By the cynic, the sad, the fallen,
Who have no strength for the strife,
The world's highway is cumbered to-day;
They make up the items of life.
But the virtue that conquers passion,
And the sorrow that hides in a smile,
It is these that are worth the homage of earth,
For we find them but once in a while.

—Ella Wheeler Wilcox.

The Uncomfortable Visitor.

SHE lived in the city. Her husband was employed in a business that brought him a comfortable salary, so they always lived comfortably, writes "Kate" in *Country Gentleman*. They did not own any property there, and there were a good many reasons why they did not buy any. First, taxes were so high and street and other improvements cost the land owners so much that it was cheaper to hire than to buy. If any one should ask if the land owners did not eventually make all their expenses out of the renters they would be told that that was an uncomfortable question they had not time to investigate.

Once they decided to buy a lot and build a house, and have just one of those real nice little homes, you know, but as they could pay but very little down they had to give a mortgage, and it took so much out of the salary to meet the payments that there was really not enough to live upon. Think of wearing that bonnet two years for best! Of course she could not go anywhere, or could hardly go anywhere the last year. And really every article of clothing worn by the family got so shabby that they were hardly respectable, and when one loses their self-respect—why, they must not do it, that's all. So, for the good of the family, the place was given up, the little that had been paid upon it went with it, and once more the family was respectable and comfortable.

Twice this pretense of buying a house had been tried, and both times with the same result. Then they settled in their minds that the salary would last as long as they lived, and why should they care beyond that?

Well, this lady went visiting in the country one summer. She had a dear friend in the country whom she occasionally visited, only to stay a day or so. But this time she was to make a long visit, at least two weeks. It was a noble farm. Rich, well cultivated fields surrounded the house, garden and orchards; there were grand old woods and low hills in the distance, and those who lived there could not help but love the place. They would have been blind to all beauty, deaf to all music, irresponsible to every attraction if they did not. The house itself was old-fashioned, having been built by the preceding generation, and was not as good as a newer one would have been, yet it was too good to throw aside and build anew, especially when the revenues from the farm are no greater than now.

For two or three days the city lady's visit passed pleasantly; then she began to discover quite a number of things that were not just as they should be. The first was that her country friend was working too hard. There were five in the family beside the visitor, butter to make from five cows, chickens to take care of, and all the hard work incidental to farm life, and only the farmer's wife and one girl to do it all. The girl worked all the time, and the mistress most of the time, and yet she could see that the housework was not always as well done as it should be. The sweeping and dusting were not always perfectly done, the table linen was sometimes soiled; the cooking was good but there were no extras, such as with their abundance of eggs, butter, cream and fruit they could so easily make if they would only take time to do it. She began to pity her friend because she had to work so hard, and at last considered it her duty to remonstrate with her.

"Why don't you stop doing all this hard

work? You are wearing yourself out, and will be an old woman long before your time. You will break down entirely, and then what will your children do? Now do stop working so hard. I wouldn't raise a chick if I were you, and I'd sell my cows the very first thing and buy my butter. Working yourself to death to save a little money! You don't catch me doing it!" And so she went on. Sociable and cheery, she was a very pleasant companion most of the time, yet when her friend sat down after the work was done, a little more wearied than usual, she went the same round over again with but slight variations.

After a few days, as this apparently made no impression, she began on a new line: "That girl of yours ought to have done that work you have just done. You were tired when you began it, and now you are exhausted. If she cared anything at all for you she would take all these things off your shoulders. How I wish you could get as good 'help' in the country as we do in the city. You have no idea how little you would have to do if you had a really good girl." Of course there were long explanations of the difficulty of getting a girl at all in the country, good, bad or indifferent, and as to getting any one to come and work by the day, that was simply impossible.

Then she discovered that a few changes in that old-fashioned house would be a decided improvement. "I don't see why it is necessary to keep old houses just so always, simply because our fathers and mothers made them so, and there are really so many improvements in our modern style of building, that it is a great trial to live in an old house. I tried it once, and said then that I never would again. Why, I just felt cross all the time I was living in that old house, and as the owner would make no changes, we had to leave it. Now, if you only had a door here, it would be so much nicer, and with a wing built there, you could have a large new bedroom, and the old one could be thrown into this room." And then they replanned and rearranged and talked over and over the old house until they decided that it could, with much work and many dollars, be made—well, be made very comfortable for an old house.

But why enumerate all the faults that this city friend discovered on that farm and in that farm house? Not that she was a petulant fault-finder, for she was of an amiable nature, and really wanted to help every one around her and add something to their happiness. If there was anything uncomfortable in their surroundings, she wanted to point it out, so that it could be removed and life made more cheerful. She was simply doing a service that she would have thanked any one else to do for her, for if her surroundings were not according to the modern standard, she made them so, or got out of them and went to some other place.

On the day the visit ended, she said: "I have enjoyed my visit so much, for I had no idea it was so nice out here in the country, and you do entertain so beautifully! What a pity it is that you do not live where you could see a little more company. It seems as if you were robbed of all social advantages, living here so far from everybody."

Now what effect did all this have upon her farm friend? Perhaps it can best be shown by an extract from a letter that the latter wrote to her sister: "We had a good visit all the time she was here, but somehow I have had the blues ever since she went away. You know how they live; there is a regular sum of money coming in every month, and they use it up and have everything they want. She can't see why it shouldn't be so everywhere, and you know how it is on a farm; some months we have quite a good deal paid in and others we have none at all, and we never know how we shall come out at the end of the year. I know this house is a regular old trap, but will it be the best thing for us to do to throw it aside or overhaul it and make it over into a new one? I know I am working hard, making butter and raising poultry, but it brings in a good deal of money, and if we don't make what money we can in these little ways, how are we going to send the children to school? And go to school they shall if we can possibly get money enough to send them. I sometimes think that here we are, working our lives away and missing all the pleasure we might get out of them. I know that a good share of our furniture is poor old stuff, and I should like to have better, and I should like a good hired girl (for Sarah got out of sorts and left the day before the visit ended), and I know that my dresses are a long way from being in the latest style, and I should like to have a new supply; but where is the money to come from to pay for all these things? The sum we have laid up in bank would disappear instantly if we had every such thing we wanted, and

if that were gone I am afraid I should be more dissatisfied than I am now. I think it must be because — talked to me so much about what I ought to have that has made me so uncomfortable since she went away. I have felt as if I were stingy and miserly, and I know I do not mean to be either. Isn't there some way to be happy without paying out every cent we have in the world?"

Reader, how ought any one to think and do after she has had such an uncomfortable visitor?

How to Succeed.

The measure of a man's success in life depends very often upon himself. It depends more upon what he has in himself, the talent, the skill, industry, prudence, tenacity, than it does on the things that lie outside of him—otherwise, his opportunities. An opportunity is of no earthly use to any one until it is grasped, cherished, made the most of.

A man must be quick to see and to lay hold of the opportunities that come in his way; otherwise, he will only be able to take a retrospective glance at them as they float away into space to join the other might-have-beens. The world is full of opportunities waiting, like fishes, to be caught, but ordinarily they do not drop into a man's hand; he often has to put his worm on the hook and sit for a whole day angling before he gets a bite—but then it may be a big one.

How often do we see a boy or a man who seems to lack every possible advantage climb steadily to the very topmost heights. Very often we think him a dull, slow, plodding sort of fellow, but he "gets there" all the same, while those who derided his methods stand below, craning their necks to look at him and gaping in astonishment.

Tenacity of purpose is one of the chief insurers of success. The one who flits here and there from one bright flower or purpose to another will never succeed. He is allured by each in turn, and as soon tires of it. He becomes a Jack-at-all-trades but a master of none. The man who succeeds sets himself to work and sticks to the business; he learns all parts of it, he studies it from all points, he takes an interest in it, he loves it. He does not let it matter to him; he becomes its master, and he succeeds. It matters not what business such a man enters, he is bound to succeed anyway, because he knows how to stay, he has the quality of adhesiveness, of tenacity, of honesty.

Of course, a dishonest man may be successful from a monetary point of view. This, however, is not a true success; because there is nothing lasting about it—his money he cannot carry with him—and "what shall it profit a man if he gain the whole world and lose his own soul?"

The man who is really successful builds his character while he is building his prosperity; and though the prosperity yield to accident and vanish, he still has something left—a treasure which neither moth nor rust can corrupt.—The Yankee Blade.

Fashion Notes.

One of the economical customs of the hour, brought about by the stress in the money market, which has now begun to affect the trade of the most fashionable dress-makers in the city, is the demand for odd waists or French blouses. It is not an unusual thing for customers to order as many as three waists with a single skirt of handsome satin or moire.

Somebody announces every now and then that men do not like masculine-looking garments on women; that starched shirt bosoms and cuffs, stiff hats and man-like coats are their abomination, and that they wish women to be in everything the opposite of themselves. Nevertheless, tailor-made fashions have practically no rivals in the average man's esteem, if his comments are to be taken as an indication of his taste. The plainer the skirt, the tighter the stitched bodice, the higher the starched collar, the natter the four-in-hand scarf and the dogger the dogskin gloves, the more approval do they win. Apparently, a man likes to be beaten on his own ground when it is a question of dress.

The most desirable dresses for spring wear are the tailor-built tweed and cloth gowns, which have neatness and good style to recommend them as well as no end of service. The newest suits are made of fine twill or smooth cloth, and fawn and brown are the favorite colors. The coats are in great variety, some being open all the way down to reveal the blouse or shirt at least seven inches across the front, some having

revers which end at the chest, while others extend to the bottom of the waist, where the coat fastens with one button. The collars are deep, full and square, or a plain turn-down collar at the back. However, the latest and most approved coat is tight-fitting at the back, half fitting in front and double-breasted, buttoning all the way up. It can be made serviceable for warmth, and at the same time may be rolled back to show the vest.

The latest vest is single-breasted, with buttons up so high that very little of the shirt is seen. Covert coating is a fashionable material for these dresses, but it is very heavy; and when the skirts are interlined with haircloth, they are really burdensome. Tweeds and chevots make much lighter gowns.

Cool ecru linens came into such favor last summer that they promise to be very generally worn again in coat and jacket suits of various kinds. Young women of wealth, who seek something new, are buying these linens in imported suits made after a rather fanciful fashion, when one considers the simple fabric. Thus they have a round waist of brown linen, with jacket fronts opening on full blouse front of ecru guipure lace laid on white satin. A high collar of the guipure and a black satin or moire ribbon belt complete the waist. Gigot sleeves of moderate size have small cuffs of guipure edged with a narrow band of black satin ribbon. The short skirt, escaping the ground all around, is trimmed with several narrow folds like pipings of black ribbon set around it at wide intervals.

Other ecru linens are of the thin batiste that is so generally becoming. These are made with a belted waist crossed with ecru guipure insertion of an elaborate pattern in scallops, the stock and soft belt of either Nile green, turquoise or cerise velvet. The skirt is double, each skirt being about the same length in front, while the upper skirt lengthens in plaits that point to the foot in the back. Both skirts are edged with wide guipure lace that has scallops at the top inserted in the batiste. Bishop sleeves have wristbands of colored velvet and cuffs of the guipure.

The extreme length at which the leg-o'-mutton sleeve has been worn this winter has led to the introduction of the elbow sleeve for those to whom the sleeve falling over the hand is unbecoming. These picturesque elbow sleeves, which belong to the shepherdess fashion, are again worn in Paris with long, wrinkled gloves, which reach to their edge.

Some Simple Things.

A gargle of salt and water is a remedy for an ordinary sore throat.

A strong solution of salt and water will remove the poison of bee or mosquito stings.

There is nothing more soothing in case of nervous restlessness than a hot salt bath just before retiring.

When you go to whitewash your cellars, put a lot of copperas in the whitewash. It will keep the vermin away.

Coarse-ground coffee sprinkled on a shovelful of burning coals will remove offensive odors from a sick room.

If you desire to paper a wall that has been whitewashed, rub the wall down with a cloth wet in strong vinegar or saleratus.

Handsome parlor vases are usually filled with some such ingredient as sand to weight them and prevent the light porcelain from being brushed off the mantel-piece.

Flowers will keep better in damp sand than in water, and a center-piece of flowers for the table may be more gracefully and firmly arranged in a jar of wet sand than in a foundation of moss.

It is said that oil spilled on a carpet or any woolen material may be removed by applying buckwheat plentifully, brushing it into a dustpan after a short time, and putting on a fresh supply until the oil has disappeared.

Sweet briar or eglantine has a most delightful fragrance, as those who have gathered it in the fields and enjoyed it afterward in the house well know, and the leaves of it are said to be excellent, when dried, to fill pillows to put under the head, instead of balsam or pine.

An efficient fly poison, which has the merit of being poisonous only to flies, is made of the yolk of an egg, beaten up with a tablespoonful each of ground black pepper and molasses. It should be poured in shallow plates and set about. This is a simple process by which to catch the few flies that slip into a house before the screens are put up, for most housekeepers wait until warned by the buzzing insects of their arrival to put in these safeguards.

A Cup of Coffee.

It is astonishing how many curious and unpalatable concoctions go by the name of coffee, but when one sees the ingredients and the brewing thereof, he or she can understand the pedigree of the black or muddy witch-like potion that is so frequently set before the traveler or even the family.

I spent some time last summer on a ranch and this is the way they made the coffee: To commence with, they bought a peculiar looking and smelling compound that came in a large package or can, already ground and labeled pure Java coffee. Pure fiddlesticks! The man who put up that stuff probably only knew Java by name and was not personally acquainted.

Well, they took a cupful of "it" and put it into a coffee-pot which was in an advanced stage of decrepitude, the inside being tanned to a color that would have made a meerschaum pipe highly prized; then they poured on hot water, and boiled and boiled it. At first it gave out a somewhat appetizing odor, but, as the boiling progressed, this feeble spark of vitality went out or dissolved into ether. A cup of this liquid cured me of my penchant for coffee, which lasted until I struck the genuine article again.

At another stopping place the coffee (always bought ground, and in cans or packages) was this time mixed with an egg, treated to a bath of boiling water and allowed to simmer only a few minutes, then set back to keep hot, but not boil. This was intelligently prepared on the best principles, served with delicious, thick cream and drank with relish, but oh, how unlike a cup of real Java and Mocha. Had these been prepared in that way, the results would have been a drink fit for the gods, or, to be more material, fit to place before the most critical and capacious man that ever lived.

The very best plan is not to buy ground coffee at all, unless you can select the bean and have it ground at once, under personal supervision. And the best coffee loses much flavor and strength by being ground, unless in small quantities, for it deteriorates with age. It is far better to purchase the browned kernels and grind them each morning for use. A coffee-mill costs but a trifle, and is absolutely necessary to obtain the result in view.

Don't ask for Mocha outside of large cities, or you will put your groceryman to the painful necessity of fibbing.

Before going any further, let me quote from a New Orleans paper as to the adulteration of coffee and chicory, ground of course: "In these is found the raspings of carrots, of beans, of glands, of torrifed bread, of beet pulp, of brick dust, and of ochre."

There is really no Mocha in a country town. Java may be bought, but what is generally under that name is really Rio or Kona. The Menado Java is about the best in the market, and this mixed with Costa Rica or Rio makes a palatable and healthy drink. The same cannot be said of the ground mixture.

In selecting browned coffee, reject it if very dark or scorched and dull looking, the proper color being a yellowish brown, somewhat bright looking.

You cannot be too careful as to the sanitary condition of your coffee pot, which should not lose its color, and should be well scalded before each using and emptied after the meal. Should economy dictate its being reserved for another repast, let me tell you it is a poor way to do. Better make less and have it fresh when needed. Now as to the best varieties; tastes differ. For ordinary family use Java and Rio, Bohemian Club (a blend), or Java and Costa Rica, make a good cup. Costa Rica should be added for strength and is desirable for black coffee. Some grocers make a specialty of blends, which are prepared with fine discrimination by experts. There are many ways of making really good coffee. A well-known authority pours a cupful of boiling water on the grounds and lets it steep a few minutes like tea, then fills up the pot to the desired quantity. This is economical and an excellent drink is obtained. Another way is to break an egg on the grounds, and, adding the crushed shell, mix well. Pour on boiling water, let boil two or three minutes—no longer—and then set back to keep hot. This is the most popular way and productive of good results. Still another way, much adopted by sheep-herders, lumbermen and campers, is to put cold water on the requisite proportion of the ground berry and let come to a good boil. Set aside to settle, and the best part of your breakfast will be in good order.

A Philadelphia doctor of repute gives the following directions for coffee, which he says "is more healthy and better flavored

for a quarter of the expense of common coffee": Coffee by weight or measure, one-fourth; rye, three-fourths. Look them over separately to remove bad grains, then wash to remove dust, draining off the water and drying well. Brown in a skillet, stirring all the time, to do so evenly. Brown the rye separately; then mix evenly, and grind only as used, settling with a beaten egg, and serve with cream and sugar as usual.

For those who are camping or remote from markets, let me recommend their trying some of the various brands of condensed coffee and milk that retail at from 35 to 45 cents each for one-pound tins. They simply require heating, sweetening and diluting as desired.

To visitors at the Ceylon exhibit in the Liberal Arts Building, at the Midwinter Fair, their coffee was a revelation. Through the courtesy of the gentleman in charge, I was able to secure some of the unprepared coffee, and will give further information in some future article. I will finish this with a description of the ordinary Turkish way of preparing this berry, which produces a different result from that to which we are accustomed. The vessel used consists of a small conical saucepan with a long handle. The fresh roasted berry is pounded, not ground, and about a dessert spoonful is put into the minute boiler. It is then nearly filled with water and thrust among the embers. It boils in a few seconds, and the decoction, grounds and all, is poured out into a small cup which fits into a brass socket, much like the cup of an acorn, and holding the china cup, as that does the acorn itself. The Turks drink this liquid boiling hot, and swallow the grounds with it. It is always taken without cream or sugar. In every Turkish hut these coffee boilers may be seen suspended, and the means for pounding the roasted berry always at hand. KATE C. HUBBARD.

Santa Cruz.

Personal Beauty.

Several English medical journals have recently called attention to a fact, sustained by common observation, that the young women of the present day are better developed physically, taller, plumper, stronger and healthier than the young women of fifty, a hundred, a hundred and fifty or two hundred years ago, and that in this continuous and perceptible improvement of condition and aspect there are no steps backward. One journal has called attention to the circumstances that, whereas a century or two ago a handsome woman inspired sentiments of such admiring curiosity that her arrival or departure drew vast crowds and rewarded the patient waiting of hundreds; beauty of the same sort is so general now-a-days as to evoke no ripple of excitement. It is no longer so rare that it commands peculiar attention. Again, the portraits of women of acknowledged loveliness preserved in many houses and galleries, or public buildings, and wondered at for many years, cannot stand comparison with many living countenances whose good looks are so little beyond the ordinary as to inspire neither poet, painter, composer nor sculptor with a subject for rhapsody in sonnet, on canvas, by lyric, or in marble. But the change to which English writers on hygiene allude in scientific phrase and without passion or emotion, is not limited to their field of personal observation. Generally speaking, the proportion of handsome women is larger than it used to be, and uncomeliness is diminished correspondingly. The true causes of this are probably two: (1) Improved health, the result of a more scientific mode of life, better hygienic conditions, larger latitude in outdoor exercise, better nutrition, better physical culture, and softening and equalizing of the climate; and (2) better taste in dress, the introduction of new and becoming methods of attire, improved style, a greater variety of fabrics and colors, and such cheapening of materials for a girl's wear as to bring them within the reach of all.—Toronto Truth.

The Compass Plant.

"Among the many wonders of the Western plains," said Garrett C. Hughes of Boulder, Colorado, "nothing strikes the traveler of a scientific turn of mind with more surprise than the 'compass plant.' The leaves of this singular plant are magnetic and its petals point constantly to the north. These wonderful prairie guides have on numerous occasions proved to be an inestimable benefit to travelers who strayed away from their camp and companions and found themselves lost on the plains. In 1860, while on my way to the Rocky mountains by a wagon train, a party of us, who had left camp on a hunt for antelope, lost

our way owing to a dark, stormy night overtaking us. We knew that our train was camped about ten miles to the northwest of where we were thus overtaken. The night was as dark as pitch, and we were beginning to be alarmed, when one of our number happened to think of the compass plant and its singular peculiarity. We at once dismounted and groped about in the dark till at last our hands came in contact with the familiar leaves of the plant. It was but a short calculation till we turned our horses' heads in the right direction toward the camp, which we had the satisfaction of reaching in about two hours, but not until we had dismounted several times to feel among the leaves of this friendly guide to make sure of our course."—St. Louis Globe-Democrat.

To Boys.

By Mrs. A. Ashley.

Boys, there is an old saying: "Make yourself worth having and you'll be wanted." Did you ever think how much of this is your own work and what a brave work it is?

A beautiful hymn says: "A charge to keep I have; a God to glorify." You have more; you have a God to obey. Who will punish you with unhappiness if you don't heed the little voice called conscience that whispers the right and the wrong to you. You can't be cruel, disobedient and vicious without showing it in your faces. "As he thinketh in his heart so is he," says proverbs. Keep body and soul pure, and look the world straight in the face. A youth told me that the boys laughed at him for being a "goody goody," till he took up their ways, smoked cigarettes, played "hooky," cheated in games and trades, and, to show his authority, whipped his little brother to make him do tricks, then hired him not to tell. At last he ran away with tramps and occasionally took a "tip" in saloons, till sickness laid hold of him and turned his tired feet to the dear, forgiving home. His father died and he had to get work. He went to a good man who looked him sharply in the face and said, "You've a bad eye; I don't want you." Then the little voice whispered, Frank, this is your work! You've smoked, read dime novels and played big man till your face shows it. You're a coward! Then he made a new resolve and has kept his place three years in a hardware store, when others have been turned away. What a grand work is yours! The first step is obedience to parents. Will you repeat with me the fifth commandment, "Honor thy father and thy mother, that thy days may be long upon the land which the Lord, thy God, giveth thee." Think of it—long years of right living in a goodly land!

Sweeping With Compressed Air.

One of the most notable of the present century's small inventions is an air pump for cleaning purposes. A hose pipe charged with air under 50 pounds pressure to the square inch is turned upon the article or room to be cleaned. It is used in precisely the same way as the water and the hose for washing purposes. It is far more effective in its result than brooms, beaters or brushes, as it searches out and penetrates every crevice and cleft in woodwork.

This device is at present applied to cleaning cars, but so perfect is its work that it is only a question of time when it will come into use for other purposes. Hotels and large buildings might be swept out and dusted in an incredibly short space of time. Carefully managed, this air pressure would rid the room of every particle of dust, clean furniture, carpets and the heavier articles of bric-a-brac and ornaments. It would do the work of a dozen people.

It is now in order for some home missionary to invent some simple device that will work an air pump and current for household use. Its introduction would revolutionize housekeeping and solve the heretofore hopeless problem of clean rooms, and will keep furniture covers and carpets. It

would be economical, as it would render less service necessary and would save a large portion of the wear and tear of furnishing textiles. In houses where there is hydrant water it would not be at all difficult to attach an air pumping apparatus to the kitchen or bath-room faucet, and thus furnish power for every floor.

Some years ago it was said that there would never be an invention that could sweep the dust, but at the present rate of things the problem is practically solved by this simple and easily used device.

DOMESTIC ECONOMY.

BREAD FLAPJACKS.—Take a pint of stale bread crumbs and pour over them a pint of hot milk in which a tablespoonful of butter has been melted. Soak over night. In the morning strain through a colander and add two eggs, one cup of flour, two teaspoonfuls of baking powder and a little cold milk if necessary.

CURRY BALLS.—Put one cup of rice into a double boiler with one cup of milk. Cook slowly until the rice has absorbed the milk, then stir. Add the yolks of four eggs, a teaspoonful of salt, two teaspoonfuls of curry powder, a teaspoonful of onion juice and a piece of butter the size of a walnut. Mix all well together over the fire and turn out to cool. When cold form into small balls about the size of a walnut. Dip in egg and then in fine bread crumbs and fry in smoking-hot fat. This makes a nice garnish for fried chicken with cream sauce.

MILK BISCUIT.—Put one quart of sifted flour into a bowl, add to it a heaping tablespoonful of butter or lard; rub well together with the hands until the flour is thoroughly greased; add two heaping teaspoonfuls of baking powder, a teaspoonful of salt, and sufficient milk to make a soft dough (about half a pint); mix and knead quickly. Roll out about half an inch thick, cut with a small round cutter, place two inches apart in greased pans and bake in a quick oven 15 or 20 minutes. These biscuits should be a delicate brown top and bottom, light on the sides and snowy white when broken open.

MRS. CLAY'S BEEFSTEAK PIE.—Cut three pounds of lean steak into strips three inches long and four inches thick; put it to stew in sufficient boiling water, but not enough to cover the meat. After stewing slowly half an hour add a little sweet thyme, a tablespoonful of parsley chopped fine, a good-sized onion cut in slices, and pepper. After the seasoning is added, continue stewing till the meat is very tender. Now add enough cornstarch to make the gravy as thick as cream, adding at the same time salt and Worcestershire sauce. Have ready six or eight hard-boiled eggs, and place them in alternate layers with the meat in a pie dish; pour the gravy over all and cover with rich pastry. A dash of nutmeg (if liked) added to the gravy is an improvement. The gravy should be tolerably thick and not too much of it. Be careful not to put too much water into the meat at first, and do not fill the pie dish to within an inch and a half of the top. A lean steak is better for this than a sirloin, which is too fat. This pie was eaten on the shore of the sea, on the rock where Bermudey landed hundreds of years ago, and was a foretaste of Elysium.

Gems of Thought.

The way of the world is to make laws but follow customs.—Montaigne.

Whatever makes men good Christians makes them good citizens.—Daniel Webster.

The one exclusive sign of a thorough knowledge is the power of teaching.—Aristotle.

For where we love is home, home that our feet may leave, but not our hearts.—Jean Ingelow.

Sidney Smith once wrote: "Macaulay is like a book in breeches. * * * He has occasional flashes of silence that make his conversation perfectly delightful."

Highest of all in Leavening Power.—Latest U. S. Gov't Report.

Royal Baking Powder
ABSOLUTELY PURE

PATRONS OF HUSBANDRY.

Random Thoughts.

By A. P. ROACHE, W. M. S. G. of California.

If truth be a fruit, on a thorn tree grown,
Not many more people would let it alone.

News from grange fields of Colorado gives the cheering assurance that the efforts of National Lecturer Messer are resulting in much good. New granges are being organized and dormant ones revived in many sections.

Copies of Bro. Ostrom's resolution, unanimously passed by the Grange Congress at the Midwinter Fair, relative to the immediate construction and entire Government control of the Nicaragua Canal, have been forwarded to our Senators and Representatives, and to the President at Washington.

In an official communication from Bro. J. J. Woodman, of the National Grange Executive Committee, this office is notified that the next session of the National Grange will be held in Springfield, Illinois, on the 14th day of November next.

If four million two hundred and twelve thousand dollars for the maintenance and prosecution of State affairs are annually expended, let us mortgage the State for the little that is left after such a draft and emigrate to Alaska; or, as sensible, reasonable business people, let's cut that ridiculous, enslaving, unnecessary tax squarely in half, no longer keep out desirable immigration by the present terrific tax ordeal to which all are subjected, and let us have this Mecca of the accident managed for the benefit of its people, and not its pets. Think of it—an expenditure of nearly four and a quarter millions of dollars annually, for the government of a million and a half of as industrious and progressive a people as ever developed statehood.

The question is asked, Why don't agriculture, through the grange, rid itself of the countless ills to which it is heir, especially through its system of organized co-operation, which it so confidently claims is a panacea for most of its evils? The answer is very simple: If the combined efforts of a thousand men were absolutely necessary for the performance of a certain task and only one hundred men should work upon it, they would either fail in the accomplishment of their object or it would require much time to complete it. Just so with the grange. Out of thirty millions of people engaged in or tributary to agriculture, less than three millions are organized. Is there any wonder that it has not yet reached the height of its possible and probable greatness, when compelled to fight its battles with an army of less than three millions, with no assistance from the twenty-seven millions other than that they are very free to accept the fruits of the victories the little army valiantly gains—see?

The question is also asked, What is a reformer? We give it up; but I venture to suggest that, in the light of present occurrences, he must be the fellow who pulls off his coat, grasps both sleeves in his right hand, and, wildly girding to right and left, howls forth the beautiful sentiment that he is "in favor of anything that is against the Government."

Man knows much of the moon and stars,
The mighty wave and the earthquake jars,
The laws of nature, the play of mind,
And the records which history leave behind.
But of all strange things
In this world of pelf,
Is the one sad fact, he knows little of self.

Though late it be, the wild flowers yet linger lovingly in the lap of early summer; though grain is abundant and cheap, though vine and fruit tree are laden with their precious treasures, we are all hungry for a perfumed thought from the bowery realms of Flora; for a golden thought from the stubble fields of the domain of Ceres; for a sweet and beautiful thought from the bewildering universe of Pomona. May we not, dear sisters, ask this much at your hands, that the weary and benighted may be cheered along the wayside of life, and that hope, that mainspring of happiness, may chase away the care-worn shadows so perceptibly lengthening on the honest, earnest faces of so many of our beloved sisters and brothers.

Field Day in American River Grange.

ROUTIERS, June 4, 1894.

TO THE EDITOR:—On Friday, May 25th, American River Grange held a harvest feast and initiated a class into the order. Bro. Flint was with us and conferred the third and fourth degrees in his usual eloquent manner. Owing to busy times the meeting was not so well attended as usual. After the feast the grange was closed and open

meeting held. Bro. Flint made an able speech upon the political issues of the day, and was followed by Bro. Schelmeyer of Elk Grove, Bros. Plummer and Wilson, of Enterprise, and others. So that, although the day was wet and blustery, the afternoon passed quickly and pleasantly. W. S. M., A. P. Roache was expected to be with us, but owing to prior engagement was unable to attend. The recent rains in this vicinity have greatly benefited late grain, although doing considerable damage to hay.

J. CORNELL.

Keep Off the Grass.

TO THE EDITOR:—Whatever may be the cause or the combined causes of the widespread industrial disturbances will not be inquired into in this paper. That wretchedness, destitution and hunger are the conditions of tens of thousands in this broad land of liberty no one can deny, and thousands of these men forced into idleness are organizing themselves into armies and are marching toward Washington, to show the people and the law-makers the miseries and sufferings of the industrial classes, and to petition Congress as the only available source of relief. When Coxey halted his army in front of, but many rods distant from, the Capitol, two war-scarred veterans were seen to emerge from the ranks and walk rapidly up the steps of the Capitol. The one, Coxey, was armed with a pair of glasses on his nose, his petition to Congress, in manuscript, in his hand; and the other, his lieutenant, Carl Browne, had a more formidable weapon concealed about his person—that of a lecture on reincarnation. The newly varnished policemen's clubs fairly shimmered in the sun as the policemen rushed up the steps to stop these valiant warriors, and Coxey was denied the poor privilege of reading his petition even in front of the Capitol. Mr. Coxey, when denied the right to speak, in behalf of those he represented, from the steps of the National Capitol, issued a protest, of which the following is a portion. Who can find fault with it, or deny the strength of the statement?

"We come to remind Congress here assembled of the declaration of a U. S. Senator, 'that for a quarter of a century the rich have been growing richer, the poor poorer, and that by the close of the present century the middle class will have disappeared as the struggle for existence becomes fierce and relentless.' We stand here to remind Congress of its promise of returning prosperity, should the Sherman act be repealed. We stand here to declare by our march of over 500 miles through difficulties and distress, a march unstained by even the slightest act which will bring the blush of shame to any who are law-abiding citizens, and as such our actions speak louder than words.

"We are here to petition for legislation which will furnish employment for every man able and willing to work, for legislation which will bring universal prosperity and emancipate our beloved country from financial bondage to the descendants of King George.

"We have come to the only source which is competent to aid the people in their day of dire distress. We are here to tell our representatives, who hold their seats by grace of our ballots, that the struggle for existence has become too fierce and relentless. We come and throw up our defenseless hands and say, 'Help, or we and our loved ones will perish!' We are engaged in a bitter and cruel war with the enemies of all mankind—a war with hunger, wretchedness and despair—and we ask Congress to heed our petitions and issue for the nation's good a sufficient volume of the same kind of money which carried the country through one awful war and saved the life of the nation.

"Up these steps the lobbyists of trusts and corporations have passed unchallenged on their way to committee rooms to which we, the representatives of the toiling wealth-producers, have been denied. We stand here to-day in behalf of millions of toilers whose petitions have been buried in committee rooms, whose prayers have been unresponded to, and whose opportunities for honest, remunerative, productive labor have been taken from them by unjust legislation which protects idlers, speculators and gamblers."

How prophetic these words were in the light of the recent Havemeyer and the sugar ring scandal!

Only a day or two ago a meeting was held in the city of New York to protest against an income tax. This meeting was largely attended by men whose net income ranged from five to twenty-five thousand dollars daily, men who are desirous of putting the burdens of government on the shoulders of those who receive from five to twenty-five hundred dollars per year. Suppose at this

meeting a delegation had been named to go to Washington to defeat the income tax bill, and from their lodgings at the Shoreham, the Normandie, the Willards, the Ebbets and other fashionable hotels they had marched along Pennsylvania avenue to the Capitol. Do you think there would be 500 extra policemen to block the way to the Capitol? Not so. But you would have witnessed on the part of city and government officials an exhibition of the most abject flunkeyism and possibly an address of welcome would have been read to them. But then, you know, Mr. Editor, there is a wide difference between tweedledee and tweedledum. Theoretically the right to petition is as sacred to the poor as to the rich, but practically petitions from the poor are pigeonholed or die in committee rooms where petitions from corporate greed and power are always to the front. Is there a human being so avaricious, so deaf to the pleading of the defenseless, starving poor as not to wish Mr. Coxey and his followers a God-speed in their efforts to ameliorate the condition of the poor?

If the object lesson now being taught by the presence of Coxey's army at the doors of the Capitol will move Congress out of the disgraceful do-nothing policy pursued by Republicans and Democrats alike, it will deserve the hearty commendation of all honorable men.

Congress is fiddling while Rome is burning; each party is striving to make political capital for the next election, while the industries of the country are being torn to shreds.

The San Francisco Chronicle, in referring to Coxey's army, said: "If any persons attempted to overthrow our form of government they should be shot to death." Read again Mr. Coxey's protest and point out wherein he is trying to overthrow the government. He takes his followers to the Capitol of the nation asking its protecting power in behalf of half-starved men and women throughout the country.

But suppose some of his followers, in their frenzied zeal to get out of sections of the country where they can get no work or food, do commit some overt act, it matters but little to them whether they die from having their bodies filled with leaden bullets or from starvation. It is not the form of government they wish to disturb but the practices that have grown up under it, as it is a well-known fact that the leaders of both political parties have looked upon poor, suffering, struggling humanity as the means only to an end—the upbuilding of the few in wealth and power at the expense of the many. Examine the United States statutes, if you will, and you will find a large part of legislation is purely private, clothed in language of public legislation having beneath the surface the scheme of some rich corporation or private individual to take something from the general body of the people in some way to advance the private ends of corporations or individuals. This kind of legislation should be stopped, unjust laws should be repealed, our Eastern seaport towns should be hermetically sealed to the cheap labor of Europe as are the western ports closed against cheap labor from Asia; this contemptible do-nothing policy of Congress should be corrected, if not before, then at the ides of November.

AMOS ADAMS.

San Jose, June 10, 1894

Tulare Grange.

Since last report in the RURAL, Tulare Grange has held two regular meetings—the first on the 19th of May, at which the third and fourth degrees were conferred on a class of three, after which a lunch with ice cream and cake was had; the second on the afternoon of Saturday last.

After the routine business of the grange, Bro. Shoemaker, who was appointed a committee to interview the supervisors with a view of having them reclassify this county—its having since last classification been divided, Kings county having been wholly taken from Tulare—reported the communication of this grange to the Board of Supervisors had been filed, and he (Bro. Shoemaker) was informed the matter would be considered when he would be called on to appear before the Board; but so far no notice to appear had been given him, and he believes the Board of Supervisors have pigeonholed the communication.

Bro. Julius Forrer, foreman of the U. S. Experimental Station at this place, read his monthly record of meteorological observations.

The subject for consideration at this meeting, being the "Utility of Farmers' Institutes and the equity of their receiving a portion of the appropriations by the State to maintain district agricultural societies," was taken up. Farmers' Institutes in many

States receive State aid. All heretofore held in this district have been at the expense of Tulare Grange. Such institutes, wherever held, are productive of good. The grange discussed the subject and passed the following resolutions as expressive of its views:

Tulare Grange, No. 193, P. of H., realizing the usefulness of Farmers' Institutes, and having from its own resources provided for and paid all expenses of all said institutes heretofore held in this county, and Tulare and Kings counties forming Agricultural District No. 43 with an annual appropriation from the State of \$1500, this grange deems it equitable and just that an allowance of 20 per cent of the State appropriation to the Forty-third Agricultural District shall be set apart to this grange to defray the expense of a spring and fall Farmers' Institute—the fall Farmers' Institute to be held at the time and place of holding the district fair and to continue not less than two days.

A committee consisting of Bros. Tuohy, Wood and Sister Ingham was appointed to interview the directors of the Forty-third Agricultural Society for the purpose of getting the foregoing appropriation.

It is hoped other subordinate granges and the State Grange will take this subject up, as Farmers' Institutes and the grange aid each other.

Mr. Lubin's proposition to have the Government carry surplus farming produce will be considered at the meeting on July 7th in open session. Tulare Grange would like to get expressions on this subject from all thoughtful Patrons of Husbandry.

AS IN YOUTH Ayer's Hair Vigor CORDIALLY INDORSED.



RESTORES
Natural Growth
OF THE
HAIR
—WHEN—
ALL OTHER
Dressings
FAIL.

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How to See Cataract in Your Own Eye.

The following simple method enables a patient to see a cataract in his own eye and note its growth and development, probably better than any oculist can observe it for him:

Cataract is said to be due to the gradual deposition of oxalate of lime in the substance of the crystalline lens, at first in small spots or streaks, sometimes in one part and sometimes in another. The deposit gradually increases until it penetrates the whole of the lens, causing blindness. The remedy, then, is to remove the lens, and after its removal the patient needs a substitute in the form of highly magnifying spectacles.

All that is necessary to enable a patient to see his own cataract for himself is a piece of card and a needle—a visiting card will do very well. Pierce a clean round hole near the middle of the card and hold the card up to the light close to the eye, looking preferably in the direction of a piece of blue sky. With the card near to the eye, the patient will not see the small hole pierced by the needle, but he will see a comparatively large faintly illuminated field with his cataract projected upon it. He is, in fact, observing the shadow cast by his cataract on the retina at the back of his eye. With a small puncture in the card the shadow so thrown is comparatively sharp. But with a normal eye an evenly illuminated field or clean disk will be seen. The patient may thus map down his own cataract, and settle for himself whether it is extending and whether he will have an operation or not. None of the oculists I have seen have known of the method, and there may, consequently, be some advantage in making it public.—J. S., in Knowledge.

The New Battle Ships.

The naval stability board has completed and submitted to the Secretary of the Navy its report upon the stability of the battle-ships Indiana, Massachusetts and Oregon. Practical heeling or inclining tests were made to ascertain the behavior of the vessels under all possible conditions of load. The result is highly gratifying to the department, for it justifies in all respects the designs of the vessels, and shows that they are superior to any warships afloat of corresponding size. The calculations of the bureau of construction, when the designs of the vessels were completed, showed that they were to have, with 400 tons of coal aboard and all weights, a total estimated weight of 10,093 tons. The actual weight or displacement was 10,162 tons, a variation of only two-thirds of one per cent. The designed draught was 24 feet; the experiments show that it is actually from 23 feet 11 inches to 24 feet. The excess buoyancy was to be 195 tons; it was actually 126 tons. The metacentric height was to be 3 feet 5½ inches; it was 3 feet 4½ inches.

In choice of instruments it is better to choose men of a plainer sort that are like to do that that is committed to them, and to report faithfully the success, than those that are cunning to contrive somewhat to grace themselves, and will help the matter in report.—Bacon.

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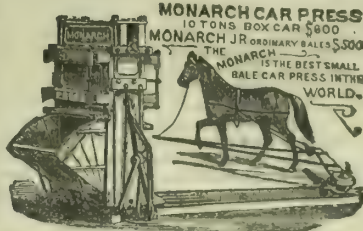
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AGRICULTURAL NOTES.

CALIFORNIA. Alameda.

They do some things in a big way in the Livermore valley. The Pleasanton Times reports that 75,000 boxes of tomatoes and 240 tons of cucumbers will be furnished to San Francisco packing houses from the Rancho del Valle cucumber and tomato fields this season. Also, J. E. Lawrence shipped 17 tons of gooseberries from his gooseberry farm near Dublin, to San Francisco this week. We understand Mr. Lawrence will leave about ten tons of berries on the vines, as the price paid for gooseberries is so small that it does not justify gathering them. The price paid is \$20 per ton. Last year the price for gooseberries was 3 1/2 cents per pound, or \$70 per ton, and the year before they sold at 7 cents, or \$140 per ton.

Colusa.

Colusa Sun: The Chinaman was once a necessity. His arm was the only one available to save the crop. It is not so at the present writing. Men, skilled and unskilled, honest women, bright girls, and industrious boys of good habits are offering their services wherever there is fruit to be gathered or farm work to be done. Cherry-pickers are to be had on every hand for the asking at \$1 per day and board, or at a piece rate correspondingly low. In the face of these facts there is one orchardist—only one—in this neighborhood who has this year filled his trees with Chinamen to the exclusion of white people.

The Colusa Sun has been observing the effects of irrigation on the wheat land of J. M. Ritchie, one mile west of town. Close by and adjoining an irrigated field where the grain was full and rank, were other fields of like land which could not be irrigated as the water in the river had receded before it could be wet. The grain on this was very thin, and plainly showed the great need of water, while that over which the water had spread was of the finest quality and showed the great benefit produced by irrigation. The two different sizes of grain produced on this place from average good land, and produced within a few feet of each other, the one with irrigation, the other without, show plainly the results which are consequent to irrigation. It is strange, after seeing the effects of this, the people are so backward in their movement to further the plans of irrigation in this county. A small piece of ground with irrigation will raise several times as much grain as a piece of land the same size without the advantages of water.

Fresno.

Fresno dispatch, June 7th inst.: Word has reached here that John Shipp, son of W. W. Shipp, of this city, perished in the mountain storm. He had a large band of sheep near the foot of Mount Goddard, and while the report is not verified it is feared that it is true. Authentic reports from various places in the mountains show a heavy snowfall and severe cold. Very heavy losses to all sheep men are reported.

Los Angeles.

Los Angeles Times, 9th inst.: There has not been any particular change in the weather or the crop outlook in southern California during the past week. The little sprinkle of rain which fell recently has been of some benefit to potatoes and corn, but came too late to help the grain, and has injured the hay crop. Fruit of all kinds continues to look well, and promises a heavy yield. Early apricots are coming into the market, but they are small in size. Strawberries and cherries are plentiful. Some very fine strawberries have been brought to Los Angeles from Santa Barbara, selling at a high price.

Los Angeles Herald: A disease resembling the influenza in man is raging among the horses of southern California. The epidemic is worse in some localities, and here in Los Angeles it has become alarming. The veterinarians are unable to classify the disease, but treat it in a general way as they would the gripe in horses. The disease is of catarrhal form, and becomes first noticeable on account of nasal discharge. It does not have the effect of the strangles or distemper, but acts similarly, affecting the breathing and causing a high temperature. The disease is at its worst in 24 hours after first attack upon its victim. After it runs along two or three days the animal refuses its food, but there are no other alarming conditions, except the frequent nasal discharge. While the symptoms differ in some respects from the influenza, it is treated as such. So far as known, there have been but few fatal cases among horses in this city, but the disease has not been prevalent long enough for its true results to be fully known and understood. Scarcely three weeks have elapsed since its inception in this vicinity, but during this time many alarming cases have been treated. In cases where immediate steps are taken to cure, before the animal is afflicted for more than two or three days, there has been little trouble to eradicate the germ, and the horse, when properly cared for, is soon as well as ever. The prevalence of the unknown disease calls to the mind the great epizootic age in the '70s and the influenza among horses in '87-'88, when there were many fatal cases. Some veterinary surgeons contend that the present scourge is the same with which horses were afflicted all over the country in '87-'88. They called it influenza then, but a few peculiar and different symptoms noticeable now tend to vex them in the study of the disease.

Merced.

Merced Express: At the Buhach plantation near Merced there are acres and acres of the pyrethrum plant now in bloom, and the work of gathering the blossoms will soon commence. The plant and the blossoms look very much like marguerites. From the blossoms of the pyrethrum plant is manufactured what is known as buhach, or the deadly insect powder, which in summer months is in great demand all over the country. When the plant is in full bloom the flowers are gathered, and there are a large number of men engaged in the work, the labor being mostly done by Chinese, and the work has to be done in a hurry, as the season for gathering the blossom is short. The manner of gathering the flower is as follows: The plant is set out in long rows four feet apart, and men pass down these rows

with large shears and the blossoms are cut from the plant with stems about a foot or eighteen inches long; other men come along with trays which are something like a Sedan chair, on which are mounted steel combs. The bunches of flowers are taken from the ground and pulled through the steel combs and the blossoms fall into the tray, and when full they are loaded on a wagon and taken to the drying house, and when dry they are ground into powder, which is packed into tin cans holding from one to ten pounds.

Riverside.

Riverside Press: It is now conceded that the Fruit Exchange has been the salvation of the growers the past season. The desirability of such an organization is no longer questioned, and yet one would be led to believe from the rumors abroad in the valley that some doubt exists as to its continuance. This doubtless arises from the fact that it is thought to be so desirable by so large a proportion of growers that no question can arise as to its continuance, and therefore a small minority hope to profit by standing aloof and taking advantage of the situation to find an early market for their fruit on a cash basis. We therefore embrace an early opportunity to drop a word of caution to such as may be planning on such a proposition. While the desirability of maintaining the exchange has a strong hold upon the mass of growers, we speak from personal knowledge of the conditions when we say that a very large number of its most ardent supporters do not propose to play the "umbrella" act for any considerable percentage of their neighbors whose interests are equally involved. . . . It is also announced that an attempt is being made to secure control of fruit to be handled by parties outside upon the representation that they will operate in harmony with the exchange in the matter of maintaining prices, etc. This is a proposition that needs to be cautiously examined, for it is hardly possible to arrange a plan on this line which can be safely followed. It is the very proposition upon which we have broken down before, and it is not clear how we can safely attempt it again.

San Bernardino.

Redlands Citrongraph: As yet we can learn of no quotations on apricots. One man was offered \$20 per ton and asked \$30, but as yet we can hear of no sales and very few offers, probably for the reason that every buyer is waiting for others to take the initial step and thus set some basis on which to bid.

Santa Clara.

Gilroy Advocate: We hear that the first shipment of California wine to arrive at Manchester, England, by the ship canal which was recently opened to that town, was an invoice of three thousand gallons of wine from the Solis Fruit and Wine Company of Gilroy valley. Another shipment of several thousand gallons is to be made in a few days. The wine from this local vineyard is winning its way into public favor in that country and so the fame of Gilroy products is becoming world-wide.

The Saratoga Standard says that the late rain storm did much damage in the foothill region. It says: "The orchards have suffered severely, a vast quantity of fruit being blown off the trees, and a number of trees being either split or torn up by the roots. The vineyards have suffered in a like measure. Mr. A. Marengo estimates his loss at one thousand dollars. All the fruit-growers in the district report severe losses. They agree with our German friend. While listening to the storm and viewing the havoc wrought in his orchard and vineyard he exclaimed: 'Ach Gott! I am busted!'"

Santa Cruz.

Watsonville Pajaronian: Pajaro valley does not now make much pretense as a grain-growing district but we doubt if there is any section of California where grain looks as well this year. The grain fields of Pajaro are a pleasing sight in this year of general drought.

A meeting of Pajaro valley fruit-growers recently held at Watsonville decided to organize a local fruit exchange to operate in conjunction with the State Exchange. There will be 1000 shares in the corporation; par value, \$5 per share.

Sonoma.

Santa Rosa Democrat: A poultry-raiser says that the fruit-grower can combine fruit-growing and poultry-raising without occupying more land than would be required for one pursuit, and the results from the orchard and from the hens would be more satisfactory. The fowls can be made to assist in protecting the trees by giving them loose soil for dusting near the trunks of the trees, and placing their drinking water under the trees and feeding them at the base of each tree.

Stanislaus.

Modesto Herald: The late rains have brought out some late-sown crops on the West Side, especially about Grayson, where an inch fell last Friday and a heavy precipitation on Monday. L. A. Richards will go over 2500 acres that he otherwise would not have touched, and numbers of others will have some grain.

Tulare.

Tulare Register: There is no good reason why the plows should not be set going now and kept going along into July. This rain can be turned to some account in that way, and if the opportunity is improved, the storm will not be wholly lost. The land that suffered the burning out of the crop will not be much the better for having been plowed last winter unless plowed again, for the straggling grain sapped all the moisture out of it before it gave up the ghost; but if plowed now, this moisture will be retained and will count next season. What summer-fallow there was from last year has paid this season for all the work done on it, and it is the only land outside the irrigated areas that has done anything at all.

C. P. Berry in Visalia Delta: The vineyardists of Fresno county can tell you, and the press has already told its readers, how very destructive the big green worm with an upright horn on one end of him is to the grape-grower. Observing the habits of the sphinx moth, which is the producer of this worm, I am led to the belief that the preference shown by this moth in depositing its eggs is to use the weed called jimson weed, or old-fashioned "stink weed." I would urgently request all

ranchers, the town of Visalia, or any other town for that matter, to have all the jimson weeds within their corporate limits destroyed at once. On the public or private roads this weed should be destroyed. On all the ranches of the county this weed should be annihilated at once.

C. J. Berry writes to the Tulare Times how to get rid of the pumpkin bug, as follows: "Take some dry wood ashes and sprinkle it lightly with coal oil just enough to flavor it good; then put the ashes about the main stalks of the vine where it comes out of the ground. This should be done to all your melon vines, too. This bug is very destructive; he eats the vine off at its base, thus destroying it all at once. This striped stink bug is here now."

Ventura.

Ventura Democrat: At one time it was thought that there would be a very light crop of hay, and that the price of that feed would go very high. Now it is known that there is considerable hay in the county and the price will probably be in the neighborhood of \$10 to \$12 per ton, or even lower. Then, the facilities for irrigation here are so good that thousands of acres of farm and fruit lands will be made to produce as abundantly as in "wet years." The orange, lemon and apricot crops are fine. In fact the yield of apricots was never so large as this year. Two years ago S. E. Sealey raised on 25 acres 300 tons of apricots, which netted him over \$10,000. This year he informs us he will have a great many more than that, probably 400 tons, and numbers of other apricot-growers say the crop never was so large before. Mr. Williams this week advertises for 450 persons to cut fruit at his drier and Mr. Sealey advertises for 50. Mr. N. W. Blanchard is employing a small army of men picking and packing citrus fruits, while Mr. Crumrine has just finished gathering his, having employed 12 to 15 persons. Ventura county is reasonably prosperous, even while other counties are complaining of hard times.

Yolo.

Knight's Landing letter in Woodland Democrat: A great deal of the hay crop on the Fair ranch is in the stack; that is safe. Between six and eight hundred tons is in the bale, and that is also safe. Three or four hundred acres has not yet been raked; that will bleach and possibly rot. Quite a big lot is in the shock, but the shocks only dressed down a little with the fork after having been thrown up with a rake are in no condition to turn rain. The wheat crop, or a portion of it, may be ripe enough to cut by the 10th of this month.

C. T. ROGERS & SONS,

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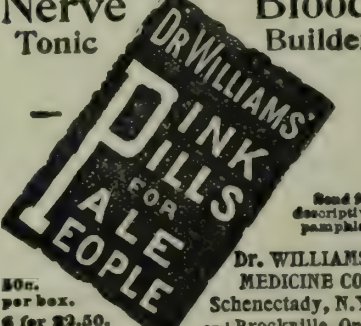
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Write for prices and catalogues; state what you want, and whether CASH or TIME is wanted.

I. J. TRUMAN & CO.,
No. 18 Drumm street,
San Francisco,

S. F. MARKET REPORT

Market Review.

SAN FRANCISCO, June 13, 1894.

The local wheat market is looking decidedly better, but there is still scarcely any business on shipping account. The first car of new Wheat has come to hand, and consignments in the near future are likely to be more or less governed by the demand on export account. In the speculative market there is somewhat active trading, with rather buoyant tone to prices. December wheat, for instance, closed yesterday at \$1.09 3/4, while this morning it went as high as \$1.13 1/4, though closing lower. For shipping purposes No. 1 Wheat is quotable at 90c per ctl., with 92 1/2c for something choice. Milling grades range from 97 1/2c to \$1.05 per ctl.

Barley.

The tone of the market is of rather buoyant character, without any special enthusiasm in the premises. There is a good feeling among holders generally, and all surroundings seem to favor the selling interest. Trade in feed descriptions is a little slack, but whatever business is done is mostly at full figures. Brewing Barley is not in request at the minute, and quotations are somewhat nominal. At the same time it should be remarked that offerings of brewing quality are quite slim. We quote: Feed, 92 1/2 to 93 1/4c for fair to good and 95c per ctl. for choice; Brewing, \$1.07 1/4 ctl.

Dried Fruits.

The new season will open in about a month hence. Orchardists are getting their drying apparatus in condition and it will not be long before the drying of Apricots will commence. We quote as follows: Apples, 6@6 1/2c for quartered, 6 1/2@7c for sliced and 9@11c for evaporated; Pears, 6@8c per lb for bleached halves and 2@4c for quarters; bleached Peaches, 10@11 1/2c; sun-dried Peaches, 7@8c; Apricots, nominal; Prunes, 5@5 1/2c for the four sizes, —c for the five sizes and 3 1/2@4 for small; Plums, 4@5c for pitted and 1 1/2c for unpitted; Figs, 3@4c for pressed and 1 1/2@2c unpressed; White Nectarines, —@—c; Red Nectarines, —@— c lb.

Raisins.

Continue in fair supply at easy rates. California Layers, 60c@51c; loose Muscates, in boxes, 50@75c; clusters, \$1.25@1.50; No. 1 loose, in sacks, 2 1/2@3c per lb; No. 2 do, 2 1/4@2 1/2c; dried Grapes 1 1/2@1 3/4c per lb.

General Produce Market.

OATS—There is not much business in progress, and the market shows unsettled feeling. Supplies are ample and the indications are not favorable for any immediate change for the better in values. We quote: Milling, \$1.20@1.30; Surprise, \$1.35@1.40; fancy feed, \$1.27 1/2@1.30; good to choice, \$1.15@1.25; poor to fair, \$1.05@1.10; Black, nominal; Red, nominal; Gray, \$1.10@1.20 per ctl.

CORN—Offerings are not excessive, but the demand is slow and prices show fairly steady tone. Quotable at \$1.20@1.22 per ctl for Large Yellow, \$1.30 for Small Yellow and \$1.32 1/2@1.35 for White.

CRACKED CORN—Quotable at \$27.50@28.50 per ton.

CORNMEAL—Millers quote feed at \$27@28 per ton; fine kinds for the table, in large and small packages, 2 1/2@3 1/2c per pound.

OILCAKE MEAL—Quotable at \$35 per ton from the mill.

COTTONSEED OILCAKE—Quotable at \$30 per ton.

SEEDS—We quote: Mustard, brown, \$2@2.25; Yellow, \$3@3.25; Triese, \$2.50@2.75; Canary, 3@4c; Hemp, 3 1/4@4 1/4c per lb; Rape, 2@2 1/2c; Timothy, 6 1/2c per lb; Alfalfa, 10@11 1/2c; Flax, \$3@3.25 per ctl.

MIDDLEINGS—Quotable at \$18@19 per ton. MILLSTUFFS—We quote: Rye Flour, 3 1/2c; Rye Meal, 3c; Graham Flour, 3c; Oatmeal, 4 1/4c; Oat Groats, 5c; Cracked Wheat, 3 1/2c; Buckwheat Flour, 5@5 1/2c; Pearl Barley, 4 1/4@4 1/2c per lb; Normal Nutrient, \$3 per case of 1 dozen cans; Breakfast Delight, \$3.25 per case of 2 dozen packages.

BRAN—Receipts have been quite liberal this week, coming mainly from Washington and Oregon, but quotations are undisturbed. Quotable at \$14.50@16 per ton.

FEED—Manhattan Horse Food (Red Ball Brand) in 100-lb cabinets, \$8. Manhattan Egg Food, 100-lb bags, \$11.50.

HAY—Good stock brings top prices. New Wheat sells at a range of \$10@13; new Wild Oat, \$9@12 per ton. Wire-bound Hay sells at \$1 per ton less than rope-bound hay. Following are the wholesale city prices for rope-bound hay: Wheat, \$12.50@15.25; Wheat and Oat, \$11@14; Wild Oat, \$11@13.50; Alfalfa, \$9@12; Barley, \$10@12; Compressed, \$12@15; Stock, \$8@10 per ton.

STRAW—Quotable at 70@80c per bale.

HOPS—Nothing doing. Nominal at 11@13c per lb.

RYE—Quotable at \$1.07 1/2@1.10 per ctl.

BUCKWHEAT—Nominal.

GROUND BARLEY—Quotable at \$21.00@21.50 per ton.

POTATOES—We quote new: Early Rose, 60c@51c; Peerless, 60c@51c per ctl.

ONIONS—Have been coming in freely this week. Quotable at 30@40c per ctl for Reds.

DRIED PEAS—We quote: Green, \$1.50@1.75; Blackeye, \$1.60@1.85; Niles, \$1.50@1.75 per ctl.

BEANS—Nothing of interest has developed in a week. The demand is light and slow and the tendency of the market is in favor of buyers. We quote as follows: Bayos, \$2.15@2.25; Butter, \$1.75@1.80 for small and \$2@2.20 for large; Pink, \$1.75@1.85; Red, \$2.30@2.50; Lima, \$3.25@3.40; Pea, \$2.35@2.50; Small White, \$2.40@2.60; Large White, \$2.25@2.40 per ctl.

VEGETABLES—Rhubarb keeps steady, not being in heavy receipt. Choice Asparagus is firm, but an inferior article is weak and slow of sale. Tomatoes are coming in quite freely. Corn and Peppers are both in moderate receipt. We quote as follows: Cucumbers, \$1@1.25 per box; Asparagus, 75c@1.25 per box for ordinary run and \$1.50@2.25

per box for choicer quality; Rhubarb, 35@50c per box; Green Peas, \$1.25@1.50 per sk; Garden Peas, 2@2 1/2c per lb; Summer Squash, 25@40c per box for Vacaville and \$1@1.25 per box for bay; String Beans, 3@5c per lb; Refugee Beans, 3 1/4@5c per lb; Wax Beans, 2@3c per lb; Green Corn, 15@20c per doz; Marrowfat Squash, \$20 per ton; Hubbard Squash, —@— per ton; Green Peppers, 10@12 1/2c per lb; Tomatoes, \$1@1.50 per box; Turnips, 75c per ctl; Beets, 75c per sack; Parsnips, \$1.25 per ctl; Carrots, 35@40c; Cabbage, 60@75c; Garlic, 2 1/2@3c per lb; Cauliflower, 60@70c per dozen; Dry Peppers, 17 1/2@20c per lb; Dry Okra, —c per lb.

FRESH FRUIT—The market is quite interesting just now, owing to large display, with attractive assortment. Cherries are still a glut, and some offerings of poor White are unsalable at any figure. Peaches and Apricots are showing increased receipts. Currants are in good supply, though selling at a wide range in price. We quote as follows: Peaches, 40@75c per box; Figs, — per lb; Cherries, white, 10@25c; do, loose, 1/2@1 1/4c per lb; Royal Ann, 1 1/2@2c per lb; black, 20@30c per box; do, loose, 1@2c per lb; Apricots, Pringle, 25@30c per box; do, Seedlings, 35@50c; do, Royal, 40@60c per box; Currants, \$1.50@3.50 per chest; Cherry Plums, 30@40c per drawer; Apples, 25@50c per box; Pears, 30@40c per box.

BERRIES—Stocks of Gooseberries are cleaned up, and prices are steadier in consequence. The Watsonville train was behind time this morning, but the market did not suffer for Strawberry supplies. Blackberries make fair representation, though some lots come in bad order, showing mildew. We quote as follows: Newcastle Raspberries, 75c@1.25 per crate; Alameda Raspberries, \$5@9 per chest; Strawberries, \$5@6 per chest for Sharpless and \$10@12 for Longworths; Blackberries, \$6@8 per chest; Gooseberries, 1@2c for common, and 3 to 4c per lb for the English variety.

CITRUS FRUIT—Warm weather is likely to increase the demand for Limes and Lemons. There is very little inquiry for Oranges, as no really choice stock is offering. Fair to choice Navel Oranges, \$1.25@2.50 per box; Seedlings, 75c@1.25; Mexican Limes, \$3.50@4 per box; Lemons, Sicily, \$4@5; California Lemons, 50c@1.25 for common and \$1.50@2.50 for good to choice; Bananas, \$1.50@2.50 per bunch; Pineapples, \$2.50@4 per dozen.

NUTS—Chestnuts, 6@8c per lb; Walnuts, 6@7 1/2c for hard shell, 8@9c for soft shell; 8@9c for paper shell; California Almonds, 10@11c for soft shell, 6@7c for hard shell and 11 1/4@12 1/4c for paper shell; Peanuts, 3@4c; Hickory Nuts, 5@6c; Filberts, 10@10 1/2c; Pecans, 5@8c for rough and 8@10c for polished; Brazil Nuts, 8@9c; Coconuts, \$5@5.50 per 100.

HONEY—Market inactive. There is firm holding, stocks being light. Comb, 10 1/2@11 1/2c per lb for bright and 9@10c for dark to light amber; water white extracted, 6 1/2@7c; amber extracted, 5 1/2@6c; dark, 4 1/2@5 1/2c per lb.

BEESWAX—Quotable at 24@25c per lb.

BUTTER—Talk is again revived of having auction sales of Butter, and it is possible that the experiment may be tried. The market continues to be well supplied and quotations have but little strength. We quote: Fancy Creamery, 16 1/2@17c; fancy dairy, 15@16c; good to choice, 13@14c; store lots, 11@12 1/2c; pickled roll, new, 19@20c per lb.

CHEESE—Liberal supplies keep the market in favor of buyers. We quote: Choice to fancy, 8@9c; fair to good, 6 1/2@7 1/2c; Eastern, ordinary to fine, 14@15c per lb.

EGGS—Good ranch Eggs are in demand and strictly select parcels find prompt custom at full figures. Common stock moves slowly. We quote: California ranch, 14@16c; store lots, 11@13c; Eastern, 12@13 1/2c per dozen.

POULTRY—The market is showing a little better tone, without any positive change in prices. We quote: Live Turkeys—Gobblers, 9@11c; Hens, 10@12c; Roosters, \$4@5 for old and \$7.50@9 for young; Broilers, \$1.50@2.50 for small and \$4@5 for large; Fryers, \$6@7; Hens, \$5@6.50; Ducks, \$3 for old and \$4@5 for young; Geese, \$1 for old and \$1@1.50 for young; Pigeons, \$1.25@1.50 for young and \$2.25@2.50 per dozen for old.

GAME—Nominal.

PROVISIONS—We quote as follows: Eastern Sugar-cured Hams, 13c; California Hams, 11 1/2@12c; Bacon, Eastern, extra light, sugar-cured, 14@15c; medium, 10c; do, light, 10 1/2c; do, light, boneless, 12c; light, medium, boneless, 10 1/2@11c; Pork, extra clear, bbls, \$20; hf bbls, \$10.50; clear, bbls, \$19; hf bbls, \$10; boneless Pig Pork, bbls, \$21.50; hf bbls, \$11; Pigs Feet, hf bbls, \$4.75; Beef, mess, bbls, \$7.50@8; do, extra mess, bbls, \$8.50@9; do family, \$9.50@10; extra do, \$11@11.50 per bbl; do, smoked, 10c; Pickled Tongues, hf bbls, \$8; Eastern lard, tierces, 7 1/2@8c; do prime steam, 10c; Eastern pure, 10-lb pails, 10 1/2c; 5-lb pails, 10 1/2c; 3-lb pails, 10 1/2c; California, 10-lb tins, 9c; do, 5-lb, 9 1/2c; do, kegs, 10 1/2c; do, 20-lb buckets, 10c; compound, 7 1/2c for tierces.

WOOL—Local business is exceedingly dull, the market being wholly inanimate. We quote spring: Year's fleece, per lb., 5@7c; Six to eight months, San Joaquin, poor, 5@6c; do fair, 6@8; Oregon and Washington: Heavy and dirty, 6@7c; good to choice, 8@10c; valley, 10@13. Nevada: Heavy, 6@8c; choice light, 9@10c. We quote fall: Northern defective, 5@6c; Southern and San Joaquin, 3@4c.

HIDES AND SKINS—Quotable as follows:

	Sound.	Culls.
Heavy Steers, 54 lbs up, per lb.	4 1/2@5c	3 1/2@4c
Medium Steers, 48 to 56 lbs.	4 @—c	3 @—c
Light, 42 to 47 lbs.	3 1/2@3 3/4c	2 1/2@2 3/4c
Cows, over 50 lbs.	3 1/2@3 3/4c	3 @—c
Light Cows, 30 to 50 lbs.	3 1/2@3 3/4c	2 1/2@2 3/4c
Stags.	3 @—c	2 @—c
Kips, 17 to 30 lbs.	4 @—c	3 @—c
Veal Skins, 10 to 17 lbs.	5 @—c	4 @—c
Calf Skins, 5 to 10 lbs.	7 @—c	6 @—c

Dry Hides, usual selection, 7c; Dry Kips, 7c; Calf Skins, do, 7c; Cull Hides, Kip and Calf, 4c; Pelts, Shearling, 10@20c each; do, short, 25@35c each; do, medium, 40@50c each; do, long wool, 50@75c each; Deer Skins, summer, 25c; do, good medium, 15@20c; do, winter, 5c per lb; Goat Skins, 25@40c apiece for prime to perfect, 10@20c for damaged, and 5@10c each for Kids.

San Francisco Meat Market.

The market continues to be liberally furnished with the several kinds. Prices remain easy. Following are the rates for whole carcasses from slaughterers to dealers:

BEEF—First quality, 5@5 1/2c; second quality, 4@5c; third quality, 3 1/2@4c per lb.
CALVES—Quotable at 4@6c per lb.
MUTTON—Quotable at 5@6c per lb.
LAMB—Spring, 6 1/2@7 1/2c per lb.
PORK—Live Hogs, on foot, grain fed, heavy and medium, 4 1/2c; small Hogs, 4 1/2c; stock Hogs, 3 1/2@4c; dressed Hogs, 6 1/2@7 1/2c per lb.

California Fruit in the East.

CHICAGO, June 12.—Porter Brothers Company sold at auction to-day four cars of California fruit at the following prices: Clyman Plums, \$3.25@4.05; Royal Hative Plums, \$2.75; Cherry Plums, 95c@1.95; Montgamet Apricots, \$2.05; Royal Apricots, \$1.35@1.75; Seedling Apricots, \$1.25@1.35; Newcastle Apricots, \$1@1.05; Alexander Peaches, \$1.05@1.50; Tartarian Cherries, 95c@1.55; some, bad order, 45c@1.20; Bigarreus, 60c@1.55; Clevalands, 45c@1.40; Gov. Woods, 50c@1.30; Eagles, \$1.05; Pontiacs, 65c.

BOSTON, June 12.—Porter Brothers Company sold at auction to-day a car of California Cherries, as follows: Royal Anns, \$2.75; Tartarians, 80c@

\$1.75; Bigarreus, \$1.05; Clevalands, 87 1/2c; Gov. Woods, 75c.

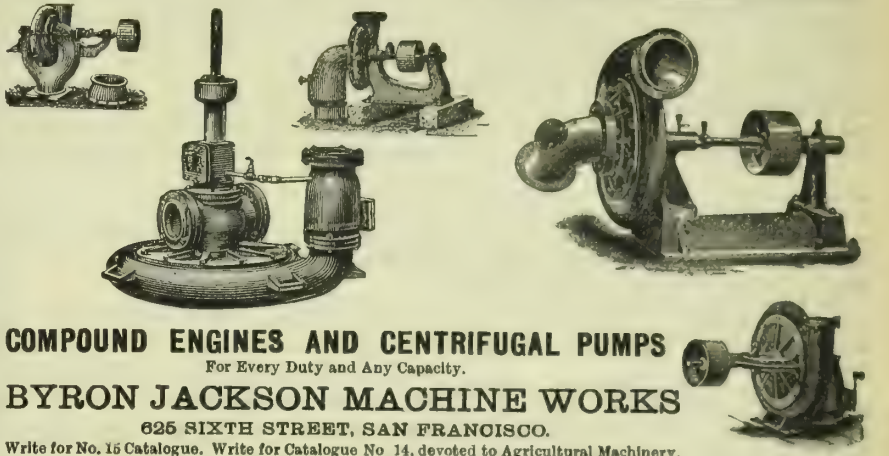
MINNEAPOLIS, June 12.—Porter Bros. Company sold at auction to-day a car of California Cherries at 60c@1.35.

NEW YORK, June 12.—The Earl Fruit Company to-day sold: Black Tartarian Cherries, \$1.25@1.75 per box; Governor Wood, \$1@1.30; Elton, \$1@1.40; Orleans, \$1@1.10; Rockport, 90c@1.55. Some fruit in damaged condition sold for less.

BOSTON, June 12.—The Earl Fruit Company to-day sold: Black Tartarian Cherries, \$1.35@1.65; some bad order, 65c@1.15; Bigarreus, \$1@1.05; Rockport, 75c@1.25.

CHICAGO, June 12.—The Earl Fruit Company sold two carloads of California Fruit at auction this morning, realizing the following prices: Cherries—Tartarian, \$1@1.40; Bigarreus, \$1.10@1.30. Apricots—Royal, \$1.35@1.80; Pringle, \$1.05@1.10; Spanish, \$2; Seedlings, \$1@1.15; Alexander Peaches, \$1.35@1.65; Cherry Plums, \$1.15. Weather is hot.

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From Grains of Wheat to Flour.

One who has never been in a flouring mill of the largest size cannot realize what a peculiar lot of noises are made by the machinery. As soon as the wheat enters the machine from the long spout which brings it down from the upper floors, it falls between two rollers of iron—"chilled" iron, they call it, and very hard iron it is, too. One of these rollers revolves rapidly, the other more slowly, in order that the separation of the coat, or bran, from the kernel may be more easily accomplished.

The wheat first passes between rollers separated just enough to allow the coat to be crushed. It is then carried away up to the top of the mill again to a room where the sun vainly tries to shine in through the flour-coated windows far above the city's roofs. It next passes over a wire sieve, which separates the bran from the kernel proper.

This bran, which contains much of the flour material, again passes down and is ground once more, this process being repeated four times, making five grindings, each one finer than the one preceding it.

Each time the fibrous or bran portions are more completely separated, and at last the bran comes out a clear, brownish husk, with every particle of flour removed.

The inside part of the kernel has meanwhile been going through a very interesting process. After the first grinding or breaking, it passes to a big six-sided revolving wheel, covered with a fine wire netting or sieve. Through this reel the finer portions of the kernel pass, coming out in what is called "middlings," a granulated mass, which goes back to the rollers for another crushing.

The process is repeated through five reels, all but the first being of silk. The last one has 120 threads to the lineal inch. The flour which comes out of the fifth reel, while white in hue, is yet not of the finest or "patent" grade, but is classed as "baker's" or second-grade flour.

The middlings above referred to are purified by an interesting process. They are passed over a fine wire sieve, through the upper part of which a strong current of air is passed. This holds in suspense the tiny portions of fibrous matter which may have been in the flour, and, at last, after this process of middlings purifying has been carefully carried out, the flour appears a spotless, shown white—the "patent" flour, as it is called.

In the process of grinding in this gradual and repeated way the germ of the wheat—a tiny particle about the size of a mustard seed—is separated from the white flour. It is what one might call the life part of the wheat.

If it were ground up it would not leave the "patent" flour so white and powdery, so it is separated in one of the sievings and passes into the darker or lower grade of flour. It contains, however, the best and most nutritious part of the wheat.

The last thing that happens to the pulverized kernel before it is ready for market is the filling of barrels or sacks. Down many stories through a smooth tube comes the white or patent flour. Under the tube is the barrel or sack, as the case may be, and, as it begins to fill, a steel auger just the size of the barrel bores down into the flour, packing it carefully and solidly beneath the broad blades.—St. Nicholas.

The Trade in Flints.

The oldest industry in Great Britain—older it could hardly be, for its existence has been traced back to the pre-historic stone age—is still being carried on at the village of Brandon, on the borders of Norfolk and Suffolk, and is reported to be in a flourishing condition. It is the manufactory of gun and tinder-box flints. The work is done in little sheds, often at the back of townsfolk's cottages. It will naturally be asked, "Who wants tinder-box flints and gun flints in these days of phosphorus matches and Martin-Henrys?" The answer to the first question is that there is a good trade in tinder-box flints with Spain and Italy, where the tinder-box still keeps its ground in very rural districts. Travelers in uncivilized regions, moreover, find flint and steel more trustworthy than matches, which are useless after they have absorbed moisture. Gun flints, on the other hand, go mostly to the wild parts of Africa.

A CATERPILLAR in the course of a month will devour 6000 times its own weight in food. It will take a man three months before he eats an amount of food equal to his own weight.

The Main Full of Beer.

"The most curious thing I saw in Europe," remarked Wm. M. Hoff, of San Francisco, who has just returned from a tour of the old world, "was the manner in which beer was served at Stuttgart. It is piped all over the city, just like water, and the consumer pays a beer rate, just as he pays water and gas rates. Two immense breweries furnish the supply, and because of their political 'pull' they have monopolized the entire beer trade of that immense city. Their mains make a perfect underground network, with smaller pipes tapping them at distances of twenty to fifty feet. The pipe is made of a lead composition, and to preserve the beverage from impurities which the chemical properties of the beer would generate in contact with the metal, the pipe is lined with a thin layer of wood pulp. This makes it possible for every man in Stuttgart to be his own bartender. All he has to do is to turn the spigot and the pipe does the rest. The pipes, of course, are air tight, so that the amber liquid is as pure and sparkling when drawn in one's home as when taken from a bottle or passed over the bar by a knight of the apron. You can readily see how this system of serving beer cheapens it to the consumer. It does away with an army of middlemen, for every family who patronizes the breweries gets the beverage first hand. This unique experiment has already become an established success in Stuttgart, and is growing in popularity so fast, that every large city in Europe is talking of adopting it."

Lick School of Mechanical Arts.

'Tis nearly twenty years since Jas. Lick left large sums for sundry local public purposes, but several of the bequests are yet devoid of tangible form. The Lick School of Mechanical Arts has the present attention of the trustees, and a three story building 70x125 feet will be built this summer. The clay modeling department, cooking rooms and chemical laboratory will be in the basement. The science reception room, library and museum will be on the first floor. The serving rooms, mechanical drawing departments, iron and wood shops, etc., will occupy the remainder. Geo. A. Merrill, recently principal of the Cogswell school, will be principal.

A Curious Puzzle.

Open a book at random and select a word within the first ten lines and within the tenth word from the end of the line. Mark the word. Now double the number of the page and multiply the sum by 5. Then add 20. Then add the number of the line you have selected. Then add 5. Multiply the sum by 10. Add the number of the word in the line. From this subtract 250, and the remainder will indicate in the unit column the number of the word, and in the ten column the number of the line and the remaining figures the number of the page.

There is more Catarrh in this section of the country than all other diseases put together, and until the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease, and prescribed local remedies, and by constantly failing to cure with local treatment, pronounced it incurable. Science has proven Catarrh to be a constitutional disease and therefore requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, Ohio, is the only constitutional cure on the market. It is taken internally in doses from 10 drops to a teaspoonful. It acts directly on the blood and mucous surfaces of the system. They offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address F. J. CHENEY & CO., Toledo, O. Sold by Druggists, 75c.

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RUPTURE.

It has been considered by the medical profession that hernia—commonly called rupture—was incurable, except by surgical operation, which is both dangerous to life and very rarely ever successful. But Dr. J. C. Anthony of 86 & 87 Chornicle Building, has opened a new field for research, and for the past year has been making some remarkable cures. He causes the patient no pain and those living near enough do not lose any time only while in his office once or twice weekly. He guarantees every case he treats and does not ask a man for a dollar unless he cures him so there can be no chance of any one being cheated. The doctor is a graduate of Bellevue Hospital Medical College, of New York City.

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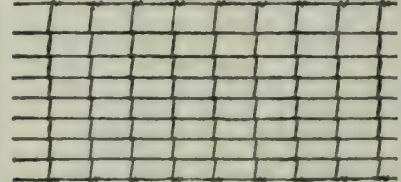
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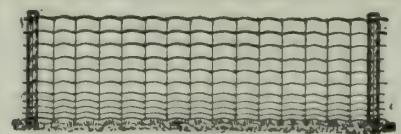
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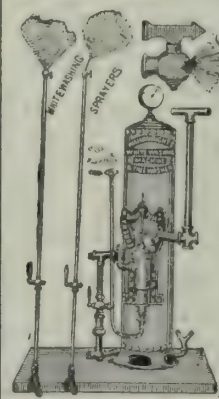
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400 yards of white-washing may be done in one hour by

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Machines at prices from \$3 to \$50. Send for Circulars of Spraying Apparatus, Garden and Lawn Sprinklers, Hose, &c. Agents Wanted.

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The Raisin Industry.

A PRACTICAL TREATISE ON THE RAISIN GRAPES, their History, Culture and Curing. By Gustav Eisen. This is the Standard Work on the Raisin Industry in California. It has been approved by Prof. Hilgard, Prof. Wickson, Mr. Chas. A. Wetmore and a multitude of practical raisin-growers. Sold by the DEWEY PUBLISHING CO., or its Agents at the uniform price of \$3, postage prepaid. Orders should be addressed:

THE DEWEY PUBLISHING CO., 220 Market St., San Francisco.

Coast Industrial Notes.

—The season's seal catch has been the largest for many years.

—It is proposed to establish a State ice manufactory at Folsom prison.

—Men are reported working on Lassen county ranches for fifty cents a day.

—Fresno county is about to build a canal to tide water at an expense of \$150,000.

—Fresno county is shipping wine to Liverpool via Cape Horn. The freight is about seven cents a gallon.

—Members of the Consumers Ice Company of this city say they can manufacture ice for \$2.50 per ton.

—The German Government this year has ordered 200,000 gallons of California brandy for use in hospitals, choosing it in preference to French.

—From the slow way in which work is being done at the Union Depot at the foot of Market street, it is evident this century will not see its completion.

—The Senate has voted to put manufactured as well as rough lumber on the free list, which will be eminently acceptable to British Columbia lumber men.

—Several English fire insurance companies with San Francisco agencies will decline future American business, the alleged losses making necessary their withdrawal.

—Wells, Fargo & Co. propose to prevent future train robberies so far as possible, and are having twenty-five cars fitted up for the run between here and El Paso, Texas, with chilled steel safes and other protection against burglars.

—The Northern Pacific Company is about to build new coal bunkers at Tacoma, nearly treble the size of any other bunkers in the Northwest, having a capacity of 15,000 tons, costing \$60,000, and enabling a 5000-ton cargo to be loaded in eight hours.

—The present relation between supply and demand in the lumber business is exemplified by the fact that while the 250 shingle mills in the Northwest have a combined cutting capacity of 18,000,000 shingles daily, the average present monthly shipments do not exceed 100,000,000.

—Representative Doolittle of Washington has introduced a bill to appropriate \$100,000 for ascertaining the subterranean water supplies in Idaho, Montana, Washington and Oregon, lying east of the Cascade mountains, and ascertaining the localities at which artesian wells can profitably be dug. It is proposed to have the work done by the Geological Survey.

—The Colfax *Sentinel* reports that water was turned into the new South Yuba canal last Wednesday, and for the first time in the history of the divide the residents will be able to secure water for irrigation purposes and to furnish power to run quartz mills. The South Yuba Company has spent several hundred thousand dollars in these improvements, and they intend to eventually furnish Sacramento with pure mountain water.

—S. J. Klein, a Roumanian, is conducting negotiations for the purchase of 200,000 acres of land belonging to the Mitchell estate in Merced county. If the deal is carried through, 14,000 Roumanians will settle in California as colonists. These Roumanians are of German descent and live in Bessarabia. They are dissatisfied with the arrangement whereby Bessarabia was ceded to Russia, and want to get away from Russian rule.

—Frank Johnson, of the Johnson-Locke Mercantile Co., would like to see California merchants and manufacturers reach after the South African trade, which is great and growing. He will dispatch the large iron steamer Santa Clara for Capetown direct about July 1st, provided 300 passengers are booked. There is good business to be secured with that section, now nearly altogether in English hands, and a direct line to the South African gold fields is in direct line with securing such business.

—Fish Commissioner Crawford of Washington has furnished the following statistics of the fishing industry of the State: Fishermen were paid by Washington canneries five cents a pound for salmon; the catch amounted to 6,721,435 pounds. They also sold to Oregon canneries to the value of \$150,000. The value of the spring pack of the Washington canneries for 1893 was \$790,432, and of the fall pack, \$35,000. The amount received by Washington fishermen on the Columbia river for 1893 was \$626,071. The sturgeon catch was valued at \$52,635. The Gray's and Willapa harbor fishermen were paid \$23,439 by the canneries and sold elsewhere salmon to the amount of \$11,000. The value of the salmon pack in the Puget Sound district for the same time was \$269,000.

Engineering Skill.

An ingenious use made some time ago of a rapid river current in India aptly illustrates the fertility of resource of the average engineering contractor. At a certain point along the river a temporary bridge was urgently necessary for the transportation of materials to be used in the building of an important neighboring structure, but the only available material was a quantity of three-inch planking, about ten feet long and a little over three feet wide, and some ordinary round timber cut from a neighboring forest. Pontoons were made of two single planks, placed about 15 feet apart, each plank being held on edge at an angle of about 50° from the vertical, both inclining up stream, and kept at their proper distance by framing made from the round timber already mentioned. Both pontoons were moored to a chain. The peculiarity of the bridge, of course, was that the water pressure upon the inclined surfaces of the planks, due to the swift current, permitted them to carry a considerable load, and the structure served its purpose admirably, accommodating a pretty lively traffic for an unexpectedly long period.

A NEW and what must prove to be an interesting field for investigation has just been suggested, namely, that of the psychology of the weather. A few observers have already paid some attention to it, and so far the results of their inquiries would appear to point to the fact that many very powerful forces, coming from what is popularly called the weather, control the operations and success of brain-workers. Experimenters and others engaged in mental tasks of an exacting description have found faulty deductions and misconception to be the result of their work in damp, foggy weather, or on days in which the air was charged with electricity and thunderstorms were impending. Indeed, deductions which seemed clear at these times appeared later to be filled with error. An actuary in an insurance company is obliged to stop work at such times, because he finds that he makes so many mistakes. A further confirmatory fact is that in large factories from 10 to 20 per cent less work is accomplished on damp days and days of threatening storm than when the weather is fine.

Hernia.

Attention is directed to the advertisement of Dr. J. C. Anthony in another column. Though a graduated physician, Dr. Anthony makes the treatment of rupture a specialty. His method is scientific, and the great success with which he has treated some of the most difficult cases, effecting complete cures, has given him a high, wide-spread and well-deserved reputation. Those who are afflicted will do well to call upon or correspond with him, at Room 87, Chronicle Building, this city.

BEST INCUBATOR MADE!

Hot water; perfect ventilation; continuous moisture; self regulating; new model; chickens removed without opening machine. Don't buy until having seen this. 108-Egg, \$25; 216-Egg, \$40; 324-Egg, \$55; 604-Egg, \$75. Now is the time to use Wellington's Improved Egg Food. Every Grocer has it. Address B. F. WELLINGTON, 425 Washington St., San Francisco.

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—AND—

HOW TO GROW THEM.

A MANUAL OF METHODS WHICH HAVE YIELDED GREATEST SUCCESS; WITH LISTS OF VARIETIES BEST ADAPTED TO THE DIFFERENT DISTRICTS OF THE STATE.

PRACTICAL, EXPLICIT, COMPREHENSIVE.

Embodying the Experience and Methods of Hundreds of Successful Growers, and Constituting a Trustworthy Guide by which the Inexperienced may Successfully Produce the Fruits for which California is Famous

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Patents Issued to Pacific Coast Inventors.

Reported by Dewey & Co., Pioneer Patent Solicitors for Pacific Coast, 220 Market St., S. F.

FOR THE WEEK ENDING MAY 29, 1894.

520,558.—CALIFERS—Adas F. Brockway, Pasadena, Cal.
520,588.—BUCKLE—C. A. Conger, S. F.
520,670.—WATER PURIFIER—Day & Hunter, S. F.
520,731.—COMB CLEANER—H. Fisher, Sacramento, Cal.
520,732.—PENCIL SHARPENER—H. Fisher, Sacramento, Cal.
520,563.—PROPPELLER—O. B. Genty, Vallejo, Cal.
520,689.—WRENCH—H. Krebs, San Pedro, Cal.
520,697.—ELEVATOR—W. H. McCoy, Los Angeles, Cal.
520,443.—CAR COUPLING—W. S. Miller, Spokane, Wash.
520,541.—ADVERTISING WAGON—J. N. Russell, Los Angeles, Cal.
520,663.—PEN FENDER—E. F. Smith, Redress, Cal.
520,501.—CLOTHES DRIER—E. S. Sutton, Snohomish, Wash.
520,461.—KITCHEN CABINET—Minnie S. Thomas, Water-ville, Wash.
520,549.—PRESERVING EGGS—F. M. Underwood, Pasadena, Cal.
520,719.—BLAST FURNACE—Walker & Murphy, Globe, A. T.
28,310.—DESIGN FOR SPOON—C. S. Thompson, San Diego, Cal.

NOTE.—Copies of U. S. and Foreign patents furnished by Dewey & Co. in the shortest time possible (by mail for telegraphic order). American and Foreign patents obtained, and general patent business for Pacific Coast inventors transacted with perfect security, at reasonable rates, and in the shortest possible time.

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A fine assortment, best varieties, free from pests of any kind. Prunus Simoni, Bing, Kostraver and Murdoch Cherries, Black California Figs; Rice Soft Shell and other Almonds, American Sweet Chestnuts, Preparations Walnuts. Hardy mountain grown Orange Trees. Our Oranges have stood 22 degrees this winter without injury. Dollar Strawberry, the best berry for home use or market. Address C. M. SILVA & SON, Lincoln, Placer County, California.

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RIO BONITO NURSERIES, BIGGS, BUTTE CO., CAL.

Deciduous Fruit Trees Our Specialty.

THE MOST COMPLETE ASSORTMENT OF

GENERAL NURSERY STOCK GROWN ON THE PACIFIC COAST.

1,000,000 TREES FOR THE SEASON OF 1894-95 IN STOCK.

Acknowledged everywhere to be equal to the best. Guaranteed to be healthy and free from scale or other pests. Send for catalogue and prices. Correspondence solicited. Address

ALEXANDER & HAMMON,
BIGGS, BUTTE COUNTY, CALIFORNIA.

NAPA VALLEY NURSERIES.

(ESTABLISHED 1878.)

The Fruit Tree Planting Season being over for this season, attention is called to

Flower and Foliage Plants in Great Variety.

CHRYSANTEMUMS, the best of the best, now ready. Fine young plants for fall blooming. Ageratum, Achyranthus, Oxyeris alternifolius, Palms, Fuchsias, Geraniums, Carnations. FINE PLANTS AT LOW FIGURES.

A great variety of well-grown plants of the most favorite sorts. Send for catalogue. A magnificent stock of Fruit Trees being grown for next season.

LEONARD COATES, - - - NAPA, CAL.

Residence: Sausal Fruit Farm.

WRITE FOR CATALOGUE NO. 14 DEVOTED TO AGRICULTURAL MACHINERY.

The purpose of this notice is to inform both farmers and merchants, who use or sell Horse Forks, that they must not purchase Horse Forks that infringe the above Patents; and to call their attention to the fact that certain horse forks, manufactured by F. E. Myers & Bro., Ashland, O., and imported and sold by the Deere Implement Company, of San Francisco, are direct infringements of the above patents, the manufacturers of the infringing forks having admitted in Court that their forks were an infringement of the above patents, and are now paying royalty for manufacturing and selling them; and they have agreed not to sell any west of the Rocky Mountains.

All parties selling or using these infringing Horse Forks will be promptly prosecuted.

No. 197,137..Nov. 13, 1877
No. 210,458..Dec. 8, 1878
No. 306,067..Oct. 14, 1884
No. 403,019..May 7, 1889

BYRON JACKSON MACHINE WORKS,

OFFICE.....625 SIXTH STREET, SAN FRANCISCO.

Write for Catalogue No. 15, devoted to Pumping Machinery and Steam Engines.

STORE YOUR GRAIN WHERE YOUR BEST INTERESTS WILL ALWAYS BE CONSULTED.

Warehouses and Wharf
—OF THE—

Grangers' Business Association,

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Capacity of Warehouses, 50,000 tons; wharf accommodations for the largest vessels afloat.

Grain received on storage for shipment, and for sale on consignment.

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Open All Year.

A. VAN DER NAILLEN, President.

Assaying of Ores, \$25; Bullion and Chlorination Assay, \$25; Blowpipe Assay, \$10. Full course of assaying, \$50. ESTABLISHED 1894. Send for circular.

ERTEL'S VICTOR HAY PRESS
SHIPPED ANYWHERE TO OPERATE ON TRAIL AGAINST ALL OTHERS
PURCHASER TO KEEP ONE DOING MOST AND BEST WORK
GEO. ETEL & CO. QUINCY, ILL.



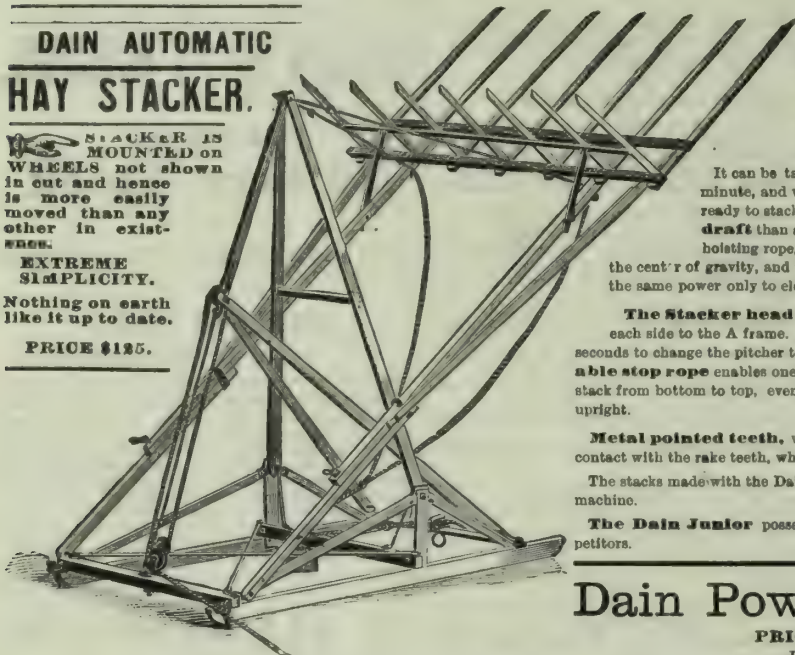
HAY STACKERS! HAY RAKES! HAY DERRICKS!

DAIN AUTOMATIC HAY STACKER.

STACKER IS MOUNTED ON WHEELS not shown in cut and hence is more easily moved than any other in existence.

EXTREME SIMPLICITY.
Nothing on earth like it up to date.

PRICE \$125.



This Stacker will put up more hay in less time, and do it better than any other device on the market. It is the **only Stacker** made that will deliver the hay into the center of the stack from top to bottom. With this machine it is possible to build a stack any height desired.

It can be taken down, or made ready to move in one minute, and when hauled to another part of the field made ready to stack in the same time. **One-third lighter** draft than any other, owing to its peculiar arrangement of bolting rope, together with a movable derrick pivoted near the center of gravity, and moving in a circle with the hay fork, requiring the same power only to elevate at all points of altitude.

The Stacker head will not sag, as there is a connection from each side to the A frame. Adjustable pitcher teeth; it requires but five seconds to change the pitcher teeth for topping out a stack. The adjustable stop rope enables one to discharge the hay in the center of the stack from bottom to top, even to letting the arms lean several feet back of upright.

Metal pointed teeth, which prevents their splitting by coming in contact with the rake teeth, which are also metal pointed.

The stacks made with the Dain Junior are not built against any part of the machine.

The Dain Junior possesses innumerable advantages over all competitors.

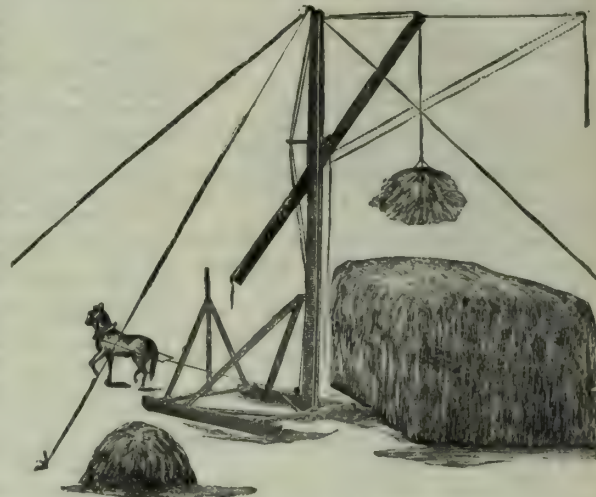
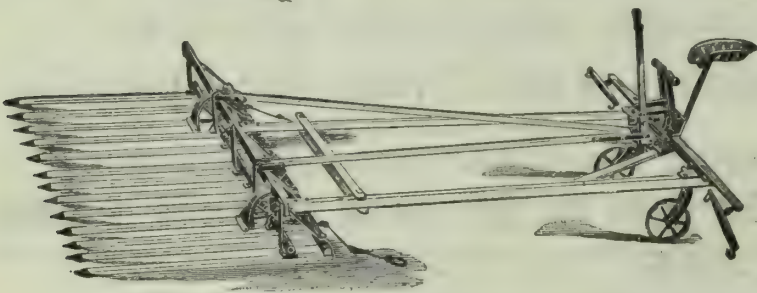
Dain Power Lift Rake.

PRICE \$60.

Is complete in every detail. The only Sweep Rake ever made that will positively carry the teeth entirely off the ground when heavily loaded. So simple any child can operate it with perfect ease.

The horses do all the work. By means of an automatic lever (which is connected to the inner ends of the doubletrees), the draft of the team is instantly applied (at the will of the operator) thus elevating the points of the teeth to any desired height, carrying them any distance over rough or uneven ground.

Our metal-pointed teeth, tubular steel axles, etc., are the same as we have used for several years. We have spared neither time or money in producing an absolutely perfect carrying rake.



THE OLIVER DERRICK—IN OPERATION.
PRICE \$119.

THE OLIVER DERRICK (PATENTED JANUARY 6, 1890.)

After a most thorough and practical test of this machine we offer it to our customers knowing that it will, in every particular, prove all that is required of a first-class derrick.

We claim for this machine: First—It is the only Derrick having an extension boom, whereby load can be deposited at any point on a very large rack.

Second—It is the only Derrick that can be easily and quickly folded for transportation. Horse used for hoisting hay can elevate mast and man can lower same.

Third—It is the only THOROUGHLY PRACTICAL Derrick in the market. It is well made of good material, and we will send it anywhere, guaranteeing satisfaction.

PURDY, SIERRA COUNTY, CAL., January 2, 1894.

Messrs. Hooker & Co., San Francisco, Cal.—DEAR SIR:—I sent you by express yesterday the amount due you from me for Oliver Derrick, which you will please send me receipt for. The Derrick is a good one and I would not take double what I paid for it. Yours truly,

OLANCHA, May 15, 1894.

Messrs. Hooker & Co., San Francisco, Cal.—DEAR SIR:—The Oliver Derrick I bought of you in 1892 is all that is claimed for it, is most convenient to move. I am well pleased and can recommend it. Yours respectfully,

AUG. WALKER.

We are Headquarters for all kinds of HAYING TOOLS.
Hay Forks and Hay Carriers of Every Description.

Agricultural Implements of every description. Vehicles in great variety.

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MOWERS AND RAKES

Are simple; are powerful; are easily handled; work well in all conditions of crop and give satisfaction. They are warranted. They have been sold in California and on the Pacific Coast for years. The demand for them is increasing. Machines and repairs are carried in stock at all the principal points. They are the best machines to buy. Write for handsomely illustrated circulars.

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WALTER A. WOOD HARVESTER CO.,

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INSURANCE COMPANY.

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\$1,000,000.

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—WITH—

Gilman's Patent Tule Tree Protector.

PATENTED AUG. 1, 1893.

Cheapest, Best and Only One to Protect Trees and Vines from Frost, Sunburn, Rabbits, Squirrels, Borers and other Tree Pests. For Testimonials from Parties who are using them send for Descriptive Circulars.

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Sole Manufacturer of Patent Tule Covers,
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KEROSENE OR GASOLINE ENGINES.

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IRRIGATION OF SMALL FARMS SIMPLIFIED.

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PACIFIC RURAL PRESS

Vol. XLVII. No. 25.

SAN FRANCISCO, SATURDAY, JUNE 23, 1894.

TWENTY-FOURTH YEAR.
Office, 220 Market Street.

Santa Catalina

As the mainland of California advances in population and importance in the eyes of the world, the attractions of its environment naturally become better known and appreciated. This remark is especially true with reference to the picturesque islands which lie off the coast of southern California and add so much to the beauty of the ocean views westward from the mainland. Until within the last decade these islands were only viewed from this distance, except by fishermen and goat-herders and scientific explorers. Their characteristic charms of scenery and climate were unknown to the public, except by hearsay. Recently, however, there has been an enterprising effort to make some of the islands more accessible and available for public enjoyment, and at present Santa Catalina island may be counted among the leading popular resorts of the State.

The views on this page give some suggestion of the delights of Catalina—the variety of its scenery, which includes both peaceful bays with bathing beaches; bold, rocky shores, against which at times the waves dash with charming fury; and picturesque canyons and dells, with lovely limpid streams and waterfalls. All these features are embodied in the composite engraving which we present, and which weaves together the best parts of half a dozen photographs.

Santa Catalina island lies in the Pacific ocean, about 25 miles southwest of San Pedro harbor, in Los Angeles county. It is approximately 25 miles in length, and perhaps 6 miles in width at its widest part, but throughout its greatest length it is but 1 to 3 miles from side to side. This gives the island a long shore line and plenty of room for the visitor who likes long walks or sails. There is much of interest, too, both in its land and water resources. The water teems with fish, and the land abounds with minerals of great interest and beauty.

Catalina is not only a resort of no little prominence, but is fast coming to the front by adding wealth to our southern country. Valuable quarries of soapstone and serpentine ornamental and building stone have been opened up and are causing great interest among the build-

ing community. The serpentine stone is very beautiful, having, on account of its different colored veins, the appearance of onyx. The soapstone quarries are situated in a very romantic part of the island, and it adds to their interest to find old excavations where the Indians quarried

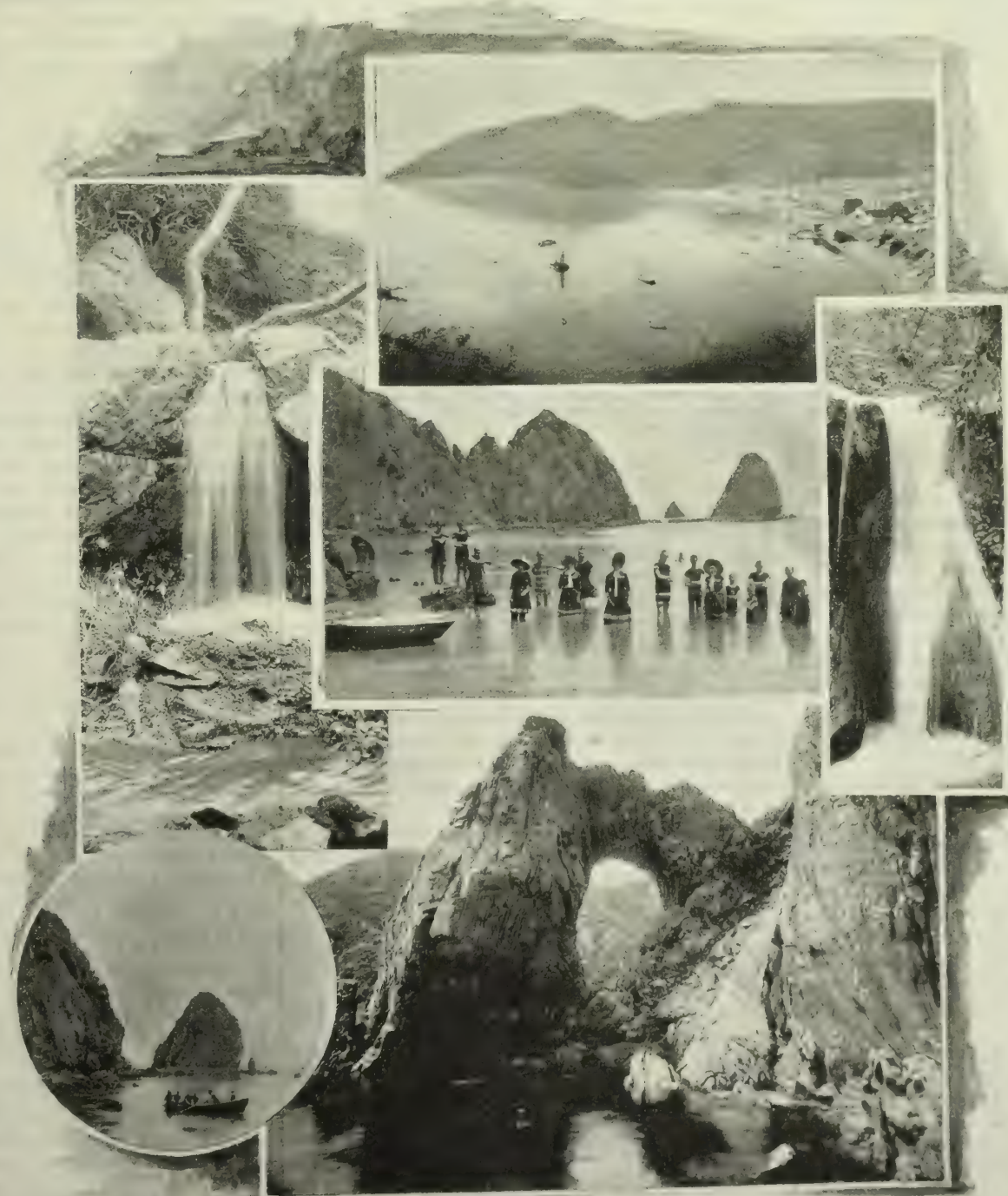
tropical fruit grow there on luxuriant trees, bearing no signs of cold weather.

We give on another page some startling facts about bovine tuberculosis, of which, unfortunately, we have more than enough in California. This dread disease, which is identical with consumption in the human species, should be resolutely stamped out of our herds. While we cannot eliminate tendencies toward consumption from the human family, we can see to it that our milch cows are not living mines of bacilli which can freely enter and establish themselves within us. It is right that the Government should take hold resolutely of this matter and that State and local boards of health should proceed against it as they are doing. It is also imperative that California should not longer remain one of the few States which has no public veterinary establishment. The coming Legislature should see that it has one.

PROF. A. J. COOK is now at work at Claremont, Los Angeles county, investigating what seems to be a new and very destructive bee disease. He is co-operating with Prof. Woodworth of the State University experiment station in the effort to determine whether the disease is of bacterial origin. This seems likely, for the body becomes filled with a brownish liquid, which is at least suspicious. Samples of this are being sealed in sterilized tubes and forwarded to Berkeley for culture experiments.

APPROPOS of the movement of the wine-grape growers, it should be stated that the raisin growers of the San Joaquin valley have nearly completed a new organization intended to secure results which have been vainly striven for for the last three years. They now think they have secured an organization which will accomplish what is needed. It is in the nature of a combine, and will be known as State of California Raisin Growing and Packing Co. The new effort will be brought prominently to the attention of all in the raisin interest.

THE seventeen-year-old locust is becoming a burden in portions of the Hudson river valley.



SCENES ON SANTA CATALINA ISLAND, OFF THE COAST OF LOS ANGELES COUNTY.

soapstone to make culinary utensils more than 150 years ago. Thus early did Catalina pay tribute to the mainland.

Both summer and winter the island is a charming resort. Its climate is much milder than the adjacent mainland. All winter long Catalina is lovely, with its mountains and valleys of green, its still, crystal-like waters, and its beautiful little city of Avalon, which has an appearance of its own, climate of its own and natural advantages of its own, unlike any place but Avalon. No frosts visit the valley in which Avalon is built, so bananas and other

quin valley have nearly completed a new organization intended to secure results which have been vainly striven for for the last three years. They now think they have secured an organization which will accomplish what is needed. It is in the nature of a combine, and will be known as State of California Raisin Growing and Packing Co. The new effort will be brought prominently to the attention of all in the raisin interest.

PACIFIC RURAL PRESS.

Office, 220 Market St.; Elevator, 12 Front St., San Francisco, Cal.

All subscribers paying \$3 in advance will receive 15 months' (one year and 13 weeks) credit. For \$2 in advance, 10 months. For \$1 in advance, five months.

ADVERTISING RATES.

	1 Week.	1 Month.	3 Months.	1 Year.
Per Line (agate).....	\$.25	\$.50	\$ 1.20	\$ 4.00
Half inch (1 square).....	1.00	2.50	6.50	22.00
One inch.....	1.50	5.00	13.00	42.00

Large advertisements at favorable rates. Special or reading notices, legal advertisements, notices appearing in extraordinary type, or in particular parts of the paper, at special rates. Four insertions are rated in a month.

Registered at S. F. Post Office as second-class mail matter.

Our latest forms go to press Wednesday evening.

ANY subscriber sending an inquiry on any subject to the RURAL PRESS, with a postage stamp, will receive a reply, either through the columns of the paper or by personal letter. The answer will be given as promptly as practicable.

ALFRED HOLMAN.....Editor
E. J. WICKSON.....Special Contributor

San Francisco, June 23, 1894.

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The Week.

This year is illustrating well how bad a season can be measurably cured in California. Unusually cool weather and unseasonable rains have continued to draw growth from fields which are usually dry as dust in June. Not only have fields which were consigned to hay made grain and other fields made hay out of failure, but fields plowed up for summer fallow have caught so much moisture that they have been put into a drouth-resisting summer crop. Evidently the growth of sorghum and Egyptian corn will compensate to a certain degree for the short winter growth in some parts of the San Joaquin valley. Field affairs are certainly proceeding this year as they never have before in California.

The greatness of the fruit crop is constantly taking on new dimensions and fortunately early sales are very promising. Cherries have gone East in amounts far in excess of former years and most sales have been exceedingly favorable. Evidently those who have claimed that Eastern people are too poor to buy fruit this year have gone to unnecessary trouble. Poor people could not pay such prices as have been secured for cherries this year, and if they can buy cherries why cannot they buy other fruits all summer? There is every reason to expect that they will.

The Midwinter Fair is attaining its last days. It is announced that July 4th will see the last of it. The attendance of late has been increasing and evidently those who have been deferring their visits are now making them. The exhibits are well kept up and the spectacular features maintained. Those who contemplate a summer trip to the city should make it during the next fortnight.

THE Suez canal is wonderfully profitable. From the receipts of about \$15,000,000 in 1893, there is a net profit applicable to dividends of about \$8,000,000. The directors propose to grant pensions to Mme. de Lesseps and her children in recognition of the services of the great engineer.

COTTON in some parts of Georgia was so badly damaged by the cold nights that farmers are plowing it up and planting corn and peas in its place.

D. L. HARKNESS, Wisconsin's Dairy and Food Commissioner, has just died as the result of handling poison ivy.

The Wine Combine.

The wine men of California are now proposing a heroic remedy for a desperate condition, and it is currently reported that about 80 per cent of those interested have given some sort of adherence to the plan. The proposition is simply to pool their products and thus aim at an absolute control of the production and marketing. Really it seems that nothing short of this can accomplish the amelioration of the situation. Whether it will be practicable to carry out such an enterprise is, of course, still to be decided. Such movements have utterly failed when invoked to better the condition of other California products. They have failed because of the impossibility of securing sufficient percentage of those interested in the movement or to hold even those who entered it. Aside from the hope of bettering the wine grape interest, it will be an important question to decide whether so many producers and merchants can agree to anything. If they can come together upon terms of mutual advantage, the fact may prove of wide industrial importance. The wine men propose to advance by burning all the bridges behind them and absolutely leaving no avenue of retreat. A form of contract to be entered into by the grape-grower and wine-maker has been adopted by the syndicate, and a schedule of terms and prices has been agreed upon. P. C. Rossi is the head man in the syndicate, and with him are a large number of the ablest men in the industry. Following is the text of the contract:

CONTRACT.

In consideration of \$1, the receipt of which is hereby acknowledged to — paid by P. C. Rossi, — hereby agree to sell to him or his assigns, at his or their option, at any time between this date and — next, the following viticultural products, viz., — tons of grapes, — gallons of wine, more or less, the particulars of which are enumerated below, at the prices and on the terms set forth in the printed schedule hereto annexed. If this option be exercised by the purchaser he must notify — in writing of such exercise of it on or before the — next, and the same shall thereupon become a sale binding on both parties.

The grapes above contracted for are the crop now growing on — vineyard, called —, at —, of which — acres are —, and the quantity above named is the estimated product of said vines. If the product does not prove to be so great — not to be responsible for any deficiency. If it exceeds the quantity named such excess is included in the sale.

The wine above referred to consists of about — gallons. This option is granted and accepted on condition that if it be exercised by the grantee he is to be deemed thereby to contract to buy from — as — hereby contract to sell him — crop of the same premises for the years 1895, 1896, 1897 and 1898 on the same conditions herein set forth, and at the prices fixed for those years respectively in the printed schedule annexed hereto.

Witness — hand this — day of —, 1894.

The other portions of the contract which it is proposed to enter into fix all the details of the arrangements. We have only given enough to show that the movement aims at full and absolute control. The prices which it is intended to pay for grapes may, however, be given. In the Zinfandel class the price for grapes from the first or present year to the fifth ranges from \$9 a ton to \$18, and for wine from 9 cents a gallon to 18 cents. In the Riesling class the grapes range in price from \$13.50 to \$23, and the wine from 13½ cents to 23 cents a gallon. In the group headed Cabernet Sauvignon the price of grapes is from \$20 to \$35 a ton, and of wine 20 cents to 35 cents a gallon. Mission and Malvoisie grapes, constituting the fourth group, are quoted at \$8 for all grapes and 8 cents a gallon for all wines.

This arrangement shows that the syndicate expects to advance the value of grapes and wine during its period of existence from 80 to 100 per cent. This is not too much to do; in fact, this is necessary to place the business upon a satisfactory basis. If the combine succeeds in capturing the supply it can probably effect this advance and still not materially increase the cost to the consumer. There has always been a startling discrepancy between the rates which the producer secured and those which the consumer paid. It is possible that the consumer may get better wine for less money, and the same thing could be accomplished in the handling of nearly all our fruit products if they were properly handled commercially.

The propositions of the syndicate should be fully and carefully considered by all who have wine grape properties. Evidently if anything is to be accomplished in the line proposed there must be general and speedy action, and we suppose vigorous efforts will be put forth to that end.

THE State Board of Horticulture has just issued Bulletin 67 on Insect Pests and Remedies, a synopsis of the report of Alexander Oraw, quarantine officer, for 1893. It shows clearly what an important work is being done in the exclusion of pests from foreign parts. Mr. Oraw gives an interesting narrative of this branch of his work, and shows that 153 different lots of plants were inspected. He found fewer infested plants than formerly, but still was able to prevent the entrance of a number of dangerous foreign species. The Bulletin contains also the latest approved remedies, together with an account of the apparatus for applying sulphur on a large scale for red spider.

The Zante Currant People.

The Greeks are doing their best to induce Congress to reject the proposed amendments to the tariff bill which treats Zante currants like raisins in the matter of duty. The Greeks want currants to come in free, and thus supplant our own seedless raisins. We see in the *Fruit Trade Journal* a letter written by a Greek, from which we take the following paragraphs:

In 1888 the Greek Government, having been informed that a heavy duty was proposed to be imposed on currants in the McKinley bill, sent the eminent Greek diplomat and at that time ambassador to England, Mr. John Gennadius, to Washington, and through his sound arguments to the committee in charge of the tariff bill, the placing of currants, the most important Greek product on the free list was accomplished.

Currants since that time have been coming to this country, and this year the importation has reached nearly 25,000 tons, as against 12,000 tons in 1888. Currants sell so cheap that they are within the reach of the poorer class of people, and it would have deprived them of one of the most wholesome fruits.

California or any other part of the world does not produce the seedless currant which Greece produces. It is therefore to the great astonishment that the Greeks of this country and the currant-growers in Greece have seen the proposed duty on currants. The duty at first in the House bill was 10 per cent; it was afterward raised to 20 per cent; then 30 per cent; and now the revision committee of the Senate proposes the most exorbitant duty of 1½ cents per pound on an article the market value of which in New York is but 1½ to 1½ cents per pound.

We are glad to know of the sly work of Mr. Gennadius. We will try to keep watch of him and his "sound arguments." It seems that the Greeks have doubled their importation of currants in about five years, and their free entrance is now advocated on the ground that they help the poor. This is nonsense. Our people of moderate or small means can now get a good, large, clean and luscious California raisin for less than they can buy the small, dry and dirty grape of Corinth. If this Greek fruit was wholly shut out, the people who are now ignorantly consuming it would learn that they can get better food for less money.

We presume the average Congressman would be misled by the sly statement that "California or any other part of the world does not produce the seedless currant which Greece produces." The fact is, California has grown these grapes for years, and has some of them now, but there are other seedless grapes, like the Sultana, which produce so much better dried fruit, that our vines from Greece have been thrown out. The Greeks try to convince Congress that they do not compete with American products. They ought to be ashamed of such statements. Their currants do compete with our raisins and other dried fruit, at least among the deluded people who know no better. The Greeks put a very low valuation on their goods in New York, for the sake of argument, of course. People do not get them at that figure. If you take the selling price to consumers, and then allow for the weight of gravel, dirt and entomological specimens which the currants carry, it will be found that the purchaser of California gets more for his money and is safer in consuming it.

A Beekeepers' Meeting.

A special meeting of the California Beekeepers' Association will be held at the hall of the State Board of Horticulture, 220 Sutter street, this city, at 10 o'clock Saturday morning, the 30th inst. All beekeepers in the State, and those from other places who are visiting here, are invited to be present.

Prof. A. J. Cook, the well-known authority on apiculture, and until recently professor of entomology in the State University of Michigan, and who was elected president of the California State Beekeepers' Association at its regular annual meeting in Los Angeles last January, will arrive in this city in time to preside at the special meeting of the association.

Several matters of importance to the industry in this State will probably be considered by the association. It is expected that, besides consideration of these subjects by prominent beekeepers, several of the professors in the agricultural departments of the State University and of Stanford University will address the meeting. Prof. Cook will lecture on "Bees and the Pollinization of Flowers." This subject is a most important one to the fruitgrowers of California, and it is hoped that many of the pomologists of the State will be present.

State Horticultural Society.

The next regular meeting will be held at one o'clock P. M., on Friday, June 29th, at the State Board of Horticulture, 220 Sutter street, San Francisco.

A lecture will be given by W. S. Manning, Fellow of the Royal Botanic Society of England, on "Fruit and Nuts for Food and Drink." Mr. Manning is an earnest advocate of food reform, and his views are of direct importance to the fruit and nut growers of California.

There will be a discussion on the use of sulphur in fruit drying. The following well-known fruit-driers have been invited to give their views and methods: H. P. Stabler of Yuba City, J. T. Grant and G. A. Bean of San Jose. It is hoped that this discussion will elicit information of great practical value. All interested are invited to attend.

From an Independent Standpoint.

The Republican State Convention is in session at Sacramento as the *RURAL* goes to press and we have barely time to announce the nomination of Mr. Estee for the governorship and to give the leading points in the platform below. There has been a hot and bitter contest between the organized forces supporting Estee, under the leadership of D. M. Burns, the new Republican dictator of San Francisco, and the unorganized forces supporting Chipman and half a dozen others. The fight was for and against the "slate," and the "slate" has won, demonstrating for the ten thousandth time the political effectiveness of organization and leadership as opposed to mere numbers and enthusiasm without discipline and management.

The incident is illustrative of much upon which the *RURAL* would love to speak at large, but the conditions will not permit it now and the tempting theme must be reserved for the future. As we write, the ticket has not been completed.

Mr. Estee has long been a familiar figure in our political life. He has several times been a candidate for the Governorship and in 1882 made an unsuccessful campaign as the Republican nominee. He has always cherished an ambition for public honors, and has, in truth, been so persistent a seeker for office that the fact has come to be one of the standing jokes of California politics. That sort of thing naturally cheapens a man somewhat in the public esteem; and in large part it explains the personal opposition made to his nomination. On the other hand, it is to be said for Mr. Estee that he has done much good service for the State and for his party as a member of the Legislature, as a member of the last Constitutional Convention, and at all times as an interested and willing worker in public affairs. He has not sulked because things have failed to come his way, and has held a laboring oar in every campaign for the past fifteen years. And yet with all his interest and energy in political life his relationships have never been quite clear. In 1882, when he was last beaten for the governorship, he was supposed to have been "knifed" by the railroad interest; and since then he has in a certain way had the respect due to martyrdom in the anti-railroad cause. But now we find him nominated over many protests by political forces supposed to represent the railroad. Indeed, whatever his past relations to railroad interests, there is no room for reasonable doubt that he is now on terms of good standing with the powers which rule at Fourth and Townsend streets.

Personally, Mr. Estee is a very interesting man. He is about fifty-eight or sixty years of age, is a competent but not an eminent lawyer, is in comfortable fortune without being very rich, and is intelligent but not learned. He has an abiding taste for rural life; and although his actual home is in San Francisco, he maintains a fine fruit farm in Napa county and spends much of his time amid his trees and vines.

Unquestionably, he will make a good campaign, but it will be in the line of solid rather than brilliant work. He is a trained speaker, but has no trace of that fine quality which makes Gen. Barnes, Mr. Knight and Col. Irish so delightful and effective on the stump. He is not a "spell-binder," but he is a good, plain talker and will explain the issues of the time in a way to make them very clear.

The platform is a document of 30 counts, of which we have at this writing only a brief synopsis, and we shall not attempt to give more than its leading features. Gov. Markham's administration is endorsed; the consolidation of State commissions "wherever possible" is recommended; it is declared that taxation should not exceed 50 cents in the \$100; free silver coinage at the ratio of 16 to 1 is demanded; Cleveland's Hawaiian policy is denounced; the Wilson tariff bill is denounced; it is declared that the public schools should be unsectarian; the immigration of Chinese, Japanese and other ignorant persons is denounced; and there is the usual series of resolves expressive of interest in the agricultural, horticultural, wool growing, mining and other productive interests of the State. Woman suffrage is approved on the principle that there should not be taxation without representation. In the matter of the Nicaraguan canal immediate aid is demanded from the Government, also that it "manage and control the same after construction." The railroad plank is a simple invitation to capital to build competing lines in the State, and also a competing road between San Francisco and the East. A curious plank, put in evidently to please Mr. Lubin of Sacramento, recommends that the Government "reduce the cost of oceanic transportation," and that a "limited portion of the customs receipts be used to reduce the cost of freight." As a whole, the platform is very commonplace, for it proposes nothing in a direct and positive way. Its propositions for economy in State expenditure are vague and unsatisfactory, and its railroad plank—a mere invitation for capi-

tal to come and do something for us—is weak and stupid to the point of imbecility. The canal plank is not in sufficiently energetic or positive spirit, and by no means reflects the temper of our people in the matter. And so all the way through there is a mass of resounding but meaningless phrases, the only clean-cut paragraphs in the whole document being the declaration for free coinage and the demand for woman suffrage.

A new Nicaragua canal bill, now in preparation by the House Committee on Commerce, comes nearer to meeting the demand for government ownership than any plan yet proposed in Congress. It provides that the present canal company shall call in and cancel all its stock and extinguish all its debts, whereupon the Secretary of the Treasury, acting for the Government, shall subscribe for \$70,000,000 of stock or for all save the \$7,500,000 held by the Governments of Nicaragua and Costa Rica. Then an accounting shall be had with the stockholders of the old company and they shall receive stock in the new company in proportion to their past expenditure, and in addition one million dollars of stock as a bonus, all of which the Government reserves the right to buy in at any time by paying not to exceed its par value. The directors of the company are to be: twelve representing the Government interest, one representing the holding of the old company, and one each representing Nicaragua and Costa Rica. The bill provides for the issuance of \$70,000,000 in bonds, to be disposed of as the work progresses, thus insuring means for the completion of the enterprise. The total capital stock of the company will be \$83,000,000; \$7,500,000 will be held by Nicaragua and Costa Rica, \$70,000,000 by the United States, and the balance of the amount shown to have been expended by the old stockholders. The work is to be done under the supervision of engineer officers of the army to be named by the President.

In effect this is a proposition to reorganize the project on a basis of eighty-three million dollars, of which the Government shall hold all save the interests reserved by Nicaragua and Costa Rica, and such share as the stockholders have already earned by work already done, plus a bonus of one million—the interest of the old stockholders, including their million-dollar bonus, to be paid for in stock.

This bill is a great improvement on any former proposition, but in our judgment it fails to go far enough. We do not object to Nicaragua and Costa Rica having an interest in the canal. We do not object to repaying the old company all it has expended or in allowing it a million-dollar bonus for its pains. But we do object to continuing its connection with the canal and its management. The right thing to do is to pay the old stockholders, not in stock which involves a partnership relation with the Government, but in cash, thus eliminating them entirely and leaving the Government free from any entanglement with private interests. In theory the plan looks well enough, for the Government is to have twelve directors to one, but in practice the arrangement will prove a continuous source of annoyance and of political corruption. The private interest will maintain a lobby at Washington and it will, through one form of management or another, contrive to control the appointment of the Government directors and thus control the administration of the canal; and who can doubt that it will be done in the interest of the railroads with which the canal will be in competition? All the world knows how a similar arrangement has worked in connection with the Pacific railroads; the scandal and infamy is too familiar. A similar adjustment of interests at Nicaragua will result inevitably in a similar condition of things. We shall have a canal ring and a canal lobby to corrupt our public life at Washington and at Nicaragua we shall have an administration whose effort will be to defeat the real purposes of the canal project. The history of the Union Pacific railroad will be repeated, to the injury and shame of the people of the United States.

Why, in the name of common sense, cannot the Government buy in the interest of the present canal company and pay for it in cash, and then carry out the project on its own account? That is the natural, simple and easy course. It is the way to avoid all complications, and to make the canal when completed a thing of national advantage. Where is the necessity in all these canal bills of having a "joker" half concealed somewhere? There is, in fact, no necessity for it. It is done because the railroads want to have the means of controlling the canal when finished, and they have their men at Washington doctor up each successive canal bill to that end. Is there not in Congress somebody with enough common sense, integrity and force to present a bill that will involve a straight and simple proposition to buy out all present rights and then to put the job through on Government account and entirely in the public interest?

We are often told by lawyers that the Government can-

not build the canal in its own name because there is in the way a treaty with England made some forty years ago. Now, if the Government cannot do the thing in its own name it cannot do it at all; for it would be not only undignified, but contemptible, for it to do underhand and by a lying subterfuge what it could not do openly. Is this Government to be bound forever by a treaty made forty years ago? Is the progress of the world to halt and turn back because a diplomat, dead a generation ago, promised too much? Absurd! All we are called upon to do in morals and good faith is to notify England that after a specific date we shall disregard the obstructing treaty. Surely we have as good right to undo the treaty as our fathers had to make it. Quibbles of this sort may do for lawyers, and for those who want to defeat or delay the canal project, but they have no standing with men of broad common sense.

In the United States Senate, on Thursday of last week, Mr. Perkins took occasion to deny the story told in the House by Mr. Geary (and repeated in last week's *RURAL*), that the late Mr. Stanford founded the Palo Alto University in the spirit of revenge. It is true, Mr. Perkins admitted, that Stanford was rejected as a regent of the State University, but it was at his own request. The value of this evidence lies in Mr. Perkins' personal connection with the events, he having (as Governor) made the appointment. Mr. Perkins undoubtedly speaks in accordance with his recollection; still, it does seem very strange that Mr. Stanford should have asked for rejection when it would have been just as easy and infinitely more dignified to have asked to have his name withdrawn, or, for that matter, to have simply declined the honor. It was not Mr. Stanford's way to be indifferent to such matters, for, as everybody who knew him well knows, he was intensely sensitive respecting all things personal to himself. Mr. Perkins, in trying to do a graceful thing, seems to have overdone it. His explanation is really absurd, for no man in his senses and with any regard for his own reputation would ask, in a way of personal humiliation, an end which might as easily or more easily be gained by a course of simple and natural dignity. Mr. Stanford would have been the last man to do a thing so unnecessary and foolish. This question of Mr. Stanford's motive in founding the University at Palo Alto may as well be dismissed; but there is no reason why the public should blind its eyes to the notorious facts respecting the fortune with which it was endowed. Liberality in giving—no matter for how noble a cause—cannot excuse dishonesty in getting.

Crops and Markets.

We quote the following from Bulletin No. 9 of the State Fruit Exchange, dated June 20th.

Crop Report.

In the light of all our own reports, and such other information as we have been able to obtain, our final judgment of the coming fruit crop is as follows:

Apples.—With few exceptions the apple crop will be an excellent one. In a few districts some early varieties are reported light.

Apricots.—In a few districts they were seriously injured by frost. In some orchards the crop was ruined; but where uninjured the crop is a very large one, and the aggregate crop will be much the largest we have ever harvested.

Grapes.—The grape is not yet out of danger. It is not reported so uniformly good as most other fruit crops. A good many of the berries are falling in some places, but there may still remain enough to fill the clusters. On the whole, we must wait a little longer for a final estimate. This is true of raisin, wine and table grapes.

Peaches.—Excellent everywhere, and decidedly the largest crop we have ever had.

Bartlett Pears.—A large and excellent crop. The increase of acreage over that of last year is probably about 8 per cent. There will probably be more Bartlett pears to market than ever before.

Late Pears are generally reported light.

Plums.—Like peaches, shipping plums did not set well in many districts and there is less increase of acreage than in any other tree fruit, but what there is is certain to be of large size, and in many districts there is a full crop. On the whole, there is not likely to be more shipping plums than last year. This applies to German and Silver plums.

California Prunes.—There are limited districts where these are a full crop. In the districts which supply the bulk of our shipments, they set very light indeed and were generally reported at one-third or one-half as compared with last year. The favorable growing weather is giving large size to the fruit which did set, and latest reports are more encouraging, but in the California prune no increase of size of scattering fruit can make good the absence of the thick setting of prunes along every twig which we have in a good year. We have no estimates exceeding 60 per cent of last year's crop in the Santa Clara valley, but in the mountain districts whose product is shipped from San Jose there is generally a heavy crop. There will be a decided falling off from last year's shipment of prunes, but we do not care to estimate on the amount of the deficiency at present.

Nectarines are a good crop.

Almonds promise the best crop we have had for a long time, with an increase of acreage of 12½ per cent over last year.

Walnuts.—Our own information is not as definite on this crop as we could wish, but we understand the prospect to be good, and there is a large increase of acreage. In 1892 there were nearly 33 per cent more of non-bearing than of bearing walnuts, but as this tree is slower than fruit trees in coming to bearing age, it is difficult to estimate the percentage of annual increase.

Olives are blossoming and setting well everywhere, and the acreage of bearing trees is increasing faster than that of any

other California fruit. It is a bearing year for olives, and the crop will be the largest we have ever had.

In Oregon and other Northwestern States there will be a large crop of apples and California prunes; but the Fellenburg (Italian) prune, which is their leading drying variety, is light, estimated at not more than 40 per cent. We stated some time since that the prune which we call the "German"—the Fellenburg—was identical with what northwestern shippers call the "Italian." A northern correspondent suggests that, while the "Fellenburg" is the variety in both cases, the northern climate has developed a difference, and that the fruit is larger than the Fellenburgs grown here. It may be so. There has yet been no opportunity for sufficient comparison of the dried fruits, as the greater part of our dried Fellenburgs must be culled.

Eastern Fruit Prospects.—The different opinions which we get show that fruit East must be rather "spotted," but the general drift of information is that there will be no really large crop of peaches from any commercial shipping district, unless it may be Michigan, and there is more or less injury there, while the principal apple shipping and drying districts will turn out a large crop.

Market Report.

FRESH FRUITS.

There are very few sales of fresh fruit reported, although more or less doubtless goes on in a quiet way. The Chinamen seem to have the inside track, buying, as they do, fruit on the tree for a lump sum for the orchard. They employ their own people, at what rates we do not know, to pick and handle the fruit, which their habits permit to be done at the least possible expense. They doubtless take care of much fruit which the owners do not have the business ability to care for themselves, but it would be more profitable to the growers and far better for the State if such growers would organize, learn to care properly for their product, and employ their neighbors and their own families to do the work. There are few sales by the ton, and the few instances where offers are reported vary from \$18 to \$25 for apricots. Canners in Butte county pay from \$20 to \$25 per ton for canning sizes of Crawford peaches, and \$30 for clings; 8½ cents has been offered for dried apricots and no takers; in Fresno county \$20 is offered for apricots, \$17.50 for peaches, and \$22.50 to \$25 for Bartlett pears. Apricot drying is begun in Tulare county.

The cherry shipments from Alameda and Santa Clara counties have brought prices all the way from 30 cents to \$1.87½, but generally running very low—from 60 to 80 cents. The frequent rains have unquestionably so injured the carrying qualities that for the remainder of the season results must be very uncertain. For the remaining shipments we suggest the utmost care in sending only sound fruit. The great difference in prices obtained for different lots from the same car shows conclusively that there was great difference in condition.

Royal apricots have been usually doing well, but are beginning to yield under the competition of other fruit. They have brought from 70 cents to \$2.50—and all prices between—per half-crate, equivalent to from nothing to 8 cents a pound for the fruit picked. Early peaches, plums and apples have been realizing the fine prices usually obtained for first shipments. They cannot be expected for the same varieties from later districts. The early Alexander peaches from Placer county averaged for the crop 65 cents per 20-pound box, net; Newcastle apricots average per crop 70 cents net. The reports of auction sales seem to average for peaches about \$1.20 to \$1.30; cherry plums about \$1.20; Olyman plums about \$2 to \$2.25. The shipment of Bartlett pears is already begun from several places, but no returns received.

A Michigan correspondent writes us that the peach shipments from there usually begin about August 20th, varying a little with the season, and continue until the last of October. He states that their freights are 4 cents per basket holding one-fifth bushel, and that the lowest average net price for the season which he ever received was 23 cents a basket, or \$1.15 per bushel. We have not the weight of a bushel of peaches at hand, but it cannot be far from 50 pounds, which would make an average return of about 2 cents per pound picked and packed, including, if we understand our correspondent, the package, which, in this case, would be 5 baskets. This, however, is quoted as the lowest average price for the season ever received.

DRIED FRUITS.

There is as yet no movement to speak of, either East or here. There is a great difference of opinion between buyers and growers, and few transactions have occurred. Growers on this side have been expecting from 11 to 12½ cents for "choice" apricots; some actual contracts are reported between local buyers and growers for the entire crop at 10 cents, the grower to dry the fruit. On the other hand, Eastern buyers were unwilling to contract above 8 cents, and some time since refused offers from southern dryers at 9 cents. Some "choice" apricots have been quoted in the Eastern market at 8½ cents, but not in quantities, and possibly "short" sales made to depress the market. On the whole, growers and packers are not seeking to press the market, but there is no doubt that some who have bought orchards in southern counties, with a round advance down and the remainder to be paid when delivered, will seek to realize as early as possible on a portion at least of their holdings in order to provide funds for deferred payments. The bulk of the crop, however, is certainly held by growers who expect to dry, and it appears to us is likely to come more gradually on the market than ever before. There is no talk whatever about any dried fruits except apricots.

Remaining stocks of old crop are gradually going into consumption at unchanged prices, but if any holder desires to press immediate sales of a certain lot he must do it at a sacrifice.

The Fresh Fruit Trade.

It is not the province of this Exchange to deal with any but the commercial aspects of the fruit business, but these views sometimes lead us back to the farm. If fundamental errors have been committed there nothing but the monumental good luck which is not to be counted on can afterwards retrieve them. For example, this has been a good year for cherry shipments. To this date the sales of good shipping varieties have been so uniformly satisfactory that it is fair to assume that those which have sold low have been in bad order. We have been very conservative in our quotations, not to excite too great anticipations. Many lots of cherries have sold at from \$1.75 to \$2.10. Cherries at \$2 in Chicago per ten-pound box net the small grower paying full retail rates for all supplies about 14 cents per pound for the fruit on the tree, after deducting 1 cent a pound for picking, 5 cents for box, 5 cents for packing, 26 cents for freight and loading, and 7 per cent commission. At \$1 per box the net result to the grower for fruit, or on the tree, is about 4.7 cents. We believe that the average price of all cherries arriving East in prime condition has been \$1.30 per box, or 7.4 cents net to grower. Now, this pays well, even with all due allowance for the facts that the cherry is slow in coming into bearing, and somewhat uncertain in its carrying qualities. But, on the other hand, the Rockports, Cleavelands, Gov. Woods and other of the inferior or watery cherries have sold right along at 50, to 60 cents, yielding the grower net from 1 cent a pound down to nothing, or less. This does not pay, nor can conditions change unless,

possibly, by the use of compressed sterilized air or some other process enabling more rapid transit, in place of the ice refrigeration, heavy cars and consequent slow time which we have now; and even then the better varieties will be preferred. It is foolish to continue to cultivate trees with no hope of profit, and the obvious course to pursue is to graft over every tree of the non-profitable varieties into Black Tartarian, Royal Ann, Black Republican or other good carrying cherries of those types. With this done, let the grower learn the precise stage in which to pick them, pack carefully in well-seasoned and well-ventilated boxes, arrange for prompt and careful delivery to the cool car, under contract that it shall not be packed too full to permit free circulation, and put his trust in Providence. One year with another he will do well, and the world will look bright to him. Those who persist in raising unsuitable fruit or sending good fruit poorly packed or otherwise likely to arrive in bad order, will have no business to abuse "overproduction," the "infernal auction system," the "thieving middleman," or anybody else outside their own family. We may some time deliver East more sound, ripe cherries of the best varieties than can be sold at a profit under present conditions, but we have never yet done so.

Apricots, peaches, plums and grapes selling in Chicago at \$1 per 20-pound crate will, on the average, net the grower about \$30 per ton for his fruit picked. What he gets above that, less commission on the excess, is additional profit. If they sell down to 70 cents, he loses his fruit and picking; when they go below that he not only loses his fruit but begins to pay expense of delivery to consumer. This is for the small grower paying retail prices for everything, and usually paying more than large growers for labor. One dollar per crate is good business, if the trees average 100 pounds shipping fruit to the tree. At \$1 per crate at auction the fruit cannot well reach the fruit stand at less than \$1.20 or retail to families at less than 40 cents a basket, or eight cents a pound. The waste in handling fresh fruits is large, as all know who have ever stood about a fruit store. Of this waste the jobber who buys at auction loses some, but the retailer the most. Most growers suppose the "open auction" to enable small dealers to escape the jobber's profit. Not one in ten of these, however, does or can spend the time to attend a daily auction to buy his small supplies. Such as do seek that advantage, and there are of course more or less of them, mostly combine to employ a buyer—unless they themselves happen to be the buyer's employees—and between the two very little of the jobber's profit is permitted to reach the consumer. It is probably true, however, that fruit not in first-rate condition will bring more from dealers prepared to retail it at once than from jobbers who have to risk an immediate sale to a retailer. The green grocer the world over goes to market, while we honest farmers are mostly still asleep, and 'tis back with his load of fruit and vegetables by 7 or 8 o'clock. When the auction opens at 9 the men for whom we desire open auctions are selling and delivering to their customers the fruit sold at auction the day before. This is not to be construed as an opinion unfavorable to open auctions—a question which we do not wish to take up at all at present—but simply as showing the difficulty of getting fresh fruits to consumers at reasonable prices even where sold at open or any other auction at rates not more than satisfactory to us. It seems to be true that, with our fruit at 1½ cents a pound picked net to us, our market in the East is restricted to the class that can pay 8 to 10 cents for table fruit. That this class is a very large one is evident from the enormous quantities of our fruits sold in competition with Eastern fruits delivered at a nominal expense. This year we have the unusual advantage of a market almost clear from Eastern competition, except berries, until the Jersey peaches come in about August. The probabilities are that we have this year all the fruit that the classes that can afford even to pay freight on it can buy. Our earliest shipping districts will get excellent prices for these hard times, and it is quite likely that even the later districts will realize fair to good returns during most of the season for sound fruit. For the benefit, however, of any growers shipping East for the first time, we may suggest that it is only the good fruit that will pay. We believe that very few growers intend to send any other, but there are a multitude of packers who do not know what fruit will pay to ship East, and what will not, and there are a few who yield to the temptation to hide inferior specimens in the middle or bottom of the package. This will not do at all. The buyers of fruit cannot be deceived in the quality of the goods they buy.

Our crop is so large that, if sufficient cars can be had, it is quite possible that in the height of the season we may send East more good fruit even than the market can absorb at living prices. That we cannot tell until we try. The Exchange will do its best to ascertain in advance the competition we are likely to meet, and make public the facts in time for growers to exercise intelligent judgment whether to ship or dry. As we have constantly advised, it will be very imprudent for growers in all but the earliest districts to be unprepared to dry.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, June 20, 1894, are from official sources, and are furnished by the U. S. Weather Bureau expressly for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total rainfall for the week.	Total seasonal rainfall to date.	Total seasonal rainfall last year to same date.	Average seasonal rainfall to date.	Maximum temperature for the week.	Minimum temperature for the week.
Yuma.....	2.17	1.65	8.16	100	60	
San Diego.....	4.98	9.46	9.85	74	54	
Los Angeles.....	6.71	26.28	18.28	52	48	
Fresno.....	.06	8.48	11.10	9.99	50	52
Sacramento.....	.02	16.35	23.95	18.77	82	51
San Francisco.....	.17	18.47	21.72	24.66	64	45
Red Bluff.....	.32	22.09	32.32	23.67	90	52
Eureka.....	.62	54.94	49.01	46.66	62	62

AND now ramie is to be given a systematic trial in Kern county, by local capital, under the management of Felix Fremery, an inventor, originally from France, who has a new machine for decorticating. Mr. Fremery's machine seems to be the best yet devised. It works both green and dry stalks, and produces clean ribbons, free from tow.

Crop Condition and Outlook.

Following is a synopsis of the crop bulletin for the past week issued by Director Barwick, of the State Weather Service:

The average temperature for the week ending June 18th was: For San Francisco, 56°; Red Bluff, 68°; Sacramento, 65°; Fresno, 70°; Los Angeles, 62°; and San Diego, 62°. As compared with the normal temperature, a heat deficiency is shown at San Francisco of 4°; Red Bluff, 6°; Sacramento, 4°; Fresno, 5°; Los Angeles, 6°; and San Diego, 3°.

The rainfall during the week was: For San Francisco, .20 of an inch; Red Bluff, .30; Sacramento, .02; Fresno, .10; and nothing at either Los Angeles or San Diego, being an excess over the normal precipitation of .13 of an inch at San Francisco; .16 at Red Bluff; and .10 at Fresno, while Sacramento shows a deficiency of .05 of an inch, Los Angeles and San Diego being normal.

The deficiency of heat over the State has been favorable to the late grain in helping it to fill out with good, plump kernels, and has retarded the ripening of fruit, thereby preventing a glut in the market. Fruit prospects were never better.

Hay is continuing, and harvesting of grain has begun. The yield of the latter is far beyond the expectations of the most sanguine agriculturist as made several weeks ago. The crop of course is below the average taking the State in its entirety, as is also the hay crop. Warmer weather needed for fruits and all summer crops. Frosts were quite prevalent in some of the higher foothill sections. Highest temperature, 102° at Huron, Fresno county; lowest, 29° at Adin, Modoc county.

TEHAMA (Red Bluff)—Temperature gradually creeping up near the normal. Splendid weather for all crops. Peaches and apricot in market; the latter a splendid crop—considerably above the average. Prunes not up to the average in quantity.

SUTTER (Yuba City)—Barley harvesting begun and fruit shipments to the East increasing daily.

PLACER (Newcastle)—The week has been a cool one; rain, with thunder and lightning, on the 16th, but no damage to crops.

AMADOR (Ione)—The fruit and grain crop in this section have never been better than they give prospects of being this year. The second crop of hay will more than make up for all losses during the recent rainy weather.

SACRAMENTO (Folsom)—Considerable damage has resulted to hay on account of late rains. The hillsides and valleys are green with grass, which is unusual for so late in June. (Sacramento)—The continued cool, cloudy weather is good for late grain and prevents the rapid ripening of the fruit.

YOLO (Esparto)—Harvesting begun. Considering the eccentricity of the weather this season the yield will probably be better than was generally expected. (Grafton)—Corn crop looking splendid and a big yield expected. Harvesting on the tule lands shows the quality of grain to be excellent. Taken as a whole, the crop will be larger than last season. (Davisville)—The barley crop is certainly injured by discoloration, resembling the coast barley, and is therefore unfit for brewing purposes. Wheat is not noticeably damaged.

SOLANO (Binghamton)—Harvesting begun and yield very good in most places. (Maine Prairie)—Harvesting begun and prospects in this township, taking it as a whole, that there will not be over half a crop. The late rains damaged hay, and in some cases it was utterly ruined, and barley was badly discolored.

MENDOCINO (Ukiah)—Weather decidedly cool and crops continue to look fine in this section. Hay turning out much better than expected and late-sown grain will show a large yield. Hops are looking very thrifty, with the prospect of a big crop, and fruit never looked better than now.

MARIN—The dairymen throughout the county are feeling much elated.

ALAMEDA (Pleasanton)—Weather very favorable for haying, filling grain and ripening fruits, and also for sugar beets, potatoes and other vegetable crops. Hops are making a steady growth, but warmer weather would be desirable.

SANTA CLARA (Santa Clara)—The harvesting of this year's seed crop began this week. The seed has matured six weeks earlier than last season, and is going to be one of the largest ever known.

SAN JOAQUIN (Lodi)—Cool weather retards ripening of wheat, in consequence of which harvest will be two weeks late; berry filling well and promises to be of an excellent quality. Too cool for melons, which are making a slow growth and will be quite late in maturing. Second crop alfalfa hay being cut. Hay that was cut and in the field has been overhauled and found not to be so badly damaged as expected at the time of the rain.

STANISLAUS (Turlock)—The week as a whole has been favorable for all crops. From all indications the wheat crop will be the best filled and plumpest kernels for years past.

FRESNO (Fresno)—Grain ripening slowly. On some lands harvest will begin next week. Fruit doing well. Peaches and apricots in market, drying of which begins next week. (Fowler)—Wheat sown very late and also wheat on irrigated ground is good, especially the latter. Peaches, pears, etc., are going to give a good yield. The first crop of grapes will be light on account of the cutworms and the sandstorms.

TULARE (Near Tulare City)—Weather unusually cool, especially at nights. The land harvested for hay is being (where irrigated) planted to Egyptian corn and sorghum, more than ever before. Fruit ripens slowly, but there will be large crops gathered. The late rains helped vegetation, particularly fresh-sown seeds and corn.

SAN BENITO (Hollister)—The new crop of hay is coming on pretty fast under the bright sunny weather we are now having. The cloudy, threatening weather of the past three weeks has been rather detrimental to hay, some of the farmers having to hold their hay too long before cutting that they made grain of it. A larger acreage cut this year than last; the quality of the hay, however, will be better than ever before cut in the valley. The total amount will probably reach the crop of last year.

SAN LUIS OBISPO (Arroyo Grande)—Good reports come from the country back in the hills, where the late rains have started a new growth of feed. The ranchers now have hopes of carrying stock over, where almost all hopes of doing so had been given up. Beans look well, and a good crop is expected.

SANTA BARBARA (Lompoc)—Weather has been very changeable, which will cause the bean and mustard crops to turn out better than expected. The hay crop is a good one, and was but slightly damaged by the moisture. (Santa Maria)—The heavy winds have injured summer crops very materially by drying out the top moisture. Light frosts in exposed places damaged beans somewhat. Beans and corn not as promising as usual.

VENTURA (Hueneme)—Heavy winds the past week have done considerable damage to beans and corn.

LOS ANGELES (Los Angeles)—Weather generally fair and warm latter part of the week, but temperature still below average for season. Fruits ripening slowly, but prospects continue good.

SAN BERNARDINO (Chino)—Clear, dry and fine growing weather has prevailed throughout the week. (Yucaipa)—Haying nearly completed, and while the yield was not very large per acre, yet there has been more hay cut than usual, as but few will do any threshing.

RIVERSIDE (Arlington Heights)—The peach and apricot crops are large and coming on well. Apricots will be in the market in about two weeks. The grape crop is coming on finely, the vines making a vigorous growth. The orange and lemon are doing nicely.

HORTICULTURE.

Grafting and Budding.

By Mr. E. A. Bonine of Lamanda Park, at Southern California Pomological Society.

My paper is to amateur orchardists rather than to practical nurserymen. It relates to working over old trees rather than to young ones. First, I have had great difficulty in keeping my scions dormant in the spring. I have buried them in damp sand in the cellar, and in damp earth north of a building, the latter growing best. Scions from the east or north are apt to stop growing as soon as they arrive, and I would advise waiting until March before ordering and insert as soon as received. I find it is best to have your trees active, that is, the buds beginning to swell when you graft; if grafted while the stock is dormant your scions may dry out. I find pears, apples, plums and prunes graft easily; apricots, peaches and the citrus family I prefer to bud. Presuming you have an apricot to work over, saw off the limbs to within a foot or two of where the tree branches, the shorter measure the better. Do this in winter when your tree is dormant. When ready to graft saw off the ends, brushing off the sawdust with a sink brush, and paint, using a color the shade of the bark. Shoots will grow all over your stock, and when they are ten inches long select such as are situated best for branches and remove the remainder, but retain more than you desire, for some may be broken off by the wind. Never retain a shoot growing out at the end sawed off—it will often be removed by the wind—but leave them down from the end an inch or more.

Pinch the ends off of the young growth on the tree you desire to take your buds from, the latter part of May or first of June. This will cause your buds to harden and mature, then during the middle or latter part of July you can insert your buds. As soon as you bud, cut off your young shoot 12 or 18 inches above the bud; if you fail to do this the sap will form so fast under the bud that it will not join. If your tree is thrifty (and it should be or it had better be dug up) the buds will grow. I have apricots growing on my ranch on buds inserted last July. I find it as well to cut off all the top as only a part. As soon as your bud grows eight or ten inches pinch the tip to make it branch; this will prevent injury by wind to your bud, the pinching retards the flow of sap and allows the wood to harden. The wind blows less buds off than grafts. I find it wise after your buds have grown a couple of feet to take baling rope and run it around the tree, say a foot above where the buds are inserted; this prevents damage to the limbs by winds. I sometimes leave the rope on a year or more, or until the growth becomes woody and strong.

I find there are but few varieties that will cross successfully—to illustrate, there are but few fruits that can be budded or grafted on the apricot successfully; most plums do not do well. It is suicidal to bud prunes on apricot roots, budding at the ground, and yet I have several apricots top grafted to Tragedy and French prunes that are doing well. I had a number of Botan plum trees, and could not dispose of the fruit; I grafted them to prune, peach and apricots. The prunes grew like bad weeds the early part of the season, and then became dormant. The peach root and the Botan desired to grow the latter part of the season and the prune didn't, and they all died together—the prune had grown four or five feet in the spring. I allowed some of the peaches to grow the second season to see the result, but they made a sickly growth and I dug them up; the apricots are not doing well—there was not more than eight or ten inches of the Botan in the tree. I find the Japan plums generally do best grafted on our native or Chickasaw plum stock, though I have a Kelsey top grafted on apricot, and have seen Kelseys on peach doing well.

I place a two-quart can, containing a small amount of water, in my budding basket, and keep my scions in it while budding or grafting. It is surprising to find how few varieties of sap have an affinity for each other. The idea that all the stone fruits will successfully bud on each other is fallacious. The fact is, very few will.

Referring to the apricot, after the bud has joined, unwrap the budding twine (but do not be in a hurry), then wait a week to see that it has joined thoroughly, and gradually cut back your shoot and get a growth immediately. You cannot do this with the peach unless you can keep your last year's buds. I find the sap keeps flowing to the ends of the limbs of some varieties after cutting off, but peaches and apricots have a tendency to die. Should you insert two scions in a horizontal limb and only the lower scion grow (it often happens), the upper part of the limb dies and leaves a weak place in the tree; therefore I find it best to cut the limbs as short as possible. It is not necessary to bind up the stocks of the apple, pear or apricot to prevent sunburn on the south side of the tree; but it is always necessary to wrap the peach.

Before closing I will call your attention for a few moments to another kind of grafting and budding which is imperatively necessary to be done, for liberty is at stake in the issue. What will it profit a man if he raises tons and carloads of fruit, if the monopoly of the bondholder, the railroad companies, the commission men and the bankers get your profit? You must saw these all off and co-operate, and graft on Government ownership of railroads, Government issue of all money, woman suffrage (for we need their help in the coming struggle), and the initiative and referendum to take the law-making power and class legislation out of the hands of monopoly and put it in the hands of the people. Monopoly has gone to seed; the tree is a thorny, worthless seedling, and you must top graft it, not with "the greatest good to the greatest number," but justice to all. Graft on every man must bear the burdens of life, not only tramps, but interest-drawers, bondholders and tally-ho-riding want-to-be bondholders, tooting fish horns. If the Government is not for the people what good is it?

The suggestions contained in the paper were generally approved. The discussion regarding budding citrus trees was to the effect that it is particular work and requires great care to make it a success. Washington Navels may be profitably budded on Australian Navels if the work be done right. Mr. Bonine said he had been successful in all cases. Mr. Blanchard had found it difficult to bud lemons. Mr. Holt found no difficulty in grafting citrus trees, but the work must be done with great care.

Small Fruit Growing in Southern California.

By G. M. Taber at Southern California Pomological Society.

May I venture the assertion that, as a rule, the cultivation of small fruits is too much neglected by those who have the opportunity—but lack the will—to cultivate what is required for family use. In the cultivation of small fruits, a light, porous soil is preferable, yet it requires more fertilizing. Liquid manure is preferable to solids, as it reaches the roots more readily and takes the place of irrigation. The surface soil should be frequently stirred, as more moisture is absorbed from the atmosphere by so doing.

Although plums may not be properly considered in the line of small fruits, yet I wish to report an experiment I made with leached ashes as a fertilizer. I had 12 trees which had never borne but little very inferior fruit. Around six of the trees I spread in the fall several inches of leached ashes, and the following season they were so loaded with fruit that both limbs and branches had to be supported to keep them from breaking down. The fruit was both delicious and perfect. The six trees not manured bore nothing.

I will call your attention to some varieties of small fruits experimented with by Z. C. Taber of north Pasadena during the past five years. Out of 13 varieties of strawberries he has found the Hoffman to be the earliest, and while it is a well flavored berry it is rather too small for market. The Viola is an early variety, but not a profitable one to cultivate. The Pineapple is a good-sized berry, prolific and hardy, but the fruit is not of the best quality. The Grandy is one of the latest to mature, but not prolific. The Jesse, although highly recommended, has proven a failure. The Pearl has an excellent berry, but is not prolific. The Bubach No. 5 is a late variety, large and prolific, flavor excellent, and one of the best varieties he has grown; its only fault is being a little too tender for shipment. I noticed a chance seedling on his place which I have named the "Taber." It has the appearance of being an excellent medium early variety. There is money in the cultivation of strawberries, as I am told that near Azusa \$1000 per acre was realized from their culture.

Among the varieties of the red raspberries, the Cuthbert, All Summer, Marlboro, Royal Church and Thompson's Early all succeed well here, but the Royal Church has the largest berry, and so far seems to be the leading fruit here as well as in the East.

Among the yellow varieties the Golden Queen is preferable. It produces a fine berry, is a prolific bearer, has an excellent flavor, and can be recommended for general use as well as home market, but not for a distant market, as the berry is too soft for shipment.

Among the dark reds, the New Rochelle is the earliest, prolific, and is an excellent berry for canning or market. The Gladstone is a late berry, good bearer, fine flavor, and fills up the time bearing until killed by frost. The Shaffer Colossal, which is highly recommended in the East, bore well the first two seasons, but after that proved a failure.

Among the black caps, the Carmen is considered one of the best varieties, but, like all others, does not seem to be adapted to this climate. They succeed best where they are well shaded and well watered. The Earhart, although highly recommended, has proven a failure both here and in Iowa. Among the blackberry family, the Evergreen is one of the earliest varieties, and the berry is one of the largest grown. Its flavor is rich, has no core, but few seeds and those small, and one of the best varieties for canning. Crandall's Early is a good bearer, and the fruit is of fine quality. The Early Harvest is medium early, a vigorous bearer, fruit sweet but small. The Kittatiny is too well known to be described; although it produces a fair berry yet it is not thought equal to those already mentioned. The Erie is a late variety, not very productive, but one of the best flavored. The Minawaski is also a late variety, berry medium, and yields two crops per year, the second crop being larger than the first. The flavor is very tart until fully ripe.

The most peculiar variety among the blackberry family is the White blackberry. The berry is nearly white, medium size and well flavored, but poor bearer. The profit in its cultivation is in its curiosity.

Among the dewberries the Lucretia is the only one desirable to cultivate. The berry is large and is excellent for pies and canning, and ripens earlier than blackberries and commands a higher price in the market.

Mr. Taber is also experimenting with the June berry, the improved barberry, the high cranberry and whortleberry, the Japanese wineberry, as well as several other varieties not extensively introduced in southern California; but he is not ready to make an extended report as to their adaptation to this climate and section. Currants, as a rule, do not seem to thrive in this climate, but he has succeeded in raising a fine crop from a small root of Fay's Prolific.

It might be well to mention briefly the best method of planting and pruning the blackberry and raspberry. They seem to require about seven feet between rows, and four feet in the row. In the spring, all the old stalks which have borne fruit the previous year should be removed, as well as all the smaller ones but three or four of the most vigorous shoots, and leave the trimming of those until after they are leafed out. The shoots coming out for the next season's bearing should be pinched off when they arrive at a proper height, so that the side branches may grow, giving a larger fruiting surface.

Pruning and Curing the Lemon.

By I. C. Wood of Ontario, at Southern California Pomological Society.

Coming first to the question of pruning, it seems like traveling on dangerous ground, because very few of our fruit-growers consider the pruning of a lemon tree of any, or very little, importance. I find, as a rule, among the various fruit-growers, they are quite alive to the importance of the use of fertilizing, also good cultivation, but of pruning, other than the removing of superfluous suckers, or lopping off here and there a rampant side shoot or a broken limb, there is very little done. There are a few of our orchard trees that will submit so readily and bend to our wishes so kindly, and respond so bountifully to an intelligent and judicious use of the pruning knife, as the lemon. Very true, from the symmetrical habit of the tree and free as it is in its habit of growth and generally productive under almost all circumstances and that, too, without very much care, which makes it seem to the average grower that he is amply rewarded without going into the cutting process called pruning, this part of the knowledge of horticulture is, as a rule, not well understood. So, also, those that do not spray for the destruction of the codlin moth. A certain per cent of their fruit may be good, but surely those that do spray intelligently have a very much larger per cent of perfect fruit. The same with the lemon, if we prune properly and for a purpose we can accomplish that purpose; the conditions being equal, the pruned tree will average up a larger per cent of good commercial fruit than the tree not pruned, we will gain in several other particulars which I will endeavor to explain.

No good peach-grower at this time will admit that to get the best results he must allow his trees to grow at will, but instead the trees are often severely shortened in and the fruit thinned besides. Lemon-growers a few years hence will find pruning the lemon just as essential to attain the best results as it is the peach. The market demands an even, average-sized lemon, which may be called medium. We can easily get this fruit of the proper size if everything is in proper condition, because we can pick the fruit before it is done growing. But suppose our trees are allowed to over-crop, and like the Eureka, for instance, is carrying the major portion of that crop out on the extremities of its branches, often small, weak shoots not larger than a lead pencil, endeavoring to mature or carry up to size the market demands, a dozen fruits, whereas it has not vigor enough to properly support one-third to one-half the amount. The result will be not more than half will average up to the standard size.

Will pruning remedy the difficulty? If the tree is in proper condition, yes. If the branches had been shortened in, the remaining fruit would have been up to standard size, and the system followed out, the following crops also.

How shall we prune, and when shall we do it? As to the first question, if the trees are one year old I would cut them to about three and one-half feet high; if older, possibly higher, according to strength of plant. Then let it branch from near the ground, say one to one and one-half feet. As soon as the young shoots are strong enough, select from four to six or more of the best of them, see that they are evenly distributed on every side of the stem and at different heights from the ground, allowing the uppermost to form the leader, which should be encouraged from year to year to continue as a leader, so as to avoid as far as possible decided forks. At end of first year prune in all side shoots and top according to the amount of wood made—usually one-half will be about right for the lower branches and more severe for the upper ones. The object is to shape the tree and keep it in the form of a letter "A," limbed right from the ground or nearly so. In pruning do no cut at random, especially at this stage, but see which way you want the upper buds to grow, as the upper bud usually makes the leader which we want to encourage to go upward and not outward, as we are laying a foundation for a heavy crop of fruit and we want to keep that crop as much protected as possible by a mass of foliage, and equally distributed through the tree and close to the stronger or main branches. The object is to make the tree carry a full crop and that, too, without props or ropes, which are expensive, take time and labor to put in place, besides being unsightly and in the way. Moreover, the trees will be so compact in their makeup that should we be located where subject to winds, the resisting power of the tree will be much greater and losses of fruit and breakage of branches very much lessened. The crop of fruit will be found very largely on the inside of the tree, insuring less sunburn or that unpleasant deep yellow color on the side exposed, as is so general when the crop is allowed to bear on the outside and at the extremities of the branches.

When shall we prune? An old writer answered the question by saying, "Whenever the knife is sharp." That will apply very well to the lemon, because, to prune it properly and keep it within proper bounds, it should never be allowed to make a great amount of wood to be cut away at a single pruning, especially so after the trees have come into bearing.

In this section there is a half-dormant season during the months of February, March and a part of April, which I would consider the proper time for making our heavy cutting, if it becomes necessary at any time, which may be the case in young and thrifty trees not yet in bearing. I have before recommended pruning the lighter wood at the time of picking the fruit, and experience has taught me there is no time when we can do pruning so effectually. When this method is followed up we invariably find a large amount of the fruit on the inside of the tree, and on small willow-like branches. When the stronger growth has been kept in check, these smaller branches are encouraged and live on because they receive a fair proportion of the tree sap, which would otherwise go to the stronger parts, and if allowed, the smaller shoots, especially on the inside, would die, and the inside of the trees would become a craggy mass of small, dry branches. If the more rampant branches are properly kept in check, these small branches are fed in

proportion and set fruit, which also attracts sap, and the inside of the tree continues a living mass of green. And now to keep it so; in addition to the heavier cutting of stronger branches, when gathering the fruit, or as soon after as possible, cut these little branches back to where the wood is round and plump. Then it will again push, forming new growth, making new fruit, wood and leaves, and keeping the sap circulating to these parts which otherwise would become exhausted. From this small wood we invariably get the evenest grade of smooth-skinned and light-colored fruit, with a small per cent of undersized or seconds. If these small branches are left long after the crop is gathered, they seem to harden and do not start out again as readily as when cut at the time or immediately after gathering the fruit.

Now what shall we say about curing the lemon? Is this a great secret that can be understood by the few, or is it like other things, simple? My experience has been comparatively limited in this field, and I would rather listen than undertake to teach. However, will banter by putting the chip of argument on my shoulder, that others better versed on the subject may step forward and knock it off.

The proper size to gather fruit for commercial purposes is so well understood that I will not discuss it here. The matter of gathering should not require any directions from me at this time; still, we might say right here, the fruit must be handled carefully. To the experienced that ought to be sufficient; by those who have had but little experience it may not be understood. The fruit must be cut, not pulled, and should be handled just as carefully as eggs, especially so in the first stages and at the time of gathering. When a lemon is first picked from the tree, the skin is firm but very tender, and made up of a series of small oval pimples; at this stage these pimples are easily ruptured, which exposes the inner or sappy portion to the atmosphere, and is likely to cause decomposition. Fruit after being picked a few days becomes wilted and the skin toughens, and bruising is not so easy. Curing depends on heat and moisture. If the fruit is put in a tight, warm room, the curing process goes on very much more rapidly than in a cool room, or one in which there is a free circulation of air.

Shall the fruit be placed on trays in single layers, or in boxes? In my opinion it really makes no difference. The place in which the fruit is put to cure controls the situation. In the winter season, fruit carefully handled cures quite as well in an ordinary barn, stacked up in tight boxes, as it does in the best of lemon houses. The boxes being tight, and one set on the other with a free circulation of air about them, and that air containing moisture, the drying is very slight. The temperature is quite cool, often nearly to the freezing point. Conditions being right, lemons thus treated will, nine times out of ten, cure nicely in from six to eight weeks.

Now, if we can arrange a curing house so as to make it convenient and at the same time maintain a proper temperature, with a plenty of good, sweet air, and that not too dry, in fact, like it is in the winter season, then the problem of curing the lemon would be solved. The idea of a tight, dark room is all right for storing and for long keeping, providing a low temperature can be maintained. The ripening process is retarded and decomposition slow. In the near future the directions for curing the lemon will be a good tight building, or one that can be made so when required. The lemons spread out on trays so they do not rest on each other, then decayed fruit can be easily removed. The room wherein the fruit is stored will be so arranged that a free circulation of air can be had to carry off foul and stagnant atmosphere that may have accumulated, and also to regulate the temperature. The boxes or trays wherein the fruit is stored will be made to fit closely together so that a current of air does not come in direct contact with the fruit. In warm weather possibly the air should be charged with more or less moisture to counteract the drying effect of the necessary amount circulating to purify the chambers or rooms. In fact we must imitate winter temperature and moisture as near as possible to get the most satisfactory results. However, we have reached that point where we do not have to cure the lemon three or four months before shipping them to distant markets, as we used to do—four or six weeks are nearer the proper time. In many cases when the fruit still shows green tips, it can be wrapped and boxed as the ripening process still goes on, and if it has been properly handled there is very little danger of decay for from four to eight weeks after packing. If a much longer period is desired, cold storage is the only known remedy yet.

THE VETERINARIAN.

Tuberculosis in Milch Cows.

This dreaded disease has been prevalent among our dairy cows, chiefly those kept in close quarters for city milk supply, for many years. There was recently a discovery of the existence of the evil among the cows of the Insane Asylum at Stockton, and all the affected animals were destroyed. This is a matter which every dairyman should look out for. Just now the Government proposes to proceed against this disease. The Washington Post says that the agricultural appropriation bill, which has passed the House, contains an item of \$100,000, to be expended by the Bureau of Animal Industry in investigating the prevalence of tuberculosis among cattle. Very little is known at present of this disease in different sections of the country, but a great many herds have been discovered in which from 60 to 70 per cent of the animals were infected, and it is for the purpose of collecting more definite information as to the proportion of animals infected, and to experiment with measures for controlling the disease that the appropriation will be used. After this is accomplished, should it be decided that an attempt to extirpate tuberculosis is practi-

cable, it will be necessary to call upon Congress for larger additional appropriations to put the project into execution.

It cost the Government \$1,500,000 to eradicate contagious pleuro-pneumonia, and it took a large force of skilled veterinary inspectors, under the direction of Dr. D. E. Salmon, five years to do it. Great Britain is still engaged in a hard fight to accomplish the same object.

Compared with the magnitude of the labor required to stamp out tuberculosis, the pleuro-pneumonia work sinks into insignificance. All the animals infected with pleuro-pneumonia, or that had been exposed to the disease, were slaughtered, and Dr. Salmon says if all the cows affected with tuberculosis are killed, fresh milk will cost as much as champagne. The danger of drinking milk from tuberculosis cows is well known, but the danger may be avoided by sterilization—that is, subjecting the milk to a temperature of 150° F. for a period of half an hour. In this connection it may be said that condensed milk is not always perfectly harmless. Tuberculosis may be communicated through milk that has been condensed at a temperature lower than the above.

Some of the scientists attached to the Animal Industry laboratory recently inoculated a guinea pig with fresh milk delivered in Washington, and within the prescribed period the little animal developed tuberculosis in a pronounced form. A startling circumstance in connection with this experiment is the statement that the White House milk supply came from this same source.

By the use of tuberculin, discovered by Prof. Koch, it may readily be determined whether an animal is affected with tuberculosis. The market price for this preparation in Germany is \$8 per four grams, or a teaspoonful. It is prepared in the United States only at the Animal Industry laboratory, from whence it is distributed free to the authorities of various States, boards of health and live stock sanitary commissioners. Blanks for recording results of tests are sent with the preparation, with the request that they be carefully filled out and returned to the Bureau.

Tuberculin is really only a liquid in which the tubercle bacilli have been living. It takes nearly two months to prepare it. First, a sort of meat broth is prepared, in which the bacilli are placed, and there they are cultivated and thrive until the liquid becomes thoroughly infected. Then they are killed by subjecting the liquid to a temperature of 150° F. and filtered out; the liquid undergoes some further process in the way of refining and is then ready for use. A small quantity is injected under the hide of a cow, and in from 8 to 15 hours, if she has tuberculosis, her temperature rises from two to three degrees, and sometimes as high as four or five degrees.

While the test of tuberculin is not infallible, it furnishes by far the best and almost the only known outward indication of the existence of the disease. It is possible for perfectly sound animals, which have been treated with the injection, to show a rise in temperature, and it is also possible that diseased animals similarly treated will fail to show a rise, but such instances are extremely rare. There is a theory among some veterinarians, and one to which Secretary Morton leans, that highly bred animals are more disposed to tuberculosis than the more plebeian of their kind. It is perfectly certain, at any rate, that blooded stock are equally liable to the disease. Among other herds, it was discovered among the pure-bred Guernseys belonging to Hon. Levi P. Morton.

As soon as the appropriation of \$100,000 becomes available, the Bureau will place a force of inspectors in the field, and begin the work of inspecting the numerous herds from which Washington gets its milk supply, with the co-operation of the district health office. A list of over 500 owners of cows in the district, and within a radius of 30 miles of this city, in Virginia and Maryland, has been prepared ready for commencing operations. Various herds in this section of the country have been inspected and tested from time to time. A herd of 135 animals near Richmond, Va., was found to contain 90 diseased, and a herd in the district had 80 per cent diseased.

The Bureau has furnished tuberculin to the officials of 23 different States, and over 1000 blanks recording the tests made have been returned and are on file. Of this number about 500 came from Vermont and 200 from Massachusetts. A special bulletin upon tuberculosis is being prepared by Dr. Salmon and will shortly be published.

WHAT THE DAIRYMAN CAN DO WITH THE DISEASE.

The measures to be taken by the farmer in extirpating tuberculosis from his herd, and thereafter keeping his cattle free from this dread disease, are summarized by James Law, of New York Cornell University Station, as follows: Board up the partitions of the stalls at the front, so that no two cows can feed from the same manger nor lick each other. Keep each suspected animal strictly in its own stall and manger. Do not let any such animal use a drinking trough or bucket in common with other animals. Avoid old milch cows and unthrifty ones, or keep them secluded from the rest of the herd. A weakness of constitution and a susceptibility to tuberculosis is indicated by a head which is narrow between the horns; by sunken eyes; deep temporal cavity back of the eyes; thin, narrow, ewe neck; small chest, which lacks both in breadth and depth; hollow flank and tendency to pot-belly; a general lack of muscle, so that the limbs seem loosely attached to the body, and later shades of brown and yellow in particular breeds. If, however, such animals are of high value for the dairy, and can be kept free from tuberculosis, they need not be rejected. The finest conformations of the darker colored beef breeds furnish no protection in the presence of this microbe. Purchases should not be made from a herd in which tuberculosis has appeared, or in which cattle have died within a year or two, without first resorting to the tuberculin test.

Refuse a cow with a husky or rattling cough, wheezing, hurried breathing, discharge from the nose, fetid breath, hard bunches under the skin, diseased udder, swollen bones or joints, unthriftiness or a tendency to scour or

bloat. Do not purchase from city, suburban or swill stables. All new or suspected cattle should be tested with tuberculin by a practitioner thoroughly acquainted with cattle and their diseases, the test to be repeated in four weeks if not satisfactory. It is well, also, to test the swine, goats, sheep, horses, rabbits, cats, dogs and fowls on suspected farms. Kill all tuberculous animals, and either boil, burn, dissolve in acid or bury deeply in a place to which no animals have access. Thoroughly disinfect the premises, also all products of the diseased animals, and all articles used about them. Allow no consumptive person to attend cattle or other live stock, nor to prepare their food. Such vermin as rats, mice and sparrows should be exterminated when infesting a building which has at the same time harbored tuberculous animals. Tuberculosis, like many other contagious diseases, is absolutely preventable, and is allowed to continue its career of diseases because of reprehensible ignorance and criminal indifference.

POULTRY YARD.

How to Handle Poultry in Large Numbers.

Herbert B. Reed of Montana writes of his methods as follows: The question is, How many fowls should be together? If too few, the expense of housing, yards and care is so large that there are no profits; if too many, disease, vermin, bad air and irregular food supply cut down the profits sometimes to a minus quantity. The writer has paid more attention to the subject than any other, because his father and grandfather conducted a long series of experiments with poultry, and they both came to the conclusion that nothing was more important than to have the correct number in each pen, that of course depending upon cost of houses, fences and care. I have found by my own experiments that there should never be more than thirty chickens together at any time between the egg and the ax—"the cradle and the grave." This rule is subject to no exceptions. In my own business I never allow that many, twenty-five in one brooder at a time being my limit.

Without going over the numerous experiments I have made in this line, I will merely give the results. You who read this may have at a glance what has cost me many years of labor and many hundreds of dollars. Here in Montana, with lumber at \$15 per M. and labor at \$50 per month, feed averaging \$1 per fowl per year and eggs 30 cents, never more than twenty nor less than fifteen hens in a pen; never more than thirty hens in a flock on a farm or free range. It will do to let more run over one range on a farm if they have separate houses located far enough apart so that all do not loaf in one place. If you are not fortunate enough to have a large range for your birds, or are breeding, you must have enclosed pens; in that case do not let any pen of fowls run on the same more than three months. My plan is not the best one possible, because more expensive houses and yards would be better for the chickens, and they would perhaps like more expensive food, but I keep hens for revenue first and pleasure second, therefore every extra dollar put into yards and fences and time is wasted if it doesn't increase revenue. Build your houses as much alike as possible, as simple as can be, and in a row. Have an open alley on one side of all, that you can drive a load through without opening gates; make a hand-cart from two buggy wheels to carry water, feed and manure on; place every house on line of fence between two yards; have end fences of yards (above the ground board) movable. Arrange your fowls so that every alternate yard is occupied, leaving the others without a fence, except the posts and bottom board.

This leaves every pen the width of a yard or alley from any other pen and prevents fighting through the fence, flying over fences into another yard, and, above all, prevents one sick fowl from contaminating your entire flock. The alternate vacant yards are plowed and planted to oats and sunflowers in April; July 15th end fences are moved, gate from coop thrown the other way and the fowls are turned in; they eat the oats, but leave a crop of sunflower seed for winter. The yards they came from are plowed and planted to turnips. You keep your hens on fresh ground and have a supply of green stuff for them, getting as you do a crop from all your land not covered by coops. If you don't believe this is the correct method, get an egg report from people having a flock of twenty or less, then from a farmer having 200, all running together, and see which is greater. But you must keep expenses down in dividing them up this way and keep labor down, and the only way to do this is to have a uniform lot of houses and have system. Subscribe for some good poultry paper, keep your fowls warm and clean, and give a variety in food from cut clover to meat cake, then if you fail to make money, sell out and go to work on the section.

Irregular Feeding.

Promptness in the performance of every duty on the farm is the first requisite for success. This means close application to the study of the business and to the labor necessary to carry out every detail in the growing of crops or in the care of the domestic animals. Poultry, especially, needs the best of attention.

Irregular feeding is the source of many disorders among fowl stock. Regularity in the time of feeding is advisable because fowls that are fed at stated periods each day will soon learn to look for their meals at that hour, and in the intervals will contentedly go out and forage for the rest of their living. The exercise they thus obtain is conducive to health and egg production. But if fed at irregular hours, now early and now late, one day twice a day and another day three or four times, they will be sure to loaf about the feed troughs anxious to see what is coming next. Regularity as to quantity is as important as regularity in time. To

have a feast one day and a famine the next is not good for man or beast. The digestive organs can not endure it a great while, and sooner or later there will be a breakdown. From this alternative starving and stuffing come various disorders of the digestive organs, such as diarrhea, crop bound and indigestion.

The Great Hen Business.

The hen business, says the *American Agriculturist*, represented an annual value of about \$100,000,000 for eggs alone, estimated at 12 cents per dozen, according to the Census of 1889. In ten years ended with the year named, the number of barnyard fowls increased 153 per cent, other fowls (that is, turkeys, geese and ducks) increased 15 per cent, and egg production 79 per cent. The best census that could be taken is necessarily far from perfect, because so few keep accounts with their hens. Every State shows a large gain in the poultry census, but the most extraordinary development is reported from the Southern States. Missouri leads the States with nearly 23,000,000 barnyard fowl—three times what she had in 1879, while Illinois returns the largest egg production, over 60,000,000 dozen in 1889. The Census totals for the United States thus compare:

	Poultry on hand June 1, 1879.	1889.
Barnyard fowls.....	102,265,653	258,472,155
Other fowls.....	23,234,687	26,816,545
Total fowls.....	125,500,340	285,288,700
Eggs produced previous year, dozens.....	456,875,080	817,211,146

A Better Guide Than the Nose.

A writer in a Western paper says that among the needs of the poultry-keeper he "must have a nose." He should be able to tell when the poultry-house is filled with impure air in the morning, and when the space under the roosts ought to be cleaned out; when the dough to be given hens or chickens has become too sour to be fed to them; when there are rotten eggs in the nest or in the incubator; when there is roup among the fowl in the house, or when the brooder needs cleaning out.

It is a very well-written article, but a man who had not the sense of smell ought to know how often to clean out under the hen roosts, or to cleanse the floor of the brooder. He ought also to have his hen-house so well ventilated all the year that there would be no impure air in it, and he certainly has no good excuse for mixing up dough for hens or chickens so long before it is needed by them as to allow it to get sour. We should prefer to risk our poultry under the care of a man who could not smell anything than with one who needed to be reminded by his nose when it was time to clean up.

THE DAIRY.

Cleanly Handling of Milk.

That the cheese and butter makers may be able to make an A1 article of cheese and butter, it is essential that they be supplied with first-class raw material. It is just as impossible for a furniture dealer to make excellent furniture out of decayed, worm-eaten lumber, or the manufacturer of "all wool" goods to make them out of shoddy, as it is for a maker to produce fancy cheese or butter from bad milk.

A cheese maker of several years' experience said recently that the chief faults he found with the milk supplied in his locality were: (1) Want of aeration; (2) lack of straining. In the older cheese and butter sections these two are doubtless the points chiefly neglected. A recent bulletin of the Ontario Agricultural College says on these points:

Meaning of Aeration of Milk.—To aerate milk is to put air into it; hence the importance of pure air where this is done. Not only this, but aeration implies the driving off of gases that may be already in the milk. These are most easily driven off while the milk is fresh and warm, and for this reason aeration should be done at once after milking and before the milk is cooled.

The flavor of the cheese and butter largely determines the price. The flavor of these depend, with a competent maker, upon the flavor of the milk; therefore the price depends, to a great extent, upon the flavor of the milk. This something which governs price depends upon proper management of milk at the farm. Proper aeration will get rid of any objectionable odors that may have come from the cow or food. Where paying by test is practiced, aeration and stirring will prevent the cream from rising, and consequently the milk will give a higher average test and one more uniform.

How to Aerate.—It may be done by dipping, pouring or stirring or by the use of an aerator. An aerator properly used is a help, but abused it is a hindrance. Simply running milk through an aerator once after milking, without any further stirring, is not sufficient. It should be stirred two or three times at intervals of 10 or 15 minutes after being put through one of these aerators, and again before going to bed. Not only to improve flavor should this be done, but also to prevent loss of cream in the vats, especially in the fall, when milk frequently stands some time before being set. Some keep their milk over night in pails hanging on hooks. These hooks are fastened to a strong pole or scantling supported by means of a couple of posts in the ground. The morning's milk needs aerating as well as the evening's.

Aerators Should Be Kept Clean.—Look out for grease and dirt in nooks and crevices. Do not buy an aerator that is not easily cleaned. One good maker in western Ontario does not advise the use of aerators at all, for the reason that patrons do not keep them clean.

A good thing for purifying milk may be made by taking an ordinary shallow milk pan made of strong tin. On the outside bottom of this fasten a handle about 2½ feet long. Punch eight or ten small holes in the bottom of the pan.

In using, put the inverted pan squarely down into the milk, and allow this pan of air to bubble through the milk. When it ceases bubbling, draw out and then insert again. Do this a dozen times each evening and morning. The evening milk should be treated about three times in the foregoing manner, once immediately after milking, then in 15 minutes, and again in about half an hour. Stir before retiring for the night.

Straining should begin before commencing to milk, by brushing off all dirt, hairs, straw, etc., from the udder, teats and body of the cow. Let it be the duty of some one person to go over the cows with a soft brush or a damp cloth before the cows are milked.

How to Strain.—An ordinary wire-sieve strainer does very well, but we add to this by doubling cheese cloth or thin cotton so as to have four thicknesses. Lay the cloth across the bottom of the strainer, and then fasten it on by means of a tin ring, which slips over the cloth and bottom part of the strainer. For quickness we use a strainer that a pail of milk may be put into at once. This sits in a wooden frame over the can. Some use a woollen cloth to strain with. Cloth of some kind is necessary to catch hairs and fine dirt. This cloth must be kept clean. Scald it thoroughly each time after using.

Why Strain?—Cheese and butter are articles of food to be eaten by men and women. A great many forget this. They seem to think that it does not make any difference what kind of milk is sent to the factory, judging from what may be seen on the strainers of factories. It all goes—well, goes somewhere, and they do not eat it.

AGRICULTURAL SCIENCE.

Fungi and Fungicides.

One of the most important directions of recent agricultural progress is found in the recognition and treatment of plant diseases due to parasitic fungi. Until within a few years no practical remedy was known for most of them. In a practical manner, Professor Weed has now brought together in easily accessible form the essential facts concerning the injuries, life histories, characteristics and preventives of plant diseases. The book describes, in simple but accurate terms that any one can understand, what fungi are, and shows how they are propagated and destroyed. Formulas are given for every mixture the application of which, by spraying or otherwise, has proved helpful, and exact directions are furnished for applying these fungicides, either alone or in combination with insecticides. The work is divided into five divisions: Part I treats of fungi affecting the larger fruits—the apple, pear, quince, plum, cherry and peach, and considers all forms of smut, mildew, rots, rusts, leaf and twig blights, fruit spots, black knot, yellows, etc., with which they are affected. Part II considers fungi affecting small fruits—the grape, currant, gooseberry, raspberry and blackberry, and strawberry. The chapter describing the black rot of the grape and giving directions for preventing its ravages, is alone worth many times the cost of the book. Part III considers fungi affecting shade trees, ornamental plants and flowers. Part IV treats of fungi affecting vegetables, such as the bean, beet, cabbage, celery, onion, cucumber and melon, potato, sweet potato, spinach, tomato, etc. While each of these is fully considered, the chapter on onion smut and potato blight is particularly valuable. The real cause of potato scab is described and the cure for it given. In Part V, fungi affecting cereals and forage crops are treated, including oats, wheat, Indian corn, sorghum and broom corn, alfalfa and clover. Between the covers of this book will be found a comprehensive digest of all that is known on the subject. The work is illustrated with nearly 100 original illustrations true to life, and published by Orange Judd Company, New York. Price, postpaid, bound in cloth, \$1; paper covers, 50 cents. It can be ordered through the PACIFIC RURAL PRESS.

Great Value of Leguminous Plants.

A recent bulletin issued by the Department of Agriculture contains important information on the value and use of leguminous plants for green manuring and for feeding. A chapter of the bulletin entitled "How Plants Get Nitrogen from the Air," is especially valuable, and is in part as follows:

The air we breathe is about four fifths nitrogen and one-fifth oxygen. We use oxygen in breathing, but discard the nitrogen. It has been regarded merely as a material for diluting the oxygen, which would otherwise be too strong for our use. All attempts economically to render this nitrogen available for plant food by chemical means have been unsuccessful. Recently it has been discovered that the so-called leguminous plants—clover, peas, beans, lupines, vetches, etc.—can take up this nitrogen of the air and can grow without being manured with nitrogen if manured with phosphoric acid and potash. The manner in which this nitrogen assimilation takes place has been carefully and patiently studied by scientists; and although the details are not fully understood, the primary cause has been found. It is believed that plants are enabled to get this nitrogen through the activity of the lower forms of life, bacteria or microbes. These organizations live in the soil and are to be found where leguminous plants have been grown. They produce, or cause the plant to produce, little nodules or tubercles on the roots. It is through these tubercles that the plant gets its atmospheric nitrogen. By just what physiological process the nitrogen assimilation takes place is a question still in dispute among scientists. It is a peculiar fact that few, if any, root tubercles are formed when leguminous plants are manured with nitrogen; the plants must first hunger for nitrogen before the tubercles are formed, and the presence of tubercles indicates that the plant is taking nitrogen from the air.

Now, curious as it may seem, there appear to be different forms of bacteria for different kinds of plants. Hence it sometimes becomes necessary to provide crops with the

necessary bacteria before they can use the nitrogen of the air. This is done by applying a light dressing of soil in which the kind of plants it is wished to grow have been previously grown. This is called soil inoculation. It is sometimes necessary in growing a crop on a piece of land for the first time in several years. Suppose, for instance, that peas which had been sown on land manured with phosphates and potash, but without nitrogen, failed to grow luxuriantly. If the other conditions were favorable, the inference would be that bacteria of the right kind were lacking in the soil and a light dressing of soil in which peas had previously been successfully grown might be applied. Such treatment as this has repeatedly been tried with success on a large scale. These discoveries throw a new light on green manuring and on the plants best adapted for green manuring. They recommend it more highly than ever before as a soil renovator and a cheap means of maintaining the fertility of a soil. They show that while both leguminous and non-leguminous plants enrich the soil alike in humus-forming materials, in proportion to the size of the crop, they differ in respect to the source of their nitrogenous materials. While non-leguminous plants derive their nitrogen supply almost exclusively from the soil, leguminous plants may take theirs largely from the air. Consequently, if spurry, buckwheat, mustard, etc. (non-leguminous plants), are grown on the soil, and the crop plowed in the soil is not materially enriched in nitrogen, the process is simply returning to the soil all the nitrogen which the crop took from it. But since leguminous plants may derive the larger proportion of their nitrogen from without the soil—that is, from the air—their use for green manuring actually enriches the soil in nitrogenous matter.

It will thus be seen that by green manuring with leguminous crops it is possible to manure the soil with nitrogen from the air, a free and inexhaustible source, and thus avoid fertilizers containing much nitrogen. This greatly lessens the expense for commercial fertilizers, for nitrogen is the most expensive element the farmer has to buy. It costs from 15 to 20 cents a pound, while potash and phosphoric acid cost only 5 to 7 cents, or even less. Although grains, grasses, corn, cotton, root crops, tobacco, etc., cannot use the nitrogen of the air, green manuring enables them to benefit by it indirectly.

ENTOMOLOGICAL.

Entomologists of the Department of Agriculture.

The retirement of Dr. C. V. Riley from the position of entomologist for the Department of Agriculture, which took effect June 1, 1894, after a long period of distinguished service, has been followed by the appointment as entomologist of Mr. L. O. Howard of New York. Mr. Howard was graduated from Cornell in 1877 as B. Sc. After one year of post-graduate work, Mr. Howard received the degree of M. Sc., and was soon after appointed assistant in the Division of Entomology in the U. S. Department of Agriculture. In 1886, when the place of first assistant to the entomologist was provided by statutory enactment, Mr. Howard received the appointment, and has filled that place ever since.

Mr. Howard has been joint editor with Dr. Riley of the periodical publication issued by the Division of Entomology, "Insect Life," since that publication was started. Among the contributions to the publications of the Department of which he is the author are Bulletin No. 5, Descriptions of North American Chalcididae; also of Bulletin 17, The Chinch Bug. He contributed to the Annual Report of 1887 a monograph on the Codling Moth, and to that of 1888 one on the Plum Curculio. Mr. Howard is the author of numerous reports, bulletins and other contributions to the literature of entomology. He is a member of numerous scientific societies, being president of the International Association of Economic Entomologists, secretary of the zoological section of the Association for the Advancement of Science, and has been secretary and is a member of the Council of the Biological Society of Washington. Mr. Howard was the entomological contributor to the Century and the standard dictionaries, and is the author of a chapter in the Standard Natural History.

The vacancy created by his promotion as entomologist has been filled by the appointment as first assistant of Mr. C. L. Marlatt of Kansas. Mr. Marlatt was graduated from the Kansas Agricultural College, B. Sc. in 1884, and in 1886 received the degree of M. Sc. for special work in entomology. He served for two years thereafter as assistant in the Department of Horticulture of the Kansas Experiment Station in charge of the entomological work. In 1889, Mr. Marlatt was appointed assistant in the Division of Entomology in the Department of Agriculture.

For the Woolly Aphis.

Edward Berwick of Monterey recently wrote to Ellwood Cooper, president of the State Board of Horticulture, asking his experience with *Leis conformis* the ladybird which Mr. Koebele sent from Australia to eat our woolly aphis. Mr. Cooper's answer gives his method of destroying the woolly aphis with our own ladybirds and we publish the following extract:

I have not been able to find any of the *Leis conformis* this year. When I liberated those sent from Australia I put them in my olive orchard, not knowing what Mr. Koebele claimed for them. You heard my address at Los Angeles, and the plan I laid down to overcome the "woolly aphis" on apple trees. The red ladybird, 10 spotted red and 10 spotted yellow, with their larvae, will devour the woolly aphis. The beetles, however, if caught and turned loose on the apple trees, will fly away seeking better food; but if you catch the eggs or the larvae and put the same on the trees where there is plenty of food, they will eat it up, and when the ladybirds are hatched from the larvae they will remain on the apple trees. The trees I experimented with last year are clean. I am searching now for the larvae and eggs. These ladybirds exist all over the State.

THE HOME CIRCLE.

A Health.

[Edward C. Pinkney died at twenty-six. His exquisite poems, of which "A Health" is the best known, were written when he was twenty-one and twenty-three, and published in a single thin and now scarce volume. He was one of the truest of American poets, cut off from the display of his full powers by an early death, after an adventurous and erratic life.]

I fill the cup to one made up
Of loveliness alone;
A woman, of her gentle sex
The seeming paragon;
To whom the better elements
And kindly stars have given
A form so fair that, like the air,
'Tis less of earth than heaven.

Her every tone is music's own,
Like those of mountain birds;
And something more than melody
Dwells ever in her words!
The coinage of her heart are they
And from her lips each flows,
As one may see the burdened bee
Forth issue from the rose.

Affections are as thoughts to her,
The measure of her hours;
Her feelings have the fragrantcy.
The freshness of young flowers!
And lovely passions, changing oft,
So fill her, she appears
The image of themselves by turns—
The idol of past years.

Of her bright face one glance will trace
A picture on the brain;
And of her voice in echoing hearts
A sound must long remain!
But memory such as mine of her
So very much endears,
When death is nigh, my latest sigh,
Will not be life's, but hers.

I fill this cup to one made up
Of loveliness alone;
A woman, of her gentle sex
The seeming paragon.
Her health! and would on earth there stood
Some more of such a frame,
That life might be all poetry
And weariness a name.

A Humble Failure.

I WAS getting my first lesson in business. "Now, my boy," said Mr. Jenks, the superintendent, "after all I have told you, I want to give you a bit of warning. If you want any candy, eat all you want in the store, but never take a piece away unless you pay for it. So with everything else. Remember that in business strict honesty must be observed."

I had been in the store for some weeks, selling anything from self-binders to matches—for the store was the only one in the village—when one day a man came slouching in and asked for the "boss." There was nothing striking about him. His face impressed me as being two-thirds covered by a tawny beard, and his dark, uncombed hair hung down over his eyes, contrasting disagreeably with his dusty complexion. A loose cotton shirt, drawn into wrinkles by half a suspender supporting a pair of patched "overalls," with a pair of heavy-soled shoes, identified the man as one of the poor farmers of the plain north of the village. To the "boss" he explained that three years ago he had traded his two-year-old calf for a colt, and that the colt was now a horse, and that a couple of days ago he had traded his second cow for another horse. Now, having two horses, if he had a mowing machine, he could do his own harvesting very quickly, and then he could mow his neighbor's fields "on shares," and thus pay for the mower. Could the boss let him have a mower and pay for it in the fall? He had never gone into debt so heavily before, and he knew it was a risk, but he thought he could do it, and then his Billy was awfully smart—he had learned his letters already, and he was only six. If he could make a little money with the mower he could buy Billy books and a coat to go to school in the village. I thought the man grew faintly animated as he spoke of Billy. Evidently he was making the greatest speculation of his life for Billy's education. The result was that when he drove home a mower was tied to the half-dozen boards on four block wheels which were his wagon, and the same day I entered in the day-book of the store: "June 3d, Ephraim Goodnow, to one mower, sixty dollars. Three months at one per cent monthly."

Sept. 15th had passed, and Ephraim Goodnow had not paid any of the three bills for \$61.80 sent him. Mr. Jenks, therefore, sent his assistant to collect the bill, saying that in such a bad year, when all the crops had failed, the store could not afford to have

outstanding accounts. But the assistant reported that Goodnow had no money where-with to pay the bill, and the only way to collect it was to take his wheat—and at the present low rate and the poor year it would take nearly his whole stock—or his horses, which were worth about \$40 each.

"Well," said Mr. Jenks, "I need a couple of horses to hurry on the harvesting. Go up to Goodnow to-morrow and take his horses. I'll give him sixty dollars for the span. If he objects—well, we can collect by law."

The afternoon of the next day, then, the assistant and I started out to cross the prairie to the hills, twenty miles away, where Goodnow lived. The ride across the prairie did anything but cheer our spirits. Nearing the foothills, the grass grew scantier and the sand ridges more frequent, and the prairie dogs from their mounds barked at us every few steps. A glistening green snake crawled slowly around a sagebrush. Toward sunset we reached Goodnow's home. Home! A hole about four feet deep had been dug in the ground and covered with untrimmed poles meeting at right angles. The poles had been covered with dry branches and these with earth. One gable was walled up with branches and earth like the roof, while the other was closed with sawed boards in which was a door. Two panes of glass, set without frame in the boards and held in place by a nail at each side, served for windows. To one side of the "dug out" poles had been planted in the ground and covered with willows and straw and earth—that was the stable for the horses and the cow. The cow, thin at the sides, was tied to a post under the shed, and a woman dressed in a dirty yellow gown was milking her. Back of the "house" was a sand pile, where two half-naked children, three or four years old, were throwing handfuls of sand at each other. From the inside of the house I thought I heard the wail of a baby. Goodnow was just coming in from his day's work, driving his horses before his mowing machine. At his side walked a boy about twelve, whose dragging gait and dull look bespoke too well the man he would be. On one of the horses rode a little white-haired boy, about five or six, dressed in a dirty shirt and a short pair of pants which were ripped up one leg nearly to the waist; it was Billy. Near the shed the horses stopped, and Billy with his little hands struck his horse on the neck and cried, "Whoa, whoa, Jack, whoa," and the horse, seemingly well pleased, put his ears forward and turned his head to get a look at his little friend.

While the assistant was talking to Goodnow, I went up to the boy and said:

"Hello, Billy!"

He looked at me with a pair of blue dancing eyes and answered very correctly: "Hello, sir."

"You can read, can't you, Billy?" I continued.

At that he grew excited and cried, "Mamma, mamma, I can read, can't I?"

The mother, who had heard my question, and whose greatest delight was Billy's accomplishments, quit milking the cow, ran down into the house and brought out a little tattered book of two or three dozen pages. To my surprise it was the remains of a copy of Luther's Smaller Catechism. Resting the book on the collar of the horse on which he sat, Billy read distinctly from the first remaining page, "For of one blood hath God made all men," and without hesitancy the whole of Luther's Comment.

As he ended, Goodnow came up and explained to his wife the object of our visit. He had offered to give back the mower and one horse for the use of it—without a horse he must carry his wood fifteen miles from the mountains, and carry his wheat to the mill, which was as far away. But the assistant had insisted on the horses or his wheat—the food for the winter—and had threatened court proceedings.

"You see, mother," the farmer said, "I s'pose Billy can't go to school this winter."

I thought his voice was a little husky as he spoke. The wife and mother said nothing, but her eyes filled with tears. The big boy, with clenched hands, leaned against the now useless mower, and looked straight at us while we led the horses away, while tears cut furrows in the dirt on his face. The little ones of the sandpile also began to understand what was going on, and howled and rolled in the sand. Little Billy sat dazed upon the ground where he had been lifted from the horse. When we tied the horses to our wagon he ran to his mother and hid his face in her lap, crying, not loud, but piteously, "Mamma, they're taking away my Jack—mamma, mamma." Goodnow cleared his throat. The sun must have been low, for I saw his eyes glisten. I, too, felt something moving up my throat until I could not speak.

"Damme," said the assistant when we had driven over the prairie for some time, "that was a fine piece of work. In the city these horses will bring a hundred dollars any day."

Last vacation I passed over the same prairie, and the scene of six years before came vividly to my mind. I stopped at Goodnow's place. A yellow-haired boy of twelve years or so was in the yard. I cried: "Hello, Billy!"

The boy stared at me.

"Is your father at home?"

"Naw."

"Do you still read, Billy?"

"Naw."

And he turned and left me.—J. A. Widtsoe in the Harvard Advocate.

Interesting Opinions.

Susan B. Anthony, president of the National Woman's Suffrage Association, declares that the best wives are the women who have the broadest, fullest, deepest opportunities for self-development, who are able to govern the home wisely and to accord to others the freedom they appreciate for themselves.

Clara Louisa Kellogg thinks that the women who unflinchingly discharge the duties allotted to them by nature, would no doubt make good wives.

Mrs. Ballington Booth believes that the best wife and the best home is made only by the woman who is in perfect harmony with the aims, hopes, desires and ambitions of her husband.

Mrs. A. M. Palmer, president of the Professional Woman's League, gives an opinion which will be echoed from every quarter. She says the best wife is brainy enough to be a companion, wise enough to be a counsellor, skilled enough in the domestic virtues to be a good housekeeper, and loving enough to guide in true paths the children with whom the home may be blessed.

Jennie O'Neill Potter, the well-known elocutionist, says the best wife is the woman who has found the right husband—a husband who understands her.

Ella Wheeler Wilcox, the poetess, declares that in order to be a good wife a woman must be void of intensive nerves. She must be neat and systematic, but not too neat. She must be amiable, affectionate, sympathetic and firm, with no desire for a "career."

Marie Louise Beebe, president of the Young Woman's Christian Association of New York, thinks that to be the best wife depends upon three things, viz: An abiding faith in God, duty lovingly discharged as daughter, wife and mother, and self-improvement mentally, physically and spiritually.

Voltaireine De Cleve, anarchist, theorist and poet, says that the best wife is the woman who is never so bound that she cannot put aside household tasks at any time for social intercourse, for religious conversation, for correspondence, for reading, and, above all, for making every one who comes near her feel that her home was the expression of herself—a place for rest, study and the cultivation of affection.

Ellen Battelle Dietrick, secretary of the National Woman's Suffrage Association, is sure that the best wife is she who never forgets that no household liveth for itself. The public-spirited woman who holds her domestic and political duties in harmonious balance is the kind of woman who will make the best wife and the best home.

Where There Is No Afternoon.

A writer in the Indianapolis Journal says: "Strangers to Washington often remark upon the custom of addressing one at all times of the day by the uniform salutation, 'Good morning.' It sounds odd to a Westerner to hear one address him with 'Good morning' at five o'clock in the afternoon.

"This custom is as old as the Congress of the United States and the hours of executive business in the various departments. It is said to be directly due to the morning hour in Congress. The standing rules of the two houses of Congress provide for a 'morning hour,' which extends from twelve to two o'clock, and that provision has made it common to refer to 'morning business' in Congress, which occurs before 'the regular order.' Frequently the regular order is not resumed, and the morning hour is extended until four or five o'clock, especially in the latter days of Congress and when there is a great jam of business. In the executive departments reference is made to the 'morning's work' during the entire day. This is all, of course, official parlance. The custom has grown so that it extends throughout social life and in all sorts of private business, until it is morn-

ing until all Government business is at an end in Washington. When the sun goes down and twilight sets in it is 'Good evening.' It is never afternoon in the national capital."

Shopping In Turkey.

Though the Turks cannot be called lazy, yet they like to take their time. Patience, they say, belongs to God; hurry, to the devil. Nowhere is this so well illustrated as in the manner of shopping in Turkey. This was brought particularly to our notice when we visited the Sivas bazaars to examine some inlaid silverware, for which the place is celebrated. The customer stands in the street inspecting the articles on exhibition; the merchant sits on his heels on the booth floor. If the customer is of some position in life, he climbs up and sits down on a level with the merchant. If he is a foreigner, the merchant is quite deferential. A merchant is not a merchant at all, but a host entertaining a guest. Coffee is served; then a cigarette rolled up and handed to the "guest," while the various social and other local topics are freely discussed. After coffee and smoking the question of purchase is gradually approached; not abruptly, as that would involve a loss of dignity; but circumspectly, as if the buying of anything were a mere afterthought. Maybe, after half an hour, the customer has indicated what he wants, and after discussing the quality of the goods, the customer asks the price in an off-hand way, as though he were not particularly interested. The merchant replies, "Oh, whatever your highness pleases," or "I shall be proud if your highness will do me the honor to accept it as a gift." This means nothing whatever, and is merely the introduction to the haggling which is sure to follow. The seller, with silken manners and brazen countenance, will always name a price four times as large as it should be. Then the real business begins. The buyer offers one-half or one-fourth of what he finally expects to pay; and a war of words, in a blustering tone, leads up to the close of this every-day farce.—"Across Asia on a Bicycle," Century for May.

Fashion Notes

The present season may be known as the era of the bodice. Not only are shirt waists worn with outing costumes of every kind, but the separate waist of fancy silk, chiffon and some other dainty material has now become an affair of dress. Thus we have the most fetching bodices of black chiffon, made up over color, or of heliotrope, yellow or red chiffon, held in fine accordion plaits and made up with huge balloon sleeves and sometimes with entire yokes of glittering jet. Sometimes the red chiffon waists have the upper parts of the large sleeve finished in overlapping points, which cause them to be called "poppy waists" or "chrysanthemum bodices," according to the flower which they resemble. These waists are generally worn with black moire or satin skirts, which act as a foil for the brilliant glowing color of the bodice.

A practical way of fixing over an old dress, when it is necessary to add some new material, is given in a waist model, which has the upper sleeve, full basque and folded straps finished with bows on the shoulders of a contrasting color. Spotted foulard is pretty used in this way if the dress is of one plain color. A pretty bodice to be made in thin silk has a lace-covered yoke outlined with spangled trimming. The full front is drawn up on the shoulders into loops, which are wired to keep them in an erect position.

Among the delicate colored organdies so pretty for summer gowns there are bright poppy reds and dark navy blue. The red gowns are very striking trimmed with black lace and the blue is pretty adorned with white.

Open-work embroidery is fast gaining favor, and is now done on colored chambray as well as white and ecru mull. It is used extensively on one gown, sometimes forming the entire front of the skirt.

Plaid silks are usurping the place which moire has held so long, and have become very popular for dressy gowns.

White dresses are effectively trimmed with yellow laces and insertions, and are particularly pretty made over yellow silk.

Crushed strawberry red is the favorite color in wash silks used for the blouse waist.

The Decline of Beards.

"I have been noticing the number of smooth-shaved men who have entered the hotel during the past two hours," said L. R. Morgan of New York. "Nearly one-half of them have worn no beards. The beard is rapidly going out of fashion. It is more

noticeable in the East than in any other section of the country, but it can be seen in the West also. It was formerly against the law to wear a beard except for soldiers, who were allowed the privilege in order to protect themselves from the cold. Then there came a revolution in custom and everybody wore beards, and the fashion declined again, so that in the early days of the existence of the United States, it will be seen by looking at the pictures of the prominent men of the day, beards were worn principally by the middle and lower classes. Forty-five years ago, however, they began to come in fashion, and during the civil war the wearing of beards became almost universal. The custom is on the decline again, and men of all pursuits and callings are beginning to appear smooth-shaven."—St. Louis Globe-Democrat.

Pleasantries.

Wind up a clock—it goes. Wind up a dance—it stops.—Hollo.

A clockmaker is the only one who can wind up his business affairs and have them continue to run.—Chicago Inter Ocean.

Irate German to stranger who has stepped on his toe: "Mine friend, I know mine feet was meant to be valked on, but dot brivilege belongs to me."

Whether tall men or short men are best, or bold men or modest and shy men, I can't say, but this I protest, all the fair are in favor of Hy-men.—Harvard Lampoon.

Resident Maine Town (proudly)—"No, sir; the words whisky and beer are unknown in this town." Drummer (in an anxious whisper)—"What do you ask for?"—Puck.

"People don't die very often over here, do they?" inquired the smart New Yorker. "No, only once," replied the Philadelphian. And there was an intense silence.—Philadelphia Record.

Robbie (at the museum)—Mamma, that little dwarf was never washed right, was he? Mamma—Why, dear? Robbie—Well, isn't that what made him shrink so awfully?—Chicago Tribune.

Freddie—"Ma, didn't the missionary say that the savages didn't wear any clothes?" Mother—"Yes, my boy." "Then why did pa put a button in the missionary box?"—Spare Moments.

The Janitor—Sorry I can't let you have the flat, ma'am, but we don't allow children. Mrs. Kidds—Oh, it's a quiet house; full of pianos, pugs and parrots, I presume!—Harper's Bazar.

Mr. Ague, of Alleghany, has eloped with the wife of William Stager. The bereaved husband finds consolation in the thought that Ague is likely to shake her before long.—New York Sun.

Doctor (feeling patient's pulse): "Do you eat well?" Patient: "I do." Doctor: "Do you sleep well?" Patient: "I do." Doctor: "Well, then, I will give you something to take away all that."—Harvard Lampoon.

Mother—You have drawn that donkey very nicely, Johnny, but you have forgotten one thing. Where is his tail? Johnny—Oh, that donkey doesn't need any tail. There are no flies on him.—Once a Week.

Prudence is one of the virtues that naturally go with age, but sometimes it is developed early. "Tommy," said a thoughtful mother, "your uncle William may be here to dinner to-day, and you must wash your face." "Yes, ma," said the thrifty Thomas; "but s'sposen' he don't come, what then?"

Lowell on Skepticism.

James Russell Lowell, some years ago in an after-dinner speech in London, referring to a sneerer at religion, said: "When the microscopic search of skepticism which has hunted the heavens and sounded the seas to disprove the existence of a Creator, has turned its attention to human society, and found a place on this planet where a man can live in decency, comfort and security, supporting and educating his children, unspoiled and unpolluted; a place where age is revered, infancy respected, womanhood honored and human life held in due regard, when skeptics can find a place ten miles square on the globe, where the gospel of Christ has not gone and cleared the way and laid the foundation, and made decency and security possible, it will then be in order for the skeptical *literati* to move thither and ventilate their views. But so long as these very men are dependent upon the religion they discard for every privilege they enjoy, they may as well hesitate a little longer before they seek to rob the Christian of his hope, and humanity of its faith in the Saviour, who alone has given men that hope of life eternal which makes life tolerable and society possible, and robs death of its terrors and the grave of its gloom."

Mother's Pies.

Advertising in the street railway cars has become a very flourishing business. In their anxiety to have something to attract attention, advertisers sometimes strike the popular fancy. A writer in the *Open Court* thus describes his feelings on reading one of these devices:

Whenever I take a ride in the dismal hearse that goes by the name of a street car, I am tantalized and tormented by an advertisement that glares at me from the panels just above the windows, proclaiming with reckless audacity that at a certain pie factory in Chicago they make "pies like your mother used to make;" the most impossible miracle that ever was attempted by any mortal woman or mortal man. Make me a pie, O pie-maker, like my mother used to make, and then draw on me for fifty thousand dollars. A quarter section of such a pie as that would roll backward off my shoulders more years than I care to tell. It would seat me again at the little wooden table at the old home radiant in the glory that only a mother's presence can give to any home; and as the song says, it would "make me a child again just for to-night." It is not in the power of human genius to make a pie "like your mother used to make." Take all the cooks in Queen Victoria's kitchen, and give them the finest flour and the freshest eggs, and the richest butter and milk, and rare fruits ripened in the sunshine, and spices from Arabia, and every delicious ingredient of a royal pie; then bribe them with a coronet apiece and a pension of two thousand pounds a year; and after all they will not be able to make "pies like your mother used to make." The feat is physiologically and psychologically impossible, because nobody but your own mother ever can or ever could give to the elements of a pie that ethereal flavor and that spiritual potency which makes it, for you at least, a memory of home forever. Unless all their ingredients are mixed with her love, touched by her own hands, and seasoned with her own spirit, there are no "pies like your mother used to make."

Pins, Twelve Dollars a Paper.

From an article headed "Hard Times in the Confederacy," in the *Century*, we quote the following: "In August, 1864, a private citizen's coat and vest, made of five yards of coarse homespun cloth, cost two hundred and thirty dollars exclusive of the price paid for the making. The trimmings consisted of old cravats, and for the cutting and putting together a country tailor charged fifty dollars. It is safe to say that the private citizen looked a veritable guy in his new suit, in spite of its heavy drain upon his pocket-book."

"In January, 1865, the material for a lady's dress which before the war would have cost ten dollars could not be bought for less than five hundred. The masculine mind is unequal to the task of guessing how great a sum might have been had for bonnets 'brought through the lines,' for, in spite of patient self-sacrifice and unfaltering devotion at the bedside of the wounded in the hospital, or in ministering to the needs of relatives and dependents at home, the Southern women of those days are credited with as keen an interest in the fashions as women everywhere in civilized lands are apt to be in times of peace. It was natural that they should be so interested, even though that interest could in the main not reach beyond theory. Without it they often would have had a charm the less and a pang the more. Any feminine garment in the shape of cloak or bonnet or dress which chanced to come from the North was readily awarded its meed of praise, and reproduced by sharp-eyed observers, so far as the scarcity of materials would admit."

Gems of Thought.

In every rank, both great and small, it is industry that supports us all.—Gay.

The truths a man carries about with him are his tools.—O. W. Holmes.

There never was an idea started that wakes up men out of their stupid indifference but its originator was spoken of as a crank.—O. W. Holmes.

The essence of knowledge is, having it, to apply it; not having it, to confess your ignorance.—Confucius.

The secret of success is constancy of purpose.—Disraeli.

When you make a mistake, don't look back at it long. Take the reason of the thing into your mind and then look forward. Mistakes are lessons of wisdom. The past cannot be changed. The future is yet in your power.—Hugh White.

That nation is useless that will not with pleasure venture all for its honor.—Schiller.

YOUNG FOLKS' COLUMN.

A Little Boy's Opinion of Don'ts.

I might have just the mostest fun
If 'twasn't for a word,
I think the very worstest one
'At ever I have heard.
I wish 'at it'd go away,
But I'm afraid it won't;
I s'pose 'at it'll always stay—
That awful word of "don't."

It's "don't make a bit of noise,"
And "don't go out of doors,"
And "don't you spread your stock of toys
About the parlor floor;"
And "don't you dare play in the dust;"
And "don't you tease the cat;"
And "don't you get your clothing mused;"
And "don't" do this or that.

It seems to me I've never found
A thing I'd like to do
But what there's some one close around
'At's got a "don't" or two.
And Sunday—"at's the day 'at "don't"
Is worst of all the seven
Oh, goodness! but I hope there won't
Be any "don'ts" in Heaven!

All in One Day.

NANNIE sat at the table in her high-chair, waiting for Mary Ann, who had gone down stairs after some more crackers. As she looked down into her cup of beautiful milk, she heard somebody talking in a sweet, pleasant voice that seemed to come from behind the screen.

"Nannie has been very good to-day," said the voice. "She kept her baby brother amused by telling him stories for twenty minutes."

"Yes," said another voice, which was somewhat sterner than the first. "But afterward she made him cry by taking away all his blocks and sitting on them."

As Nannie heard this, she looked down in her cup again, wondering who was talking. The voice certainly did not belong to Aunt Julia, or Mary Ann, or the cook, nor yet to her mother, although the sweet voice was something like hers.

"I know she was naughty then," said the first sweet voice; "but afterward she ran several errands for her mother, and never once said she was too tired."

At this Nannie smiled.

But the second voice continued, "That was something, really; but you must remember that, when she was through, she went out into the yard, and nearly scared the old hen into fits by chasing the little chickens."

"But the old hen scared her nearly as much when she flew at her, and made Nannie fall down and bump her head," said the sweet voice, which seemed very anxious to say whatever was possible in praise of the little girl; "and Nannie was very sorry, and won't do so any more."

"No, I won't," called Nannie, looking up. But the owners of the voices paid no attention to her; and the second voice went on. Nannie did not like this stern one, because it related all that she had done that was naughty; but she listened attentively to what was said.

"The old hen surely punished her enough," said the voice that was stern; "but she went crying to her mother, while it never would have happened had she behaved herself in the first place. Then at lunch she had to be sent away from the table because she cried for more cake than was good for her; and afterward she bothered her poor nurse to go walking in the hot sun."

"That is so," said the first voice with a sigh, while Nannie cried out:

"Was I all that naughty in one day?"

At that moment Mary Ann entered with the crackers, and Nannie finished her supper without saying anything. She was thinking over the naughty things she had done which had been recalled to her; and, when supper was over, she ran to her mother, and told her all about what she had heard.

Her mother took her up in her arms tenderly, and kissed her.

"It was probably your conscience that was speaking, little daughter," whispered mamma; "and you tried to think of all the things you did during the day. But there was one thing that you forgot all about. That was, when mamma and little brother were asleep, you kept as still as a mouse for one whole hour so as not to disturb them."

Nannie had forgotten all about this, but she raised her head and smiled when mamma spoke of it.

"I'm going to be real good to-morrow," she whispered, "so that only the sweet voice like yours will have something to say. I did not know how much could be done all in one day." Then, when Mary Ann came to put her to bed, she went without saying a word, and fell asleep, waiting to hear again from the sweet, loving voice. And the next day she remembered all about it, and did not tease her little brother nor bother the poor old mother hen, who didn't know anything about the voices, however, and ran out of the way as soon as she saw Nannie coming. All day long she remembered her promise; and, when supper time came, she was very happy, although she did not hear either of the voices again. But that was probably because Mary Ann was in the room all the time.—Harper's Young People.

DOMESTIC ECONOMY.

RYE DABS.—Two cups of rye meal, two cups of Indian meal, one cup of milk, one level teaspoonful of soda, one tablespoonful of molasses, a little salt. Take a little of the dough on the end of a large spoon and drop into boiling-hot fat, and fry like doughnuts.

PEACH PIE.—Line a pie plate with rich pastry and fill with peaches pared and cut in halves, and liberally sprinkled with sugar in proportion to the sweetness of the fruit. Chop three peach kernels fine and add to the pie. Sift over one tablespoonful of flour, or less, if the peaches are not juicy. Cover with an upper crust and bake.

A PLAIN GAME SAUCE.—Put into a small saucepan one tablespoonful of currant jelly, three tablespoonfuls of butter, one tablespoonful of wine, a teaspoonful of lemon juice, half a teaspoonful of black pepper, one-half teaspoonful of mixed mustard and one-half teaspoonful of salt. Let it come to a boil and pour over the game.

RICE BISCUIT.—Put one teacup of rice into saucepan with nearly one quart of cold water; let it boil till very soft. Pour it into a bowl, add one teaspoonful of salt, one-fourth of a pound of butter, one cup of sugar, one quart of milk, half a cup of good yeast, and flour enough to make a stiff batter. Let it rise over night and bake in gem pans or cups.

HOT SLAW.—Chop or slice very fine a firm white head of cabbage, and sprinkle lightly with salt and pepper. Put into a saucepan a piece of butter the size of an egg, and half a cup of weak vinegar; put these over the fire and heat. Mix together two raw eggs, a small cupful of cream and half a cup of sugar. Stir these slowly into the heated vinegar, add the cabbage, and cook till thoroughly scalded.

POTATO SOUP.—Six potatoes, one quart of milk, two teaspoonfuls of chopped onion, two stalks of celery, two teaspoonfuls of salt, a dash of cayenne, a tablespoonful of flour, and a quarter of a pound of butter. Boil, drain and mash the potatoes. Cook the onion and celery with the milk in double boiler. Add the boiling milk and seasoning to the mashed potatoes. Rub through a strainer and put on to boil again. Put the butter in a small saucepan, and when hot add the flour, and when well mixed stir into boiling soup. Let it boil five minutes; add one heaping tablespoonful of minced parsley and serve. A cup of whipped cream added after the soup is in the tureen is a great improvement.

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PATRONS OF HUSBANDRY.

Random Thoughts.

By A. P. ROACHE, W. M. S. G. of California.

Work and win was a maxim true,
But work and lose is the order new.

"The Day We Celebrate" is near at hand, and while it is well to set apart one day in the year to commemorate the heroic deeds of our forefathers and to renew our patriotic obligations, it should not be forgotten that while we are patriotic enough on great occasions, and in the face of imminent peril we are lacking in that every-day patriotism, the article which is unheralded by prancing steeds and marching columns, the kind which in the crowded city or remote homestead, in the home of the millionaire or the pioneer, feels the heart swell with admiration and love for our institutions and flag, which places truth, honor, country, as pearls of greatest price, and which demands that the affairs of this mightiest of nations shall be so conducted that the Tree of Liberty shall bear fruit for all its people, not a select few, and that American liberty shall be symbolic of all that is true in men, pure in women and exalted in country.

This is the kind of patriotism we need to inculcate; this is the kind the Grange is pledged especially to develop, and while all should heartily join hands in its extension, every Grange is expected to do all in its power to preserve and perpetuate those underlying principles on which our government is founded.

Bro. Messer informs us that "Partizan Politics" has almost ruined the Grange in Iowa. Yet there are many patrons smarting under wrongs they would see corrected, forgetting that partizanism and fraternity never make successful "sake-mates," who would steer the Grange ship into the dangerous whirlpool of partizan waters and have its life crushed out on the jagged rocks of dissension, selfishness and strife.

In the days of slavery and civil strife, many slaves protested against any attempt to change their condition, claiming they were satisfied as they were. A majority of farmers are making the same mistake as the "bondsmen," except that, while not claiming to be satisfied with their present condition, they neither do anything to change it, nor will they permit those who are trying, to do so; they frustrate the efforts of those who are earnestly and sincerely trying to secure the united, intelligent action of the agricultural classes on the live and let live principle, and with no thought of creating aggressive monopolies, or of injuring any legitimate class or calling.

When the soul is filled with dollars,
And the heart is filled with pride;
When envy, greed and avarice
Are harnessed side by side;
When the prancing steeds of arrogance
Are driven through the land,
And the poor and weak are trampled
In the dust on every hand—
Aye, 'tis time our best and truest,
With a heart "for any fate,"
Should bare the sword of justice
And stand censor at the gate,
On the ramparts of our freedom,
For the liberty of all,
To the rescue of our country
When her truth and honor call.

Merced Grange will celebrate Children's Day on the Fourth of July.

Pescadero Grange will make a fraternal visit to Watsonville Grange on the first Saturday in August. This is a move in the right direction. But then nothing that is not right ever comes from Pescadero. Let us hope that other granges may catch the fraternal spirit, and all take a swing around the mystic circle.

San Jose Grange.

At the meeting of the San Jose Grange, June 16th, the following preamble and resolutions were unanimously adopted:

WHEREAS, The insolvency and recent sale of the assets of the Nicaragua Maritime Canal Company emphasizes the necessity of immediate action on the part of Congress in acquiring the right and the construction of said canal as soon as money and labor will do it; and

Whereas, But a few years ago greenbacks saved the nation, while gold was seeking hiding-places, so will they strengthen the nation if used in the construction of the proposed canal. We are, therefore, opposed to issuing bonds to buy gold for the construction of the canal or for any other purposes; and

Whereas, We believe the construction of said canal, if possible by a private corporation, would be a public calamity, as it would ever after through the aid of trusts, combines, pools or some other iniquitous measure which could be resorted to under laws made for that purpose and now on the statute-books, fix the rates of freight and fares between the East and the West that would paralyze the nation and give the business of the country wholly over to corporate greed; therefore be it

Resolved, By the San Jose Grange, that owing to

the demoralized condition of the labor market, and recognizing the fact that tens, if not hundreds, of thousands of men throughout our broad land cannot get employment to save themselves and families from starvation, makes time an important factor, and we would therefore urge immediate action on the part of Congress in furnishing employment for 25,000 or 30,000 of the unemployed in the construction of the Nicaragua canal.

Resolved, That before sending any laborers to the line of the canal, the Government should cause to be erected or procure suitable buildings for hospital purposes, with medical supplies and doctors and nurses to care for the sick, should there be such.

Resolved, That the ownership and control of said canal would be equal as a defensive measure to any thirty ironclads ever built, and would forever put to rest the desire of foreign countries to interfere with the Monroe doctrine.

Resolved, That as a matter of justice to the workmen and women of the United States, Congress should immediately enact laws closing our ports for the next ten years to the immigration of European laboring men and women, making the law similar in character and effect as is the Chinese exclusion law.

Resolved, That our Senators and Representatives in Congress be requested to use all honorable means to have the foregoing suggestion enacted into law.

Resolved, That G. W. Worthen, G. W. Tarleton and Cyrus Jones are hereby appointed a committee to forward a copy of the above preamble and resolutions to each member of Congress from California.

These resolutions were ably discussed by several members and adopted without a dissenting vote.

An invitation from the Citizens' Fourth of July Committee asking the San Jose Grange to join in the procession and festivities of the occasion was received and accepted.

A NEW INDUSTRY.

Owing to the great abundance of cherries this year, and a lack of market for them for canning purposes, some members of San Jose Grange have been induced to convert them into cherry syrup with a view of making it an article of commerce. If this enterprise proves a success, it will not only furnish an outlet for a surplus of cherries, and those that become too ripe for shipping or canning purposes, but will put upon the market a choice delicacy that may be enjoyed by thousands who are out of reach of the luscious cherry.

It is hoped, Mr. Editor, that the granges throughout the State will adopt the foregoing resolutions, and as soon as that is done, cause copies to be sent to each member of Congress. If the 50 or 60 granges of the State should adopt them, and if all would send them to our Congressmen, it would have a hundredfold more influence than two or three or half a dozen granges would have. Try it, brothers. Don't be afraid to have your voices heard on any subject that affects your interests. AMOS ADAMS.

San Jose, June 17, 1894.

Tulare Grange.

Tulare Grange held its stated meeting in its hall on Saturday afternoon, the 16th. In the absence of Worthy Master Premo, Overseer Shoemaker opened the grange. Bro. Tuohy, of committee appointed at last meeting to confer with directors of Forty-third Agricultural District, and have an allowance made this grange, from State allowance of \$1500 to the Forty-third District, for the purpose of defraying expenses of Farmers' Institutes, reported. He had seen the president and one of the directors, who informed him that three meetings of the board of directors had been called and no quorum had been had; that the next meeting had been called for the 23d; that unless a quorum was then had they would resign as one of them. The president lived five miles from town, and Capt. Hayes, the other, lives twenty-two miles from town; both have missed no call, but will not continue to come unless assured of a quorum. The Forty-third District includes Kings and Tulare counties. It does seem, if the business of the members of the board will not permit them to attend, those of them who cannot do so would have consideration enough to resign and let persons whose residence is more convenient for attendance be appointed. Members of the Grange should take more interest in this.

Bro. Julius Forrer, of the U. S. Experimental Station, gave an account of "Australian salt bush." It comes from the coast of Australia. It is a prolific grower, will grow in the driest ground and strongest alkali, keeps green all the year round, is very salty and relished by stock; seed, of which it has great abundance, scarlet and soft, can be sown before vegetation starts in spring, grows readily on hard ground, should not be harrowed in. Plants can be transplanted like cabbage plants, four to six feet apart, and will spread rapidly and cover all the ground; mats readily, can be trimmed readily, does not grow from root like Johnson or Bermuda grass, and can readily be

got rid of by plowing or hoeing. On account of its salty nature it is a valuable plant in alfalfa pasture.

Bro. Zumwalt told of his experience in testing milk by Babcock tester to determine amount of butter fat in milk from cows on alfalfa pasture, and found it to be from two to four per cent; average less than four; from inquiries had concluded the lower per cent was from cows feeding on newly cut and newly irrigated alfalfa. Bro. Zumwalt also spoke of the depressed state of the butter and cheese markets, many large dairies now packing butter; of the tons of oleomargarine and "filled cheese" made at South San Francisco and other points in the State, such being made from grease, a little milk and colored to resemble butter and cheese; that such manufactured articles are put on the market and sold as dairy butter and cream cheese; that the consumer and dairyman are alike interested in suppressing the fraud; that those frauds greatly tend to the present depression in the market for cheese and butter; that the National Dairy-men's Union are now considering the suppression of the fraud and have a bill before Congress authorizing the States to legislate against the same, and not conflict with any national or interstate law; that the National Grange has heretofore had passed through Congress laws to regulate the sale and manufacture of oleomargarine and similar get-ups, and that the present law is supplementary. A committee of three was appointed to draw up resolutions in favor of the bill and report at the Grange meeting on the 21st of July.

An interesting exchange of views on fodder, principally sorghum and alfalfa, was had, and the Grange adjourned after an instructive and entertaining session. T.

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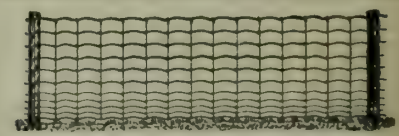
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Growth of the Telephone Business.

When the inventor of the telephone first made known his discovery eighteen years ago it probably did not enter into even his sanguine expectations that his scheme of conveying speech by electricity would have the success it has since reached. If it had been made known first in a European country it would have enjoyed a certain measure of prosperity, limited, however, by the conservative character of the people and the difficulty of adjusting the business and social life in an old country to a new and startling change. It would have caused a jog in the life of the people such as the breaking off of a sharp bluff causes in a landscape.

But that is not the American way. The distinguishing American trait is to grasp eagerly at any innovation that holds out the promise of saving time and money. The only questions asked are: Will it be useful and will it pay? The seventeen years' use of the telephone proves that both these inquiries have been answered affirmatively. In December, 1877, a year and a half after the patent was issued, there were 5,000 telephones in use. A year later there were 52,000, and from that time on the increase has been by great strides, until to-day there are nearly 600,000 telephones in daily use in this country. The exchange system has grown from 138 exchanges in 1880 to 1400 in 1893, but the increase of subscribers to the exchanges has been much greater, the number in the United States being estimated at 240,000.

The use of this time and labor-saving invention has been greater still. In 1884 the number of telephone conversations was estimated at 215,000,000, but last year the conversations were estimated at 650,000,000, or an increase of 200 per cent., the growth of the population of the country during the ten intervening years being about 20 per cent. probably. A comparison with the use of the telephone in European countries will show how much more rapid a useful invention is taken up in this country than abroad. In 1892 all of France had only 146 telephone exchanges and 20,000 subscribers, or less than half the number in New England. In all Great Britain there are 45,000 subscribers, or only one-fifth as many as in the United States. Germany has about 85,000 subscribers and Italy some 15,000. The total number of subscribers in all Europe is not more than 80 per cent of the number in the United States alone.

The financial success of the telephone has been as great as its adaptability to the wants of the public. The company that controls the telephone in this country was organized in 1880 with a capital of \$6,500,000, which had increased last year to \$20,000,000. The dividends paid during that time range from \$178,000 in 1880 and 1881 to \$3,337,500 in 1893, or a total of dividends in 14 years of \$23,106,560, and a yearly average of \$1,650,435. Such an enormous return from the creation of one man's mind rivals the glories of the achievements of Aladdin's Lamp. But while the American people are far ahead of the Europeans in the use of the telephone, the latter appear to have beaten us in cheapness. The annual rental of a telephone at a place of business in Philadelphia is \$140. In Boston the same service costs \$156 to \$180.

But in Switzerland, for instance, the use of a telephone can be had for \$16 a year. It is probable, however, that in this case the talker and the listener must go into the general stations and take their turn, instead of having a private instrument connected with a general exchange, an inconvenience that an American would not submit to. The expirations of patents, improved methods and the general cheapening of the whole process must in the near future reduce the cost of this useful service and bring it into more general use. How complicated the telephone system will then become can be estimated from the fact that on one switchboard in a single Boston station there are 400,000 connections.

—A large grain warehouse and elevator is to be built at North Seattle, Wash. The company is to be capitalized at \$300,000 to \$350,000.

There is more Catarrh in this section of the country than all other diseases put together, and until the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease, and prescribed local remedies, and by constantly failing to cure with local treatment, pronounced it incurable. Science has proven catarrh to be a constitutional disease and therefore requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, Ohio, is the only constitutional cure on the market. It is taken internally in doses from 10 drops to a teaspoonful. It acts directly on the blood and mucous surfaces of the system. They offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address F. J. CHENEY & CO., Toledo, O.

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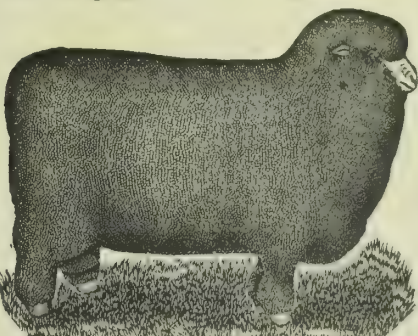
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CALIFORNIA.

Butte.

Those who are experimenting with methods of preserving olives will be interested in the experience of Mr. W. W. Gillett of Butte county, as reported in the *Oroville Register*: He placed the olives in lye, but took them out a number of times and placed them in cold water to test the berries. As soon as he saw that he had them in the lye long enough to remove the bitterness, he placed them in fresh water and then in a weak solution of brine. This brine he gradually increased in strength, or rather made three brines, each one being stronger than the other. He retained them in the strong brine, but freshes them in water before using them on the table. The berries were perfectly ripe ere he pickled them. He says they are keeping finely. He found by trial that the small berries required less lye than the large ones, and this season he will make three grades of the berries before placing them in the lye at all.

Fresno.

Frank J. Burleigh is going to put the project of a warehouse for the special use of raisin-growers to a practical test. His building will be 150x60 feet, and it will have every convenience. Its capacity will be about 100,000 50-pound boxes.

Fresno telegram, June 18th: At the meeting of the raisin-growers to-day the plan was accepted which had been prepared by the committee of packers and growers appointed last week. The executive branch of the compact is vested in a board of eight directors, four elected by the growers and four by the packers. This board of directors will appoint a general inspector, whose duty it will be to visit all packing-houses and see that the raisins are properly packed and branded. He may appoint deputies to assist him. He must give a bond of \$10,000 and will be responsible for the actions of his deputies. This is expected to do away with the trick of putting a good brand on inferior raisins. The expense of carrying on this work will be borne by each grower and each packer in proportion to the amount of raisins grown or packed. The grower will pay 14 cents per ton and the packers seven cents. Where the grower packs his own crop he will pay two cents per ton. Better times in the raisin industry are confidently looked for. The plan adopted provides that the packing of second-grade layers be discontinued. Other grades will be "Four Crown Fancy Clusters," "Five Crown Dehesa Clusters," and "Six Crown Imperial Clusters," and each box will be marked with its proper number of crowns. There will be four standard grades of loose raisins, four-crown loose, three-crown loose and two-crown loose and seedless Muscatels. All damaged raisins, or raisins not sufficiently good to be classed in the above grades will be mixed together and branded "Loose Muscatels." All raisins will be packed in boxes, no box to exceed 50 pounds, net weight. No loose raisins, except four-crown, will be packed in 20-pound boxes. The grading will be done by each packing firm, subject to inspection and approval by graders appointed by the executive committee, and when approved, the official stamp will be placed on each box. All raisins will be sold at shipping points f. o. b. No consignment will be made by any shipper or packer. No packer or seller of raisins will be allowed to sell to agents or brokers. No packer or seller may forward goods to an agent or broker until he is in receipt of the name of the actual buyer. All packers' and sellers' books will always be open to inspection by the executive committee, in order to obtain the names of the actual buyers on each and every shipment, but not for publication.

Humboldt.

A new creamery (the second) has just been started on the Arcata bottom. The new plant is owned by the same company and operated by the same management as the Arcata creamery. The building is larger, being 34x68 with an L. 26x25. The new plant is a superior structure to the other creamery, both in machinery and fixtures. The floors of the churn and butter rooms are concrete. The drainage is complete, being carried to the Daniels slough through a V-shaped sewer. The hog pen is located 2000 feet from the plant on the same slough, the milk being forced to the pens through a 1½-inch pipe by a steam pump. The engine rests on a concrete foundation, and the entire machinery works smoothly and to the satisfaction of the builders and stockholders.

Kern.

Bakersfield *Californian*: Over on the north side of the river Mr. Camidge has an apricot orchard that the owner feels disposed to enter for a premium. It is only three years old, yet the present crop will average 125 pounds to each tree, some running as high as 150 pounds. This crop has been sold on the tree for one cent and a half per pound. There are 100 trees to the acre; hence the crop will bring the owner the very tidy sum of \$187.50, of which at least \$150 will be net profit. It must not be inferred from this that every apricot orchard will show like results or that as good prices will be obtained, nor that an orchard of 1000 trees would do as well.

The Bakersfield *Californian* estimates the grain acreage of the county as follows: Planted on irrigated valley lands—wheat 39,150 acres, barley 6720 acres, oats 840 acres. Sown on unirrigated valley lands—14,000 acres of wheat, nearly all of which will yield no return whatever, the season having been so disastrous. Planted in the unirrigated mountain valleys and smooth hills—wheat 32,000 acres, barley 30,000 acres. This will all yield well either in grain or hay. This makes a total productive acreage of 71,150 acres of wheat, 36,720 acres of barley and 840 acres of oats, or 108,710 acres altogether. Kern county can lay claim to being considered a grain country, and in addition there are likely to be from 18,000 to 20,000 acres of Egyptian corn, and much more would be planted were it not for the prospects of a low river.

Los Angeles.

The Los Angeles *Times* of the 16th inst. thus sums up current conditions in the matters of weather and fruit: "There has been no notable change in the condition of the weather during the past week.

The weather bureau reports that generally fair weather prevailed with cool, cloudy nights and mornings and clear days. The abnormal range in temperature continues, the departures from the seasonal averages showed a deficiency averaging 5 deg. daily at Los Angeles and 8 deg. at San Diego. The rains of the latter part of the previous week, with the cool, cloudy mornings of this week, were of material benefit to summer crops and standing hay, but were to some extent damaging to cut hay. Fruit crops are ripening slowly owing to the cool weather. Favorable reports of the fruit crop continue. Apricots are ripening and other crops advancing rapidly. In the Cabuenga valley a number of lemon trees are being set out. A few blackberries are coming in from the neighborhood of Los Angeles. Peach trees are very heavily loaded and in some cases have already had to be propped up. Fruit would mature more rapidly were it not for the cool nights."

There is much talk at Pomona of bonding the county for the making of good pike roads.

Pomona letter: The olive crop, so every one who has any bearing olive trees says, is going to be the largest in Pomona ever known. The trees north of town will have an enormous yield, and, at the prices that were freely had here for pickled olives all the past winter, there will be \$300 and \$350 an acre profit for a number of orchardists. The Packard olive trees this season are a sight for any horticulturist to behold.

Orange.

The Santa Ana *Blade* reports that the movement to organize the deciduous fruit growers of the county to market the crop is proceeding steadily. It is estimated that the Co-operative exchange just formed will control from 100 to 150 tons of dried fruit, not including raisins. The methods of the Santa Clara Fruit Exchange will be followed.

Placer.

In the English Colony at Penryn arrangements are being made for conducting what will be called the "Placer County Horticultural Training College." It is intended to supercede what is known as the "pupil system."

Riverside.

At a recent meeting of orange-growers at Riverside, Mr. H. K. Pratt, Eastern agent for the Citrus Exchange, gave an address, from which we quote a report in the Los Angeles *Times*: Last year there were hundreds of cars of good seedlings that could not be shipped from Los Angeles county. This year the seedlings netted the growers 60 cents. The best fruit-buyers of the East want to see the Exchange continued, for their own interests are better protected than through the commission methods under which work was done before. The experience of the past year has shown that the growing of oranges, a comparative luxury, has returned more to the grower than have such necessities as wheat, cotton, etc. The experience of the past year has placed the Fruit Exchange in the lead as the best fruit-shipping organization extant. The experience of the year has shown that better returns can be obtained through the Exchange than through commission men. Even the first year, with the commission men established and fighting the Exchange, and everything against the successful handling of fruit, as good returns were made as the commission men gave, and in the matter of packing alone enough was saved to pay the balance of the cost of marketing. With the small expense incurred by the Exchange, the cost of laying down fruit at any point is easily learned, and the stability of the business is insured. The fruit-jobbers look upon the Exchanges with favor, and believe their interests will be better protected where the Exchange is dealt with, and will pay better another year. The solution of the difficulty in handling the orange crop is looked for through the Southern California Exchange, and the success of this means the prosperity of California, which is looked upon as the orange-growing region of the world. It behooves all the growers to hold together, or all will go down. Without the Exchange it will be impossible to sell oranges f. o. b. It is suicidal to attempt to continue in the consignment line, and selfish in the extreme. The growers should recognize and appreciate the good work done by the leaders and officers in the Exchange movement, the men having been most unselfish and untiring in their work, which has not been for the direct money advantage, but to save the industry from destruction. It will be necessary to extend the scope of the Exchange, to include lemons and deciduous fruits. The northern Fruit Exchange will unite with the southern, and, all sections working harmoniously, there will be no need of fear for the orange industry.

San Bernardino.

The Redlands *Citrograph* notes with approval a new plan of shipping fresh apricots by the Santa Fe Bulk Express Co.'s cars. We quote: This is a new variety of car. The fruit is packed in 10 pound baskets, which are placed in single rows in trays belonging to the cars. The trays are long enough for each end to set in a groove on the side of the car, and have sufficient spring to prevent jarring the fruit. These cars are provided with refrigerator tanks and have a capacity of 12 tons each. Their great advantage is that it is not necessary to pack the fruit baskets in crates as has been the custom in the past, and the fruit can be sold in the East at a discount of more than 25 per cent from the old-method prices and still net as much to the grower. The cars are also adapted to shipping oranges in bulk and promise to come into general service.

San Luis Obispo.

Arroyo Grande *Herald*: One of the prettiest places to visit around Arroyo Grande just at present is the Austin ranch, where the McClure Seed Company is conducting a new industry for this section of the country. There are acres of several varieties of vegetables now maturing a crop of seeds. But the chief attraction just now is the acres of sweet peas that are in bloom. The visitor can hardly withstand the intoxication of the sweet perfume that pervades the atmosphere.

Sutter.

The Yuba City *Farmer* reports that the cannery at that place will soon start up, adding: Reports from the orchards show that the fruit will be of extra quality this year, and the quantity above the aver-

age. The cannery will put up mostly extra fruit, the best grade being used. The apricot crop is heavy this season, and a good run will probably be had before the peach season begins. Peaches, plums, pears, etc., all of which will be plentiful and of splendid quality, will follow.

J. B. Wilkie, whose fine fruit drier burned down some months ago, is replacing with a new and better one. This time he is building with brick.

Tulare.

Tulare *Register*: E. L. Cloer finds that, with the aid of a small reservoir and a windmill able to propel a four-inch pump, he is able to irrigate an acre and a quarter to perfection, and the result is that he is able to supply the home table with fruit in infinite variety and in the greatest abundance, with a surplus to spare. He is so well satisfied with what has been accomplished in this line that next year he proposes to put up a bigger windmill, put in a bigger pump, and build a bigger reservoir with which to sustain two acres of alfalfa. With this addition to the "home acre," a revenue will be derived that will go far toward liquidating the grocery bills. It must be remembered that Mr. Cloer is a wheat-grower on land far from any ditch system, and a fruit-grower, too, who has made the business pay.

Ventura.

John Miners has at his place near Nordhoff a walnut tree only three years old which is loaded with walnuts.

Yolo.

A writer for the Woodland *Democrat*, speaking of the Capay valley, says: "Six years ago this valley from end to end was a vast grain field, yielding excellent crops, with here and there a few fruit trees, just sufficient to supply the farmers, who were few and far between, with fruit for home consumption. But the railroad came in. The settlers realized they had excellent fruit land, and, having facilities for transportation, they cut up their immense grain fields, sold them for fruit farms, and then changed the appearance of the valley. Where one man lived with his family, 'monarch of all he surveyed,' are now found from ten to twenty families. These people, many of them from Eastern States, are progressive, and the result is seen in the greatly improved appearance of Capay valley."

Cacheville letter: I do know what constitutes an ordinary day's labor on a hay press, but I heard some old hands at the business express surprise when they learned that the crew on Tom Pierce's hay baler baled in thirteen hours forty tons of wheat hay on Geo. Hoppin's farm.

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S. F. MARKET REPORT

Market Review.

SAN FRANCISCO, June 20, 1894.

While shipping business in wheat continues very light, there is a distinctly better tone to the market and some slight strengthening in prices. The outlook is considered more promising, as advices from England report a better condition of affairs in that direction. An outlet is badly wanted, as new crop will soon be coming forward in liberal quantities. Both shippers and growers are anxiously awaiting a resumption of export operations. No. 1 shipping wheat is quoted at 90¢@92½¢. Milling grades are quotable at 95¢ to \$1.05 per cwt.

Barley.

The market is soft and the outlook does not look very flattering for the selling interest. New crop is being sent in, being more or less of a disturbing element, as there is disposition to realize sooner than place stock in warehouse. Under such circumstances the market necessarily shows weakness. Feed, 85 to 87½¢ for fair to good and 88½¢ to 90¢ per cwt. for choice; Brewing, \$1.05 per cwt.

Dried Fruits.

Values nominal, trade being at a standstill. In former years, at this season, many Eastern buyers would be making contracts for Apricots and Peaches for future delivery, but this year they seem to prefer waiting until the stock is available before trading. We quote as follows: Apples, 6¢@6½¢ for quartered, 6½¢@7¢ for sliced and 9¢@11¢ for evaporated; Peaches, 6¢@8¢ per pound for bleached halves and 2¢@4¢ for quarters; bleached Peaches, 10¢@11½¢; sun-dried Peaches, 7¢@8¢; Apricots, nominal; Prunes, 5¢@5½¢ for the four sizes, —c for the five sizes and 3½¢@4¢ for small; Plums, 4¢@5¢ for pitted and 1½¢ for unpitted; Figs, 3¢@4¢ for pressed and 1½¢@2¢ unpressed; White Nectarines, —@—; Red Nectarines, —@— ½ lb.

Raisins.

Demand very light. We quote. California Layers, 60¢@\$1; loose Muscatels, in boxes, 50¢@75¢; clusters, \$1.25@1.50; No. 1 loose, in sacks, 2½¢@3¢ ½ lb; No. 2, 2½¢@2½¢; dried Grapes 1½¢@1½¢ ½ lb.

General Produce Market.

OATS—Are flat, there being comparatively no inquiry. Prices are undisturbed, but buyers can likely obtain concessions. We quote: Milling, \$1.20@1.30; Surprise, \$1.35@1.40; fancy feed, \$1.27½@1.30; good to choice, \$1.15@1.25; poor to fair, \$1@1.10.

CORN—Stocks are working down and prices are steady. Quotable at \$1.17½@1.25 per cwt for Large Yellow, \$1.32½@1.35 for Small Yellow and \$1.35@1.37½ for White.

CRACKED CORN—Quotable at \$27.50@28.50 per ton.

CORNMEAL—Millers quote feed at \$27@28 per ton; fine kinds for the table, in large and small packages, 2½¢@3½¢ per pound.

OILCAKE MEAL—Quotable at \$35 per ton from the mill.

COTTONSEED OILCAKE—Quotable at \$30 per ton.

SEEDS—We quote: Mustard, brown, \$2@2.25; Yellow, \$3@3.25; Tiesse, \$2.50@2.75; Canary, 3¢@4¢; Hemp, 3½¢@4½¢ ½ lb; Rape, 2¢@2½¢; Timothy, 6½¢ per lb; Alfalfa, 10¢@11½¢; Flax, \$3@3.25 per cwt.

MIDDINGS—Quotable at \$19@20 per ton. MILLSTUFFS—We quote: Rye Flour, 3½¢; Rye Meal, 3¢; Graham Flour, 3¢; Oatmeal, 4½¢; Oat Groats, 5¢; Cracked Wheat, 3½¢; Buckwheat Flour, 5¢@5½¢; Pearl Barley, 4½¢@4½¢ per lb; Normal Nutrient, \$3 per case of 1 dozen cans; Breakfast Delight, \$3.25 per case of 2 dozen packages.

BRAN—Good demand, with firm prices. Quotable at \$16.50@17.50 per ton.

FEED—Manhattan Horse Food (Red Ball Brand) in 100-lb cabinets, \$8. Manhattan Egg Food, 100-lb bags, \$11.50.

HAY—Desirable qualities sell at good prices. New Wheat sells at a range of \$9@13; new Wild Oat, \$9@12 per ton. Wire-bound Hay sells at \$1 per ton less than rope-bound hay. Following are the wholesale city prices for rope-bound hay: Wheat, \$12@15; Wheat and Oat, \$11@14; Wild Oat, \$12@14; Alfalfa, \$9@11.50; Barley, \$11@13; Compressed, \$11.50@14.50; Stock, \$8@10 per ton.

STRAW—Quotable at 70¢@80¢ per bale.

HOPS—Dull and nominal at 11¢@13¢ per lb. Thomas' Produce Report says: "The growing crop is looking very well and it is now predicted that the coast will raise 20 per cent more Hops than last year. It is the general opinion that prices will not be high unless some accident happens to the crop elsewhere. There are already reports of vermin in England, with some growers now washing, but nothing of an alarming nature as yet."

RYE—New crop is not very far off and there is desire to get rid of old stock as soon as possible. As a consequence, buyers have the situation in their favor. Quotable at \$1@1.05 per cwt.

BUCKWHEAT—Quotable at \$1.10@1.20 per cwt. GROUND BARLEY—Quotable at \$21.00@21.50 per ton.

POTATOES—The general selling range for new Early Rose and Peerless is 25¢@75¢ per cwt in sacks and boxes.

ONIONS—Quotable at 25¢@35¢ per cwt for Reds, and 50¢@60¢ for White.

DRIED PEAS—We quote: Green, \$1.50@1.75; Blackeye, \$1.60@1.65; Niles, \$1.50@1.75 per cwt.

BEANS—Fair demand for most kinds. We quote as follows: Bayos, \$2.30@2.45; Butter, \$1.90@2.00 for small and \$2@2.20 for large; Pink, \$1.75@1.85; Red, \$2.30@2.50; Lima, \$3.25@3.40; Pea, \$2.50@2.75; Small White, \$2.40@2.60; Large White, \$2.50@2.60 per cwt.

VEGETABLES—Business keeps fairly active. Receipts are liberal and buyers still have the advantage. We quote: Egg Plant, —@— per lb.; Cucumbers, 50¢@75¢ for Vacaville and \$1.25@1.50 per box for bay; Asparagus, 40¢@\$1 per box for the ordinary run and \$1.25@\$2 per box for choicer quality; Rhubarb, 30¢@40¢ per box; Garden Peas, 2¢@4¢ ½ lb.; Summer Squash, 20¢@35¢ per box for Vacaville and 75¢@\$1 per box for

bay; String Beans, 1¢@2¢ ½ lb; Refugee Beans, 2¢@3¢ ½ lb.; Wax Beans, 1¢@2¢ ½ lb.; Green Corn, 12¢@18¢ doz; Marrowfat Squash, —@— ton; Hubbard Squash, —@— per ton; Green Peppers, 8¢@10¢ ½ lb; Tomatoes, 75¢@1.25 per box; Turnips, 75¢ per cwt; Beets, 75¢ per sack; Parsnips, \$1.25 per cwt; Carrots, 35¢@40¢; Cabbage, 60¢@75¢; Garlic, 2½¢@3¢ ½ lb; Cauliflower, 60¢@70¢ dozen; Dry Peppers, 17¢@20¢ ½ lb; Dry Okra, —@— ½ lb.

FRESH FRUIT—Receipts are large and prices are weak, as a rule. Business yesterday was lively on account of a shipping demand, the market being considerably relieved by such trade. Apricots are a drug, and much poor stock has been dumped this week. Offerings of Peaches comprise a large quantity of poor goods. Currants still sell at a wide range. Canners are taking some cherries now, but their wants are not large and the market is still more or less burdened with surplus of this particular variety. We quote: Peaches, 15¢@40¢ per box; Figs, — per lb.; Cherries, white, 10¢@25¢; do, loose, 1¢@1½¢ per lb; Royal Ann, 25¢@50¢ per drawer and 2¢@2½¢ ½ lb for loose; black, 15¢@30¢ per box; do, loose, 1¢@2¢ ½ lb; Apricots, Royal, 20¢@40¢ per box; Currants, \$1.50@3.50 per chest; Cherry Plums, 15¢@30¢ per drawer; Apples, 50¢@\$1 per box; Pears, 25¢@50¢ per box.

BERRIES—There is good representation of the several varieties. We quote as follows: Raspberries, 65¢@85¢ per crate and \$5@7 per chest; Strawberries, \$3.50@6 per chest for Sharpless and \$8@10 for Longworths; Blackberries, \$4@6 per chest; Gooseberries, 1¢@2¢ for common, and 3 to 4¢ per lb for the English variety.

CITRUS FRUIT—Fair inquiry for Limes and Lemons. The demand for Oranges is small, most offerings being poor. We quote: Mediterranean Sweet Oranges, \$1.25@1.75; Seedlings, 75¢@\$1.25; Mexican Limes, \$3@3.50 per box; Lemons, Sicily, \$4@5; California Lemons, 50¢@1.25 for common and \$1.50@2.25 for good to choice; Bananas, \$1.50@2.50 per bunch; Pineapples, \$2.50@4 per dozen.

NUTS—Chestnuts, 6¢@8¢ ½ lb; Walnuts, 6¢@7½¢ for hard shell, 8¢@9¢ for soft shell; 8¢@9¢ for paper shell; California Almonds, 10¢@11¢ for soft shell, 6¢@7¢ for hard shell and 11½¢@12½¢ for paper shell; Peanuts, 3¢@4¢; Hickory Nuts, 5¢@6¢; Filberts, 10¢@10½¢; Pecans, 5¢@8¢ for rough and 8¢@10¢ for polished; Brazil Nuts, 8¢@9¢; Coconuts, \$5@5.50 per 100.

HONEY—Receipts are light, with prices unchanged, though steady. Business, however, is quite dull, there being a breach between buyers and sellers in regard to prices. The crop this year will be more or less a failure. We quote as follows: Comb, 10¢@11½¢ ½ lb for bright and 9¢@10¢ for dark to light amber; water white extracted, 6½¢@7¢; amber extracted, 5½¢@6¢; dark, 4½¢@5½¢ ½ lb.

BEESWAX—Quotable at 24¢@25¢ ½ lb.

BUTTER—There has been no marked change in the situation for a week. Receipts have been ample for all trade wants, while prices have kept steady and uniform. Fancy Creamery, 16½¢@17¢; fancy dairy, 15¢@16¢; good to choice, 13¢@14¢; store lots, 11¢@12½¢; pickled roll, new, 19¢@20¢ ½ lb.

CHEESE—Stocks are large, while the demand is slow, so that prices remain easy. We quote: Choice to fancy, 8¢@9¢; fair to good, 6½¢@7½¢; Eastern, ordinary to fine, 14¢@15¢ ½ lb.

EGGS—Offerings are in excess of market wants, and quotations therefore lack firmness. We quote: California ranch, 14¢@16¢; store lots, 11¢@13¢; Eastern, 12¢@13½¢ per dozen.

POULTRY—The market is again crowded with supplies, and prices are once more on the down grade. We quote: Live Turkeys—Gobblers, 10¢@12¢; Hens, 10¢@12¢; Roosters, \$4.50@5 for old and \$5@8 for young; Broilers, \$1.50@2.50 for small and \$3.50@4 for large; Fryers, \$5@6; Hens, \$4.00@5.50; Ducks, \$3 for old and \$4@5 for young; Geese, \$1 for old and \$1@1.25 per pair for young; Pigeons, \$1.25@1.50 for young and \$1.50@1.75 per dozen for old.

GAME—Nominal.

PROVISIONS—We quote as follows: Eastern Sugar-cured Hams, 13¢; California Hams, 11½¢@12¢; Bacon, Eastern, extra light, sugar-cured, 14¢@15¢; medium, 10¢; do, light, 10½¢; do, light, boneless, 12¢; light, medium, boneless, 10½¢@11¢; Pork, extra clear, bbls, \$20; hf bbls, \$10.50; clear, bbls, \$19; hf bbls, \$10; boneless Pig Pork, bbls, \$21.50; hf bbls, \$11; Pigs' Feet, hf bbls, \$4.75; Beef, mess, bbls, \$7.50@8; do, extra mess, bbls, \$8.50@9; do family, \$9.50@10; extra do, \$11@11.50 per bbl; do, smoked, 10¢; Pickled Tongues, hf bbls, \$8; Eastern lard, tierces, 7½¢@8¢; do prime steam, 10¢; Eastern pure, 10-lb pails, 10½¢; 5-lb pails, 10½¢; 3-lb pails, 10½¢; California, 10-lb tins, 9¢; do, 5-lb, 9½¢; do, kegs, 10½¢; do, 20-lb buckets, 10¢; compound, 7½¢ for tierces.

WOOL—The market remains in quite condition, without any change in prices. The weekly report of Thomas Denigan, Son & Co. says: "This is a waiting market and it is so both at the East and in the West. The sales at Ukiah and Cloverdale were poorly attended. The Wool sold at 9¢@11¢ ½ lb, and were considered dear, though in former years they averaged never less than 18¢ and often as high as 22¢@23¢ for spring clip. Scourers are getting no orders and therefore little is doing with them, while shippers decline to buy at any price in our local market, until such time as they can see an opening for their purchases." We quote spring: Year's fleece, ½ lb., 5¢@7¢; Six to eight months, San Joaquin, poor, 5¢@6¢; do fair, 6¢@8¢; Oregon and Washington: Heavy and dirty, 6¢@7¢; good to choice, 8¢@10¢; valley, 10¢@13¢. Nevada: Heavy, 6¢@8¢; choice light, 9¢@10¢. We quote fall: Northern defective, 5¢@6¢; Southern and San Joaquin, 3¢@4¢.

HIDES AND SKINS—Quotable as follows:

	Sound.	Culls.
Heavy Steers, 54 lbs up, ½ lb.	4½¢@4¾¢	3¾¢@4¢
Medium Steers, 48 to 56 lbs.	3¾¢@3½¢	3¢@3½¢
Light, 42 to 47 lbs.	3¢@3½¢	2¢@2½¢
Cows, over 50 lbs.	3¢@3½¢	2¢@2½¢
Light Cows, 30 to 50 lbs.	3¢@3½¢	2½¢@3¢
Stags.	3¢@3½¢	2¢@2½¢
Kips, 17 to 30 lbs.	4¢@4½¢	3¢@3½¢
Veal Skins, 10 to 17 lbs.	5¢@5½¢	4¢@4½¢
Calf Skins, 5 to 10 lbs.	7¢@7½¢	6¢@6½¢

Dry Hides, usual selection, 6½¢; Dry Kips, 6½¢; Calf Skins, do, 6½¢; Cull Hides, Kip and Calf, 4¢; Pelts, Shearling, 10¢@20¢ each; do, short, 25¢@35¢ each; do, medium, 40¢@50¢ each; do, long

wool, 50¢@75¢ each; Deer Skins, summer, 25¢; do, good medium, 15¢@20¢; do, winter, 5¢ per lb; Goat Skins, 25¢@40¢ apiece for prime to perfect, 10¢@20¢ for damaged, and 5¢@10¢ each for Kids.

San Francisco Meat Market.

Beef steady, especially prime stock. Mutton and Lamb are both plentiful and cheap. Following are the rates for whole carcasses from slaughterers to dealers:

BEEF—First quality, 5½¢; second quality, 4¢@5¢; third quality, 3½¢@4¢ ½ lb.
CALVES—Quotable at 4¢@6¢ ½ lb.
MUTTON—Quotable at 5¢@6¢ ½ lb.
LAMB—Spring, 6¢@7¢ ½ lb.
PORK—Live Hogs, on foot, grain fed, heavy and medium, 4½¢; small Hogs, 4½¢; stock Hogs, 3½¢@4¢; dressed Hogs, 6½¢@7½¢ ½ lb.

DIVIDEND NOTICE.

SAN FRANCISCO SAVINGS UNION,
532 California St., Corner of Webb.

For the half year ending with the 30th of June, 1894, a dividend has been declared at the rate of four and eight-tenths (4 8/10) per cent per annum on Term deposits, and four (4) per cent per annum on Ordinary deposits, free of taxes, payable on and after MONDAY, the 2d of July, 1894.
LOVELL WHITE, Cashier.

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Now that the interest in the culture of the orange is extending so as to embrace nearly all parts of the State, a book giving the results of experience in parts of the State where the growth of the fruit has been longest pursued will be found of wide usefulness.

"Orange Culture in California" was written by Thos. A. Garey of Los Angeles, after many years of practical experience and observation in the growth of the fruit. It is a well-printed hand-book of 227 pages, and treats of nursery practice, planting of orange orchards, cultivation and irrigation, pruning, estimates of cost of plantations, best varieties, etc.

The book is sent post-paid at the reduced price of 75 cents per copy, in cloth binding. Address DEWEY PUBLISHING CO., Publishers, 220 Market St., San Francisco.

The Raisin Industry.

A PRACTICAL TREATISE ON THE RAISIN GRAPES, their History, Culture and Curing. By Gustav Eisen. This is the Standard Work on the Raisin Industry in California. It has been approved by Prof. Hilgard, Prof. Wickson, Mr. Chas. A. Wetmore and a multitude of practical raisin-growers. Sold by the DEWEY PUBLISHING CO., or its Agents at the uniform price of \$3, postage prepaid. Orders should be addressed:

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Scientific Press



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ESTABLISHED 1863.

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Patents Issued to Pacific Coast Inventors.

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FOR WEEK ENDING JUNE 6, 1894.

521,072.—WATER CLOSET FULL—E. D. Andrus, Seattle, Wash.
520,877.—SULKY BRAKE—Clawson & McKerron, S. F.
521,106.—SLUICE VALVE—W. A. Doble, S. F.
520,964.—MUTUAL PACKING—G. H. Ensign, Kekaha, H. I.
521,141.—FRUIT CARRIER—T. S. Fitch, S. F.
520,880.—TUB—Gwynn & Spencer, Napa, Cal.
520,987.—BILLIARD COUNTER—W. S. Hannaford, Pasadena, Cal.
520,782.—ELECTRIC MOTOR—A. Himmann, Olympia, Wash.
520,928.—CAR COUPLING—Geo. Ker, Portland, Or.
520,982.—PLOW—H. B. Martin, Chino, Cal.
520,934.—SULKY PLOW AXLE—W. B. Morris, Collinsville, Cal.
520,858.—MOTOR—E. I. Nichols, S. F.
520,829.—DIRT CLEANER—C. Palmleaf, Seattle, Wash.
520,939.—CONCENTRATOR—A. H. Rapp, S. F.
521,059.—CLUTCH—T. J. Thorp, Forest Grove, Or.
23,385.—SCALES BRAM DESIGN—W. E. Withrow, Los Angeles, Cal.

NOTE.—Copies of U. S. and Foreign patents furnished by Dewey & Co. in the shortest time possible (by mail or telegraphic order). American and Foreign patents obtained, and general patent business for Pacific Coast inventors transacted with perfect security, at reasonable rates, and in the shortest possible time.

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Coast Industrial Notes.

—The Canadian Pacific will build a new steel bridge over the Columbia River at Revelstoke, B. C., this summer.

—From five to ten dollars a day were the recent ruling wages for fighting the flood and saving property in Portland, Or.

—British Columbia mill men are buying logs in Washington and towing them to their mills. Just a year ago precisely the opposite condition of affairs existed.

—Dodge, Sweeney & Co. have bought the Alaska Packers' Association's salmon pack of '94 in barrels and half barrels at \$6 for barrels and \$3.50 for halves. This is \$2 lower than '93.

—The twenty-second payment to the Union Iron Works on account of the construction of the Oregon, amounting to \$96,684, has been deferred until the naval appropriation bill passes, as there are no funds available for this purpose.

—R. B. Langdon & Co. of Minneapolis have secured a \$2,000,000 canal contract in Arizona. The country to be irrigated is 400,000 acres, mostly in Maricopa county, and the water to be obtained is from the Rio Verde. The canal will start above Phoenix and be 100 miles long.

—Work on the new reservoir for the Paso Robles Water Company has commenced. It is to be built east of town in the Callender tract. The capacity will be 1,200,000 gallons and the cost \$6000. New ditches are to be dug, new pipes laid and new mains put in, and the whole cost is estimated at \$15,000.

—The annual statement of the Pacific Mail Steamship Company for the year ended April 30 shows a balance of receipts over expenses of \$475,461. There was a deficit last year of \$56,740. The statement is reiterated in some quarters that the company is in financial stress and about to pass into the hands of a receiver.

—Talking of the much-discussed San Joaquin Valley Railroad, Traffic Manager Leeds says: "I have found no difficulty in interesting people in behalf of a scheme appeals to the financial interests of all. The cost of the road will not be over \$10,000 a mile. The matter is being considered daily in the executive committee of the association, but no steps have been taken so far to incorporate a company. This will be done shortly."

—Plans are being perfected for the reclamation by the State of nearly 1,000,000 acres of swamp and overflow lands on the Sacramento, Feather, and San Joaquin rivers and their tributaries. Nearly \$15,000,000 has heretofore been almost wholly wasted in a similar effort. The plan in general will be to utilize the waterflow for dredging and create a system of reservoirs. The matter will be embodied in an engineer's report to the Legislature.

—The Pacific Steam Whaling Company's steamer Jennie has started for Herschel Island, in the Arctic Ocean, with a cargo of supplies for relief stations that have been established for distressed whalers and sealers and stores for the crews of the whalers that will go into winter quarters at Herschel Island when the ice begins to pack. Among the cargo are 150 cases of coal oil, 700 tons of coal, 530 barrels of beef, pork, fish, etc., 837 cases of canned meat, fruit and vegetables, 10,000 pounds of beans, 11,000 pounds of bread, 17 barrels of beer, 1100 pounds of dried fruit, 5500 pounds of coffee, 350 barrels of flour, 15,000 pounds of sugar, 49 barrels of molasses, 3 barrels of rum, 7 cases of whisky and 2000 pounds of tobacco. She carries 4 whaleboats, 25 cases of rifles and 25,000 cartridges.

THERE has recently been successfully treated at Halloway, near London, the largest balloon in the world. It has a capacity of 100,000 cubic feet, weighs 2250 pounds, and will lift an additional ton. It is to be used in making meteorological observations for a period of six days without descending.

A LARGER wheel than the great Ferris wheel is being erected at Earl's Court, London. It is a 400-foot wheel, and will carry 2000 people in fifty cars. Three restaurants will be built on platforms at varying heights on the supporting towers, and a ballroom will crown the towers at the axle.

Teacher: "With whom did Achilles fight at the battle of Troy?" Pupil: "Pluto."
Teacher: "Wrong. Try again." Pupil: "Nero?" Teacher: "Nero? How do you?" Pupil: "Then it must have been Hector. I knew it was one of our three dogs."—Hallo.

To be a man's own fool is bad enough; but the vain man is everybody's.—Penn.

Cause of the Hard Times.

George Gould says it is because of the hostility to corporations.

The farmer says it is the low price of wheat.

The silver men say it is the action of Wall street.

Wall street says it is the action of the silver men.

The manufacturer says it is the fear of free trade.

The consumer says it is the tariff.

The capitalist says it is the exorbitant demands of labor.

The debtor says it is the creditor.

The creditor says it is the debtor.

The Democrat says it is the Republican.

The Republican says it is the Democrat.

The Populist says it is both.

The Prohibitionist says it is whisky.

The preacher says it is the devil.

What do you say? or don't you know?—Canadian Recorder.

One Side of It.

There are more than 300,000 men employed in bituminous coal mining, most of whom are now on strike. They earn usually \$100,000,000, which is 68 per cent of the value of the coal at the mines. The mining companies have not been making any money lately, because so many mills and factories were closed that it has restricted the market for coal. The reduction of miners' wages was a shrewd move on the part of the companies. The managers expected that it would produce a strike. This was just what they wanted, in order to lessen production of coal and clear off surplus stocks. As soon as this is done the strike will end, and everybody will pay a little higher price for coal than he would if competition continued without restriction.—American Manufacturer.

M. LOUIS BOUTAN has succeeded in taking some beautiful photographs of the bottom of the sea by the aid of a newly invented lamp for burning magnesium powder under the water. He first descends to the bottom and selects his views, next has his apparatus lowered to him, then arranges the same for several flashes, enabling him to take as many successive pictures.

THE great Pitch lake of Trinidad covers 99 acres and contains millions of tons of so-called pitch. This is in reality a mixture of asphalt and oil, which is continually oozing up through cracks and crevices beneath the pressure of the strata of rock above.

Delicacy is to the mind what fragrance is to the fruit.—Poincelot.

OF INTEREST TO CONSUMERS.

During these times when grain is low, fruit difficult to sell and produce of all kinds less remunerative than it has been, farmers and fruit-growers find their incomes are less than they expected, and as a result it is essential that what they use should be supplied to them at the lowest possible cost. The Pacific Coast Home Supply Association has for a number of years supplied a large number of families throughout this coast with their necessities and have been so successful in purchasing advantageously for their patrons that their business shows a constant increase, and they are still at the old stand ready to attend to the wants of the public. Other organizations of similar nature have started, and some of them have gone out of existence, while in other cases they have failed to give the best of satisfaction. This has sometimes operated to destroy confidence, but there is no question the plan of shipping direct to consumers and making the road from manufacturers to consumers as direct as possible is the most economical way of conducting business, and as a result you can obtain better goods for less money by using the Association than through any other source. Those who are not members would do well to write to headquarters for information, which will gladly be supplied, and if their representative should be in your neighborhood at any time, he will be instructed to call upon you and explain the system thoroughly.

REMEMBER, the address of this Association is 182 Market street, San Francisco, with branch houses in Los Angeles and Portland.

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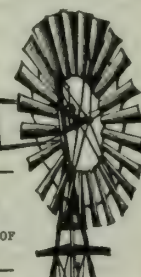
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WRITE FOR CATALOGUE NO. 14 DEVOTED TO AGRICULTURAL MACHINERY.

The purpose of this notice is to inform both farmers and merchants, who use or sell Horse Forks, that they must not purchase Horse Forks that infringe the above Patents; and to call their attention to the fact that certain horse forks, manufactured by F. E. Myers & Bro., Ashland, O., and imported and sold by the Deere Implement Company, of San Francisco, are direct infringements of the above patents, the manufacturers of the infringing forks having admitted in Court that their forks were an infringement of the above patents, and are now paying royalty for manufacturing and selling them; and they have agreed not to sell any west of the Rocky Mountains.

All parties selling or using these infringing Horse Forks will be promptly prosecuted.

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The World's Gold Supply.

The most eminent living writers on the precious metals, Suess and Soetbeer, have recently published what the New York Telegram calls a very alarming statement. It is to the effect that the total amount of gold dug out of the earth annually suffices only to supply the present demand for that valuable substance for use in the arts. Not a bit of the new product of the mines is available for coinage. Trinket use and waste in manufacture exhaust the whole yield. If this is correct, then gold must vanish from circulation before long, because the output of the gold mines of the world is diminishing rather than increasing, and there are few fields left to explore. But Uncle Sam's metallurgists say that it is not so. The writers quoted fail to consider the fact that the gold employed in the arts is utilized over and over again. It goes through a sort of cycle. Articles of jewelry often disappear, but are seldom lost. When, through accident, they pass out of the possession of the well-to-do, they go to the poor and sharp-eyed, who sell or pawn them. Some jewelry is lost by fire and some in the sea, and these losses are absolute and hopeless; but jewelry otherwise is certain, practically, all of it, to find its way, sooner or later, to the pawn shops or into hands of dealers in old gold. Thus it is melted up eventually and reappears again in other shapes. This is what is termed the "invariable supply" of that metal.

There are a number of unavoidable causes of loss of gold. The first and most important of these is by abrasion. Jewelry loses much weight in that way, especially rings, which are usually eighteen karat and are worn rapidly. Coins suffer much less, but still considerably from wear. All gold leaf is a total loss to the gold stock of the world. Where used for decorative purposes it is never recovered. It is not employed for filling teeth nearly as much as formerly, "porous gold" being substituted. But, of course, the gold utilized for filling teeth is a total loss, and in the aggregate it is enormous in quantity. If it be supposed that the average dweller in cities of this country has 50 cents' worth of gold in his or her mouth, which is placing the figure very low, it will be seen how great is the waste in this form. Each succeeding generation takes so many millions of dollars' worth of the metal from the world's stock in this way. Some gold is lost in remelting, though all possible means be taken to reduce it to the lowest possible figure. Not only are the floors swept and the dirt treated for the recovery of the yellow substance, but the wooden planks are burned eventually with the same object. Even the shoes of each man who works with the metal are subjected to the chemistry of fire, yielding a small "button" of the precious metal.

Curious Effect of Changing Time.

The introduction of Middle European standard time throughout Germany had the effect of reducing considerably the amount of gas and electricity used for lighting purposes. Throughout a great part of Germany the time was advanced from 10 to 30 minutes. As business hours are of course regulated by the standard time, business now, while closing nominally at the same time as ever, closes actually from 10 to 30 minutes earlier than before and as much gas as is consumed in that time is saved. This deficiency is not made up by business beginning earlier in the morning, because most business begins so late as to require the aid of artificial light in the morning for only a short period in the year. Restaurants and cafes that close at midnight save from 10 to 30 minutes of artificial light. The reduction of electricity for lighting consumed in Hanover is calculated to be eight per cent, representing a reduction in the income of the company of 2000 marks per year. Figures for gas are only given for two small cities, Kiel and Brochum, which report the reduction of gas consumed in the last year to be 103,000 and 100,000 cubic meters respectively.

FOREIGN PAPERS say that about 18,000,000 taels, or \$15,000,000, have been collected in China for the celebration of the sixtieth anniversary of the birth of the Dowager Empress of that country. This sum, however, is not considered sufficient, and efforts will be made to collect \$10,000,000 more. The celebration will be one of the most elaborate ever held in the Flowery Kingdom. The Dowager Empress is looked upon as the cleverest woman in China, and the virtual ruler of the country, as her son

consults her upon every important question. He makes stated pilgrimages to the castle in which she lives to discuss public affairs with her.

Spiders' Webs as Scientific Instruments.

The astronomers of the Naval Observatory at Washington have sought all over the world for spiders' webs. Such gossamer filaments spun by industrious arachnids are utilized in telescopes for cross lines extended at right angles with each other across the field of view, so as to divide the latter into mathematical spaces. Threads of cobwebs are employed for the purpose because they are wonderfully strong for their exceeding fineness, and also for the reason that they are not affected by moisture or temperature, neither expanding nor contracting under any conditions. Specimens were obtained from China by the directors of the observatory, because it was imagined that the large spider of that country would perhaps produce a particularly excellent quality of web.

However, it was found that the best web is spun by spiders of the United States, such as found in the neighborhood of Washington. Accordingly, expeditions are made early in June each year to get from the fences and barns thereabout cocoons of the big "turtle back" spiders. Each cocoon is composed of a single silken filament wound round and round, though there are apt to be some breaks in it where Mistress Spider left off work for a time. Attempts have been made to use the cocoons of spiders like those of silkworms, and exquisite fabrics have been manufactured from them. Unfortunately, it was found impossible to make the industry a commercial success, owing to the combative inclination of these creatures. When kept together they will always gobble each other up in a short time, the final result being a single very large and fat spider and one cocoon.—The Optician.

The Value of Brevity.

In conversation with one of the leading lawyers of this town the other evening, our talk drifted upon the enormous fees sometimes paid to the members of that profession, and he cited an instance where a lawyer received a large retainer for the composition of only three words. Every one is familiar with the famous sign of the Reading railroad, "Stop, look and listen," which is placed on grade crossings along its lines, but comparatively few know the real significance of these few brief words. The rule of the roads, from a legal standpoint, is that a teamster or driver must stop, look and listen for an approaching train. Previous to the adoption of this sign the company used these words, "Beware of the engine and cars," followed by a series of injunctions that no man walking would have patience to read. There were several accidents which brought the company into court, and the opposing counsel claimed that these signs were not clear warning. McLeod went to Judge Paxson, who wrote the admirable sign now in use by that company, "Railroad crossing; stop, look and listen," receiving for this modest composition the sum of \$4780, a trifle over \$796 66 a word. It can fairly lay claim to being the most expensive composition on record, and shows very forcibly the value of brevity.—Shenandoah Herald.

Sky Scrapers in Chicago.

It is a fact well known to the builders of the tall buildings called "sky scrapers" in Chicago that there is a constant and uneven motion going on throughout the whole structure, called by some molecular vibration, to an extent which can be measured with the naked eye. Girders will move an inch or more, and then come back into place. The causes of this movement are as yet entirely unknown, as are their extent and duration. Another peril which menaces this class of building is oxidation. The steel frames are inclosed in fire proofing and beyond the reach of examination or the application of preservatives. The disintegration may be slow, but the day must come, so say good authorities, when the great buildings must succumb to rust and ruin.

Ought to Work Both Ways—"Cyrus," she said, reluctantly, "I don't think I would make a good wife for a poor man." "Then you'd make a mighty poor wife for a good man," replied Cyrus, grabbing his hat.—Chicago Tribune.

Conceit may puff a man up, but can never prop him up.—Ruskin.

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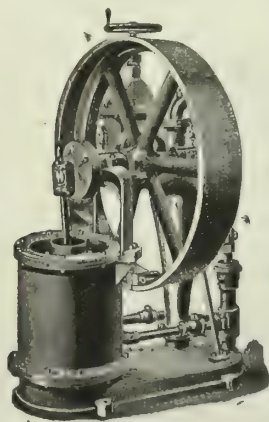
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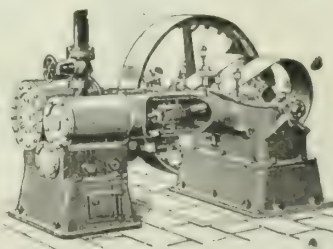
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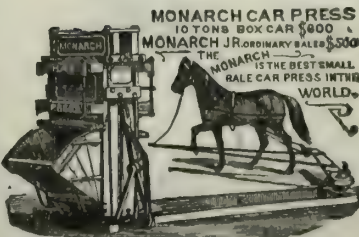
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The MONARCH loads 10 tons in an ordinary box car. Uses Wire Ties—rope will not hold.

The JUNIOR MONARCH loads from 7 to 9 tons in box car. Uses either Wire or Rope ties.

The sizes of the bale are given when in the press. Allow about 6 inches for expansion for cutting ties.

DOUBLE END HURRICANE PRESS (Two Sizes) ALSO FOR SALE.

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The "Champion" Hay Press. The "Lightning" Hay Press.

Continuous travel, steel chamber, 17x22 bale, variable length, weight 3500 pounds.

REMEMBER!

- First—We guarantee the "Champion" power is the simplest, strongest, most durable, and easiest on the team.
 Second—The "Champion" is positively the only full circle press made, having a positive working automatic device, that will withdraw the plunger full stroke each time, independent of the rebound force of the material.
 Third—The "Champion" has the largest feed opening, and is the only press made with a condensing feed hopper.
 Fourth—The "Champion" has an automatic folder and folding spring top plunger, insuring a smooth and attractive bale.
 Fifth—The "Champion" is the most portable and easiest moved from place to place.
 Sixth—The "Champion" has the best constructed bale chamber, and the easiest operated and most effective mode of adjusting the tension and regulating the weight of bales.
 The "Champion" Two-Horse Continuous Travel Steel and Iron Baling Press is fitted with automatic throw-back; easily adjusted, quick-relief perpetual bale chamber, bell-ringing attachment, feeding fork and platform, monkey wrench, oil can, etc.



Full circle, with crank axles, bales 17x22 inches, weight 3800 pounds.

Some of the improvements worthy of consideration are, viz: The tying chamber has been enclosed with steel plate and T steel—something no other press contains; the feed openings have been enlarged to 28 inches, being larger than on any other, thus admitting of much larger charge of feed; this means greater capacity and easy work for the feeder; he has no aprons or so-called self-feeders, which consist of complicated adjustments, to bother with. These large feeds are pressed with ease, owing to our highly improved and superior power, which is the most practical and simple. The power has been reduced to a perfect roller movement by the use of a double-ended crank, with chilled rollers in each end, having a bearing on the chilled inclined plane. The crank is but ten (10) inches from center, being the shortest in use. By substitution of this short crank, the pitman travels practically straight in and out, reducing the friction to naught; there is no wear or grinding on the end of the pitman, or adjustments, as it is a roller movement.

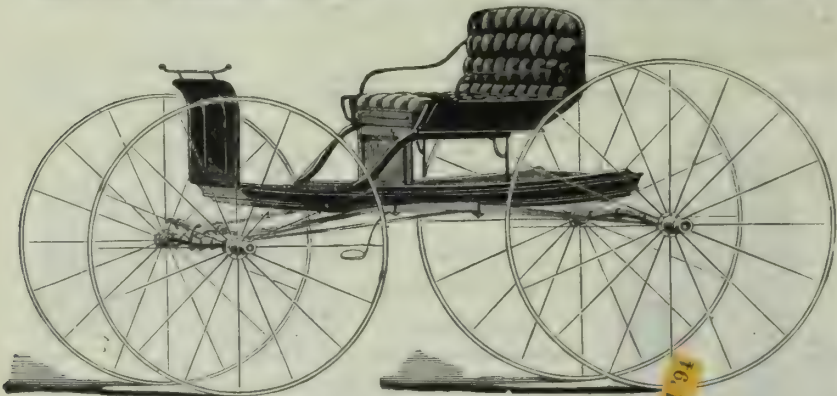
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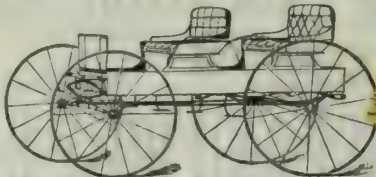


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HARNESS.....\$7. BUGGIES.....\$75. SURREYS.....\$130.



No. 129.—Price \$65.



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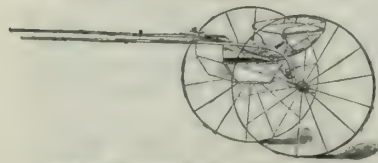
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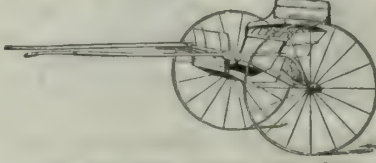
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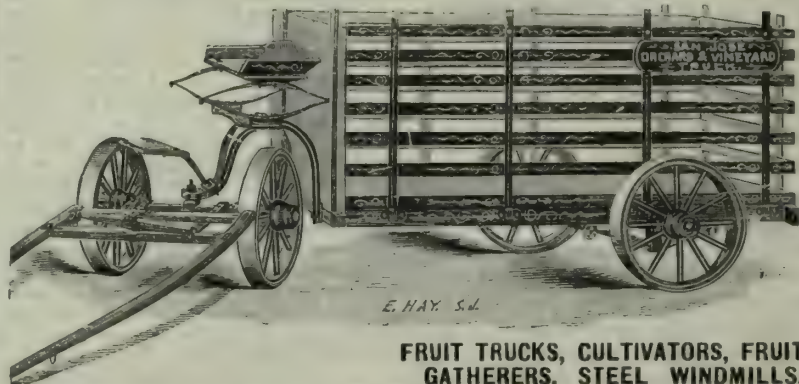


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No. 19a.—1-inch axle. Price \$25.

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PACIFIC RURAL PRESS

Vol. XLVII. No. 26.

SAN FRANCISCO, SATURDAY, JUNE 30, 1894.

TWENTY-FOURTH YEAR.
Office, 220 Market Street.

Scenes in San Mateo County.

San Francisco has the charms of a most picturesque environment. This is apparent even to one who rides upon a cable car to the hills just west of the thickly settled portions of the city and looks from these eminences beyond the shrub and flower-clad foreground upon the stretches of ocean or bay, or upon the rim of hills upon which the sky rests on all sides save the west, where the eye fails of marking distance upon the illimitable ocean. All the ferry lines plying east and north from the city bring the nature lover quickly to the quiet of meadows, hillsides and fern-fringed canyons, but proceeding southward from the city one can reach a most delightful suburban and rural region without the intervention of paddle wheels. San Mateo county is easily attained by steam or electric car, or by carriage, and once within its borders the city is as effectually removed from sight and hearing as though it were sunken in the sea. This fact has made San Mateo county, ever since San Francisco has had people of wealth or rural yearnings, a favorite suburban residence region. It is a great joy to all who seek refuge from city activities

shows the grounds once laid out as a private residence by a millionaire of the '70's, but now much improved and extended for the occupation of the Belmont School, one of our first-rank schools for the education of young men. The view is but one of a series just issued as a handsome souvenir publication, entitled "Views of Belmont School," by Mr. W. T. Reid, the well-known principal. These

and freedom of nature unadorned. All through the San Mateo hills there are lakes and streams, forests and glens of most charming aspect and welcome restfulness. One who lives amid such scenes seldom needs journeys to distant resorts, except it be for novel social delights. So far as the influence of scenes varied and charming goes, he has simply to relax his activities and enjoy the rest and recreation which the vicinage of his own home affords. To the mature such advantages are very marked; to the youth they are a boon and a blessing beyond description.



SCENE IN SAN MATEO COUNTY—THE BELMONT SCHOOL.

WE commented a few weeks ago about the value of tree leaves as fodder. Now we read in the *Adelaide Observer* (South Australia) that the sheoak makes a useful fodder for stock. The dry leaves which drop from the trees are equally as good as the green for cattle and sheep. The Moreton Bay fig leaves are also very good for stock. In Europe a goodly number of trees furnish valuable fodder for cattle. In Australia there are numbers of trees and shrubs which are eaten by cattle and sheep. The sugar gum leaves are nutritious and much liked. If a triple belt of sugar gums or other useful trees were planted at 160 feet away from an orchard or vine-



CANYON NEAR BELMONT.



ARTIFICIAL LAKE IN HILLS NEAR BELMONT.

or protection from the harsh ocean breezes to pass leisure hours amid the rural charms and the delightful climate of San Mateo county. The result is that the county has probably the neatest villages, the most beautiful rural residences, and the best private schools, not to speak of the great Stanford University, which any county in the State can boast.

Our views on this page are, so far as they go, illustrative of the charms of San Mateo county. The larger view

views show the institution more fully than we can in this connection, and all interested should apply for it. Our purpose is rather to use the scene as illustrative of our best work in turning charming natural surroundings to most salutary uses, in affording delightful homes where the beauty-lover can come close to nature's heart.

The other views are in the immediate vicinity of the Belmont School, and show how easily one can escape from even the mild constraint of park-like grounds, to the quiet

yard against the prevailing winds, says our Australian contemporary, it would increase the crops of fruit, provide valuable timber, add to the beauty and attractiveness of the place, supply a good deal of food in the dry leaves that would always be dropping, and shelter the stock and the crops, and give a comfortable shade during hot weather. Some of our readers probably have the sugar gum. It is somewhat but not widely distributed in this State. We would like to hear of stock fed on its leaves.

PACIFIC RURAL PRESS.

Office, 220 Market St.; Elevator, 12 Front St., San Francisco, Cal.

All subscribers paying \$3 in advance will receive 15 months' (one year and 13 weeks) credit. For \$2 in advance, 10 months. For \$1 in advance, five months.

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	1 Week.	1 Month.	3 Months.	1 Year.
Per Line (agate).....	\$.25	\$.50	\$ 1.20	\$ 4.00
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Large advertisements at favorable rates. Special or reading notices, legal advertisements, notices appearing in extraordinary type, or in particular parts of the paper, at special rates. Four insertions are rated in a month.

Registered at S. F. Post Office as second-class mail matter.

Our latest forms go to press Wednesday evening.

ANY subscriber sending an inquiry on any subject to the RURAL PRESS, with a postage stamp, will receive a reply, either through the columns of the paper or by personal letter. The answer will be given as promptly as practicable.

ALFRED HOLMAN.....Editor
E. J. WICKSON.....Special Contributor

San Francisco, June 30, 1894.

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The Week.

The notes of the week are rather more cheery than of late. The harvest is turning out far better than expected, though wheat-growers should not be misled by the reports that the outcome on the whole will be large. It is useful to create such an impression about these days, and it is natural to exaggerate the effects of recent favorable conditions. Too much wheat went to nothing this year to make a large aggregate. The fruit crops are looking well and the great activity of the season is at hand. In the earlier regions apricot-drying is under way; and where the fruit is not yet mature, there is much doing in preparation for it. For the next three months California will be delightfully busy and abundant activity will lead in content.

The RURAL closes another volume with this issue. It has been an interesting half-year in our work, as the index on the last page will remind those who have scanned our pages from week to week. Rather slack times in business have given a somewhat greater proportion of reading pages, and we hope subscribers are correspondingly better informed. Consciousness of this service is comforting and encouraging to the management. Still, the RURAL has no reason whatever to complain. The new volume will show the old recognized exponent of the agricultural interests of California still has the strength and vigor of youth and can command improvements to suit the future. Improvements may be looked for which show that the RURAL will serve its important constituency better than ever and renew the expression of the basic principle upon which our work has so long rested that to coming and continued and increased success is to merit it.

THE result of the late rains in parts of the great interior valley is the induction of a second growth from hay stubble, which is a surprise to many farmers. We were in the Stockton region last week and heard frequent comments upon this phenomenon. It is, of course, not unusual in a region of liberal soil moisture, and a second cutting of a hay field is not a new thing, but to see such quick and tall growth is unusual. It is the result of late rains and recent cool weather. We saw many fields in which the stubble showed a second setting of heads and will yield a second cut heavier, probably, than the first. This will be one of the ways in which a poor season will right itself somewhat, and help out many people with more hay than they thought it possible for them to have on May 1st.

Can We Grow More Profitable Wheats?

We are glad to note an increasing interest in the probability of notable improvement of our wheat product through the use of seed of improved varieties. This is a matter which the RURAL has often urged, and to this end the Agricultural Department of the State University has for years sought new varieties abroad, exhibited their product at our leading fairs and annually offered seed for trial by farmers. The interest thus far has been restricted by the prevalent idea that while wheat is so low any kind of seed is good enough and the business had too little in it to warrant enterprising search for better varieties, such as our fruit men make in their search for the best fruits.

It should not take much thought to convince any one that the time of narrow margin on a crop is the very moment at which the greatest effort should be made to secure seed of varieties which yield the finest grain and the heaviest weight of it to the head. When wheat is high any kind is profitable; when it is low only the very best can pay. We have always hoped that this might be seen and have frequently remarked that our wheat-growers should strive to secure greater weight of grain per acre in all the ways by which this end can be reached. They have probably done as much as can be done at the present in reducing cost of plowing, seeding and harvesting to a minimum, but they have done very little toward making the weight of the crop a maximum.

We are glad to note that a gentleman very high in knowledge of wheat and in the esteem of wheat-growers is finding leisure to investigate this proposition and to take measures to increase the interest in it among wheat-growers. Mr. Albert Montpellier, of the Grangers' Bank, is conducting a very interesting investigation into the comparative productivity of the several wheat varieties which now constitute our main crop, and he is reaching some results by his countings and weighings, which we hope to secure ere long for publication. He is also securing from abroad samples of the best varieties grown in regions with climates similar to that of California. In his work he will receive the fullest co-operation from the Agricultural Department of the State University and we expect that the outcome will be something of much importance to the future of our great cereal interest.

Frozen Freshness in Butter.

The Eastern people have learned something about keeping butter so that it can be put away whenever it is in excess and brought out months afterward with all the freshness of June upon it. It seems that ordinary storage in cool chambers at a temperature just above freezing does not do this. Under such treatment the butter deteriorates and has to be sold as stored butter, but if the temperature is dropped lower, so that the butter is actually frozen, the freshness is retained. The *Breeders' Gazette* says that artificial refrigeration is common, immense plants being found in all commercial centers. Into these houses go the tubs of butter, where they are chilled and then frozen up solid, the whole being held a frozen mass until just before called out for consumption. Butter kept frozen by artificial refrigeration is said to be far superior to that kept in ice-house refrigerators, having practically the same freshness when thawed as previous to freezing months before. The freezing of butter in this way is no longer an experiment.

This fact seems to be giving to the butter trade another feature. It is stated that in the Eastern centers just now the banks are carrying a heavy surplus of funds and are glad to put it out on any safe investment. Refrigerator receipts for this frozen butter are negotiable at the banks, and so those desiring to speculate in this product can find a means of securing the capital necessary to carry the venture. The result of this is that in Chicago butter prices hold up well this month in the face of receipts of nearly five million pounds of June butter in a week. This is all right so far as it goes, but in order to get all there is in the new manner of cold holding, the producers should reap the benefit of borrowing on their product and selling when the price warrants. This can be done by suitable co-operative organization of producers and the output of a strictly uniform and first-class product which is worth holding.

THE areas of sugar-cane and rice on the Government station on Union Island are looking well. Some of the cane is now two feet high and vigorously growing. The rice is about six inches high. Water will be admitted through the levee to the ditches in the plot this week. Seepage is less than usual this year as the rivers have not reached a very high mark. Sugar beets and flax planted June 1st have secured a good stand and promise well.

A LIGHT HAY CROP is predicted for parts of Great Britain.

That Imperishable Fruit Preserving Fraud.

Now that "black pepsin" dairy swindle is exploded and its proprietor is in some States prison for abuse of the mails, it might be expected that unwary people might have a release from this fraud, but such does not seem to be the case. It is announced by one of our Chicago exchanges that the swindle is still being worked. We hardly need repeat that if any of our readers receive letters telling them what wonderful results come from using this drug in butter making, no attention should be paid them. A woman at Omaha is still sending out such letters.

But if this "black pepsin" is still abroad in the land, it is to be hoped that some sort of justice may overtake the people who for the last fifteen years have been swindling people with a bogus fruit preserving process and selling them a few cents' worth of sulphur, charcoal and niter for a dollar. It must be fully fifteen years ago that Prof. Hilgard, of the State University, told RURAL readers the worthlessness of the "Fruit Preserving Compound from Canada," for the worthless stuff was being sold under that name at that time. Since then it has taken various names, the unkindest, perhaps, being that of the "California Cold Process of Fruit Preserving," which was extensively advertised and sold at the East a year or two ago. We had the pleasure of attacking the old fraud under its new name, but no amount of pommeling seems to phase it in the least. It now has another name and hails from another country, but it serves just as well to enrich swindlers and impose upon the gullible. We now hear of it through a statement which Mr. H. A. Huston, chemist of the Perdue University Experiment Station, makes public. It is now called the "Great French Preserving Process," and has its headquarters in Chicago. Mr. Huston says of it:

The examination of the compound showed that it was composed of sulphur, charcoal, nitrate of soda, cane sugar and common salt. The essentials of the directions for the use of this material were that the compound should be burned in a closed space, and the fumes arising from the burning should be absorbed by water placed in suitable vessels, and that the fruit in some cases should also be exposed to the fumes. Finally, the fruit was to be placed in the water which had absorbed the fumes of the burning compound and the vessel closed. The burning of the compound would result in the production of sulphur dioxide, also known as sulphurous acid, as one product, and it is this substance which exerts the preservative action in the process. The other ingredients are merely to aid in the burning of the sulphur. This sulphur dioxide is an intensely poisonous gas, and its use is prohibited as a food preservative in European countries. When the gas is absorbed by water sulphurous acid, a powerful therapeutic agent, is formed. There is no doubt that its preservative action will be effective, for it is one of the best antiseptic and bleaching agents. But there are grave objections to the indiscriminate use of powerful therapeutic agents in food.

In other words, the process and the material are altogether unsuited for the preservation of anything which is to be used as food. It will do in a certain way to prepare specimens for exhibition, but its active agent can be prepared in a much better manner by some of the recipes which have been freely published during the last two years. But even for such use it is not fully satisfactory. In fact the compound, under whatever name it appears, is merely a means for imposing upon people and a very mean way of doing that. Considering the many declarations we have made of its character, surely no amount of smooth talking should help its hawkers with RURAL readers.

AND now we are assured that both cotton-seed and oleo are to be knocked out as debasers of butter and lard. The new fat which people will welcome to their frying-pan will be the outcome of a newly patented process for combining mineral and vegetable oils, which it is claimed will revolutionize the whole trade in such "imitation" goods. It is expected that this new discovery will prove another bonanza for the producers of petroleum. It is also announced that a Cincinnati chemist has succeeded in making an imitation milk! While the success of these latest "schemes" is decidedly problematical, says the *Breeders' Gazette*, the extent to which adulterations in general are being introduced renders it imperative that Congress give us a comprehensive pure-food law which shall at least enable consumers to know in advance whether they are purchasing genuine or counterfeit goods.

It does not look as though the sheep men would get any feed in Uncle Sam's Sierra parks this year. It is telegraphed from Washington that a large number of petitions for opening the lands of the national parks of California for the accommodation of sheep-herders have been received at the Interior Department. The department, however, has declined to take action, on the ground that it would constitute a violation of the act of Congress under which the parks were set aside, and that Congress alone can act. There are 1786 square miles of land embraced in the three parks—the Yosemite, the Sequoia and the General Grant.

From an Independent Standpoint.

An event so profoundly cruel and tragic that it fills the whole world with horror has darkened the page of European history during the past week. On Sunday night President Sadi-Carnot, the official head of the French Republic, was murdered in a public street of Lyons by an anarchist. The President was at Lyons attendant upon some ceremony in connection with the International Exposition just opened there. The chief event in honor of his presence was to be a gala performance at the theater and it was while en route to this entertainment that he was stricken down. The streets were lined with masses of people eager in expressions of patriotic enthusiasm, and the President's carriage was proceeding slowly when a young fellow darted through the guard of honor and mounted the carriage step. No effort was made to stop him because it was thought that he was some enthusiast wishing to make the President a gift of roses which he carried and with it to present a petition—a thing not uncommon. At the instant of this approach Carnot was waving his right hand and saluting with his hat in response to the ovation, and as he turned pleasantly toward the supposed petitioner a dagger was thrust into his body. It was a death-blow. The stricken man was carried to a place of comfort where in a brief time his life passed away.

In an instant after the fatal thrust, its effect was observed and the crowd fell upon the assassin, who made no attempt to escape. He was being roughly handled and in another moment would have been torn to pieces, but by a heroic effort the police overcame the people and bore him, bruised and torn, to prison, where he gave his name as Cesare Giovanni Santo, his age as 22, his nativity as Italy and his political character as an Anarchist. He made no reserves, declaring that he came to Lyons to kill the President and gloried in his success.

The motive of this vile deed lies deep in the malignant passions of political hatred and fanaticism. There exists in France, as in all other countries of continental Europe, an organized body of social malcontents so steeped in hatred of the existing social order, and so debased by passion, as to hold the infamous creed that any means leading toward revolution is justifiable. Their plan is to disintegrate society by terrifying it, and to this end they promote the atrocities of such frequent occurrence in Europe during the past few years. Of late France has been the special theater of these monstrous cruelties. Only a few weeks ago a dynamite bomb, exploded in a Parisian cafe by an anarchist, killed a score of people. A little while previous a bomb destroyed many worshippers in the Church of the Madeleine; a little before that a bomb thrown from the gallery of the Chamber of Deputies (the French House of Representatives) killed half a dozen persons; and so one blind deed of malignant and revolutionary rage has followed another—all to the end that government and society may be destroyed.

It is the way of the doers of these acts to accept the consequences with Spartan fortitude. They submit to arrest, make no denials, glory in their crimes and die with resolution. Their last taunt is that their fellows will avenge them and that for one death on the gallows or the block there shall follow a hundred by assassination or other violence.

Within the past few weeks two anarchists have been beheaded for these crimes. Before the day of execution President Carnot was appealed to to pardon them, and it was threatened if he would not yield that France should mourn. The President was unmoved by these threats and the law was enforced. The act of Sunday last is the tragic response. There was no personal hatred of Carnot; there could be none, for he was a man of excellent character and of universal respect, but there is on the part of the anarchistic brotherhood an insane hatred of the social and political order which, as its head, he typified and personated. This is why he lies dead to-day in the beautiful palace of the Elysee; this is why France mourns and why the whole world shudders in nameless horror.

France is under a terrible strain in these days of mourning and terror. It is not in the Latin blood of her race to take grave events gravely, to be calm in grief and strong under trial. Her people have, in a comparative sense, but recently come into the responsibilities of self-government, and with but poor preparation for it. They have not the sturdy temper of their duty-doing Germanic neighbors of England; they have not, in generations past, learned the lessons of self-control and self-reliance as did our English forefathers in the folk-mote and in the Parliament house. Their system and ceremonies of religion have not, as with us, taught them how individually to lean upon God's providence, and how to think and act for themselves. All

the tendencies of their political and religious history, all the inherited instincts of their character, all the emotions of their warm blood impel them to distrust of themselves, and combine to make them followers of some dramatic leader rather than fellow-counselors for the common welfare. This is why revolution follows revolution in France. Some great crisis heats the blood and fires the heart of France; then some Napoleon of the hour cries "FOLLOW ME"—and a new dynasty is enthroned. In sober England the thing would be impossible.

It is the general judgment that the French people are bearing the present trial with unusual self-command. There are some evidences of blind and dangerous passion—namely, the destruction by impassioned mobs of Italian shops at Lyons and elsewhere—but the people, generally speaking, are bearing the strain in better temper than might have been expected. Twenty years of self-government has wrought a sobering effect, and has, to a perceptible degree, elevated the moral character of France. The French system provides no successor to the Presidency save by the process of election, and the necessity of immediately choosing a successor to Carnot is, happily, diverting the thoughts of the people from more violent and agitating reflections. The French Republic, we believe, will come through this ordeal stronger for its trial and surer in its position among the established governmental systems of the earth.

At this time of profound national affliction the heart of America goes out in sympathy to France. As we read of Sunday's tragic event, memories of Lincoln's murder and of the assassination of Garfield fill our minds and hearts. We recall, too, the story of another age and of other generations, long dead and gone, when the treasure and the blood of France were poured out that America might be free; and in the softened and kindly mood of these memories we know that even in a republic there may abide the spirit and the heart of national gratitude. May the God of nations be the strength and guide of the troubled people who share with us the duty and the glory of maintaining among the nations of the earth the integrity and the dignity of government for and by the people!

The RURAL is asked to tell how it was that Mr. D. M. Burns of San Francisco came to be the dictator of the convention at Sacramento last week—to "explain by what methods he contrived to boss the affair in its organization, conduct and results." The answer is very easy. Mr. Burns, for reasons which he has not explained, "set up" the primaries in this city and thus secured a body of delegates from San Francisco county upon whom he could rely to vote as he ordered. By "setting up" we mean that, while other men slept or were busy with their private affairs of business or pleasure, he devoted himself to making up ward tickets and getting them elected in the primaries. This is easily done, because most citizens do not trouble themselves about the primaries, leaving them to be "run" by whoever is willing to do the work—and in the recent instance Mr. Burns was the man. With a solid force of 164 votes, thus secured, bound as the condition of their election to follow his wishes, Mr. Burns entered a convention of 848 members.

Now 164 is by no means a majority of 848, but it is a prodigious basis for trading—and this is how it is done: Nearly every county has a "favorite son" whom its delegates have agreed to support for Secretary of State, for some commissionership, for State Printer or some other office of relatively minor importance. The success of this favorite son is the foremost desire of his county delegation, therefore they say to him or his manager, make any engagement you please for us in exchange for votes for yourself. Upon his arrival at the convention he learns that Mr. Burns has the solid 164 votes of San Francisco in the hollow of his hand. He goes to see Mr. Burns, and says something like this to him: "Now, Mr. Burns, I am a candidate for State Printer (or whatever else he may want) and I am supported by the ten (or twenty or forty) delegates from Wayback county. Now, if you will give me your support for the place I want, I will promise you all my votes for all the other places." Mr. Burns accepts the proposition, and a little later it becomes known that he has "secured" the full vote of Wayback county—that he has not only his original 164 San Francisco votes, but also the votes of Wayback county at his disposal. And since the success of the Wayback favorite son rests upon Mr. Burns' control of the convention, the whole Wayback delegation joins in the Burns league. This, of course, increases his capital in the way of trading, and, after the manner of the "trade" just described, he makes other trades until he has a majority of the convention pledged to support whomever he may name.

In all his trading, however, he takes good care to make no engagements to interfere with his own plans. He

cares not at all who is State Printer, who is Secretary of State or who may have this or that minor commissionership, but he cares a great deal about the Governorship, the Supreme Court judgeships, the railroad and tax commissionerships and the offices which have the spending of State money; and in all his trades he has made no arrangements which interfere with the filling of these places with men of his own choice, bound to do as he may bid them. When it comes to the voting he is careful—that is if he is a "square" (and a wise) boss—to keep faith; he gives the candidate from Wayback his commissionership and the men from the other counties the several minor places for which they bargained; and he goes home with the larger nominations in his vest pocket.

The evil of this is very evident. It disposes of the nominations and through them of the State officers upon a system which takes little or no note of personal or special fitness. It puts the dictatorship of State affairs in the hands of one man, and he a man who in no sense represents the people. It is, in fact, a surrender of the State government to a political dictator, who in ninety-nine cases out of a hundred is a man of cheap character and sinister motive. As a rule the so-called "boss" is the servant of some great material interest, some trust or railroad corporation or water company which has need, or thinks it has need, of "friends" in the State Government. We are not applying this statement to Mr. Burns, for we have no knowledge of his affiliations; but the system leads to that sort of thing, and Mr. Burns may or may not be the usual sort of boss.

That this system prevails in our politics is the fault of the men who most criticize it. By way of illustration, the writer of this paragraph admits with some shame that, although a citizen and a voter of San Francisco, he did not even take note of the date of his party primary election. And what is true in his case is true of ten thousand others. Upon just such neglect of duty the whole bad business rests. What we need in this county, especially those of us who take a hand in the criticism of political methods, is a new birth of patriotic interest and a little more disposition to stir out among the boys before the campaign plans are irrevocably made.

The official figures of the Oregon election are as follows: For Governor—Lord (R), 41,034; Pierce (Pop.), 26,033; Galloway (D), 17,498. Adding 2700 for the Prohibition vote makes a total of 87,265.

The Farmer and Taxation.

"Palsied the arm that forges yokes
At my fat contracts squintin';
An' withered be the nose that pokes
Enter the Gov'ment printin'!"

TO THE EDITOR:—Judge Currey's very timely letter in a recent issue ought to set farmers thinking.

Those who have been misled by Henry George's promises of a millennium when land pays the entire tax levy may fairly estimate, from the fact that real estate already pays 80 per cent thereof, how slim is the probability of that millennium even when real estate is charged with the additional 20 per cent.

Were the economy that Judge Currey suggests put in practice, the 20 per cent paid by personal property could be easily remitted, and it is very dubious if Henry George himself would then find his millennium a bit nearer!

It is quite possible to reduce our State and county expenditures much more than 20 per cent, if we will use a little business sense in choosing our legislators. But, Mr. Editor, who is reckoned the model Senator or Assemblyman to-day? Is it the honest man, earnest in his intention to retrench public expenditure and reform political corruption; or is it the man who will recklessly squander public funds so that his county may pull heavily on the State Treasury, and his constituents get a large share of political preferment? Notoriously every man seeking an office is called upon to promise a large share of governmental spoil to the voters of his district. One loud-mouthed patriot wants a clerkship; the local tyro has his eye on the State Printing Office; the whole community are unanimous that the Legislature's principal duty is to establish a Normal school, or orphan asylum at least, right by their county seat. Thus the candidate who will promise the greatest disbursement of taxes in his district gets elected.

Then the whole system of canvassing for votes prior to election is a ridiculous farce. What business man expects the help he thinks to employ to come, attended by a brass band and a professional orator, to ask the privilege of becoming his servant? Any merchant wanting a clerk would think the applicant crazy if the loon processed to the office with a brass band and a leather-lunged buffoon to talk through his hat and tickle the merchant's vanity. So long as we make our candidates waste money thus, they will "get even," as last election one told me he should. "Getting even," of course, means lavish expenditure of public funds, with the farmer to foot the bill.

"Each bonnable dough-face gits jes' wut he axes,
An' the peepil their annoal sof' solder an' taxes."

This was the case 40 years ago when Lowell wrote those lines, and it's likely to be the case 40 years hence unless we get politics on a common-sense basis. We delfy party as though party were in itself something worthy of allegiance. We forget that whatever tends to divide mankind is mischievous rather than helpful. As your able article suggests, all parties are responsible for the present distressful conditions, and I for one would welcome such a fusion of earnest-minded men of all parties as should secure "retrenchment and reform" not only in word, but in very deed. EDW. BERWICK.

Pacific Grove, June 9, 1894.

A LECTURE on agriculture by a native is a quite unexpected indication of awakening from India's lethargy. Yet Calcutta papers report a lecture by Baboo Repin Behary Chose, B. A., on "How to start life as an agriculturist," the meeting being presided over by a native who, at the close of the lecture, proposed a vote of thanks, which was carried unanimously.

Fruit Exchange Bulletin.

Bulletin No. 7 of the State Fruit Exchange announces that the Exchange has established its office at No. 3 California St., and that it is now prepared to undertake the sale of dried fruits, raisins and nuts for associations and individuals. It says: "The Exchange desires immediately to engage in selling fruit for those who desire it. It promises nothing except to get all the market will afford, obtain spot cash for it, and immediately pay the same to the owner, less commission of five per cent. Those who desire to sell through the Exchange are requested to at once communicate with us for further particulars."

Market Report.

FRESH FRUITS.

It is now evident that the unseasonable rains about destroyed the cherry crop of Santa Clara and Alameda counties. A very few cars have brought fair prices, but assuming 45 cents as the actual cash paid out by the grower to pick the cherries and place them in the Eastern auction house, not including commission, it is probable that if the entire cherry crop of those counties could have been closed out at a cent a pound on the tree, the growers would have been the gainers. Growers get nothing for their fruit until the Eastern auction price goes above 50 cents, and whole cars of Tartarian have sold from 25 to 40 cents; others from 30 to 60 cents. An occasional lot bringing from 80 cents to \$1 indicates that some got through in good order and brought good prices. Royal Anns have done better on the average, but many of these have sold low. Better prices are hoped for for those now on the way, and for the Royal Anns still to be picked, as most of the fruit now ripening seems firm and sound.

There is also a decided falling off in prices of apricots, especially Royals, which have not averaged the cost of delivery, which is about 70 cents. Late sales have been running about 50 cents.

Early peaches have so far averaged a profit, but are falling off under heavy shipments.

Cherry plums are not paying at all. Clymans and Tragedys are doing well, with occasional sales at very high prices.

For drying and canning there are some transactions at about \$20. Canners, except, a few putting up mainly "extras," cannot pay, at the current prices for canned goods, what growers generally believe the fruit to be worth for drying. They expect to buy what they need at about \$15 as the fruit ripens, from growers unprepared to dry. For most kinds of drying fruit the situation remains as it has been—few transactions, and growers preparing to dry.

The Eastern prospects for fruit do not improve upon further study. There appears to be no prospect of anything like a crop of peaches, except in New Jersey and Michigan, and not large there. The statistical report of the U. S. Department of Agriculture under date of June 11th, places the peach crop of Michigan at 70, on the scale of 100; the same report places California at 85. What "100" represents is not clear; if Michigan has within 15 per cent as good a crop as California, it has enough. It is safe to say that two-thirds the peaches set in California orchards have, or should have, been pulled off the trees. But we do not think Michigan has any such crop. A correspondent (grower) writing, June 21st, from Michigan, says the general estimate for the most of Michigan is "half a crop," which he thinks too low. The fruit is now growing finely and will be large. It is all sold fresh, and the season this year is likely to begin about July 25th. There will be a good but not excessive crop of apples.

DRIED FRUITS.

There is a sharp inquiry for dried apricots, July delivery, but at prices not generally satisfactory to growers. Southern driers, with payments to make on orchards bought, are freely offering "choice" apricots at 8 cents, 7½ for goods not quite up to standard, and 8½ for "strictly" choice. The Eastern trade, while wanting the goods, are slow to buy, even at those rates, and are reported as holding off for "consigned goods," which they confidently rely on to break the market all to pieces. Eastern brokers, anxious to make sales, are constantly reporting the weakness of the market. If parties with money to pay on orchards bought, consign their first drying under advances, to raise the money to make their payments, we cannot help it. The first sellers will be those who must have money, as the buyers know perfectly well. They believe that enough will be compelled to sell to break the market. On this side we do not think so, but the buyers may be right; they know what pressure there is to sell better than we can, but we may be sure that we hear of all the pressure there is. The Santa Clara County Fruit Exchange, and the co-operative drying associations affiliated with it, are inclined to sell no apricots until they are prepared for market, which will be between the 1st and 20th of August. It is believed that no choice apricots will be offered from the Santa Clara valley at less than 10 cents f. o. b. No one there is now inclined to sell upon that basis, preferring to wait until the fruit is ready. This Exchange has not yet determined what prices to advise growers to accept. We desire at once to hear from those who expect to place their goods with this Exchange for sale, that we may know what amount of fruit is to be concentrated this season for conservative handling. Our crop of apricots is doubtless the largest we have ever marketed, but there is no reason to doubt that it can all be disposed of at fair, but not excessive prices. Some time since we noticed certain undue expectations on the part of growers, which we sought to moderate by the statement of some facts; the feeling now, in some quarters, seems to be too much the other way. It is best for us to move slowly, ascertaining all the facts and not hastening to sell, except as money must be had. We do not advise keeping our goods; we do not need them and wish to sell them, and will sell them at fair prices, but there is no hurry for a few days.

Above all things, *consign no goods*. The proper place for unsold California fruits is in California.

The inquiry for peaches is beginning, but there is nothing definite as to prices.

The Cost of Selling Dried Fruit.

The BULLETIN endeavors to ascertain and publish information which the most experienced tradesman in the fruit business can rely on as accurate and not always readily obtainable elsewhere, but it is published more especially in order that the most inexperienced grower may have the same information. Then he and his salesman and his customer may trade in the light of equal knowledge. For the benefit of many growers, it is necessary to explain in detail some matters which the trade and the largest growers perfectly understand.

The subject as to which, more than all others, the average grower is befogged is the necessary expense of making sale—it being understood that the natural purchasers of our fruits, both fresh and dry, are Eastern jobbing houses, with established retail trade, requiring our products for their customers. For convenience, we will confine our illustrations to the dried fruit trade.

To so sell our product at the East that the grower regularly realizes the most that the market will permit requires, in the first place, a person on this side fully informed as to the condition of the market, which includes not only our own supply, but the competition from all parts of the world and the financial condition of the country; and, secondly, active agents in the East to solicit orders. The sales are almost invariably

conducted by telegraph. The person on this side must give his whole time to selling if he is to be in touch with the market, and if he is the manager of a co-operative association must be so in touch with his directors as to be authorized to promptly sell or refuse to sell as opportunities offer.

The agent at the East will always be anxious to make the sale at whatever price; the grower, or his representative here, must be the one to determine what price to accept. It is therefore essential that he be well informed. The agent at the East will usually be a broker. A broker is one who lives by selling goods to wholesale houses, or jobbers as they are usually called. He usually has an office but no "store," and he sells not only our fruits, but all other goods required in the jobbing trade, usually representing some particular concern or brand, whose sales he pushes in competition with other concerns or brands in the same line. He gets all the orders he can and is paid a commission on each order. In the dried fruit business the standard commission is usually 2½ per cent, and sometimes 3 per cent, on carload lots, but by special contract the broker is sometimes paid 2, 1½, or even 1 per cent, depending upon the desirability of the goods and the volume of business. Probably the average price paid to the persons who actually get the orders for our dried fruits is about two per cent. Out of this they have to pay their own telegrams, which are a serious charge on business between here and the East, as many telegrams are sent with no resulting sales. Any local association can get its dried fruits, raisins or nuts sold by Eastern brokers for 2½ per cent. There is, however, a great difference in brokers; their intelligent selection and appointment requires knowledge and experience.

If we assume that 5 per cent is the commission to be charged the grower by his local association, and that one-half of that is paid out for Eastern service, there remains 2½ per cent for the expense of the local association; with prices as they are apt to run, a 12-ton carload of raisins might average \$1000 (it has not, of course, done that this year), of prunes \$1200, dried apricots \$2000, peaches \$1600. An association with 20 carloads of mixed fruits to market should receive a gross sum, say of \$25,000; 2½ per cent upon this sum, which would be applicable to local expenses after paying Eastern brokerage, would amount to \$625, from which must be paid telegrams, travelling expenses if any, and the salary of the manager of the association.

Now it is evident that this sum will not, after deducting other expense, support a competent manager the year round; and while the final responsibility as to prices to be accepted must always rest with the directors, or an executive committee, yet practically they must decide in the light of the facts ascertained by their manager; it will be, therefore, for associations to determine whether they can best afford to rely on one of their own number spending such portions of the year as he can afford for the money available, to appoint the Eastern agents, and take the main responsibility for advice on sales, or whether it will be more profitable to secure the services of some concern already established to perform the duties in respect to selling which a manager would perform. There can be good reasons assigned for either view; on the one hand will be experience and a much wider organization of brokers; on the other, the advantage of educating local men and becoming more independent. In any case it will cost money to sell goods in all years when the demand does not exceed the supply. Whenever the demand does exceed the supply, it will cost little. The ultimate measure of the cost of selling fruit is the same as that for measuring the cost of any other service or commodity, namely, the number of work days required to produce the result, and this will evidently be more when many men are competing for few orders than when many buyers are seeking those who can fill orders. In a short year any one can sell goods; in years of excessive crop, when there is a struggle to get orders, the ablest and most alert will get them fastest. In such years there is a competition for the services of the best brokers, and in the long run the concerns having the most business and the best known brands will get the service of the best brokers, and they will pay them the smallest brokerage.

If fruit is put for sale in the hands of commission houses in California, the service performed is that which an experienced manager would perform. They stand in the place of the manager in the matter of securing brokers and advising as to sales. They are often entrusted with the absolute power to sell at market prices. If they make heavy advances they may require that authority. But the best way to manage the sales is to unite with associations, select good men for directors and place on them the responsibility of deciding whether to manage all the association business themselves, through their managers or through some other agency of their choice.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, June 27, 1894, are from official sources, and are furnished by the U. S. Weather Bureau expressly for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total rainfall for the week.	Total seasonal rainfall to date.	Total seasonal rainfall last year to same date.	Average seasonal rainfall to date.	Maximum temperature for the week.	Minimum temperature for the week.
Yuma.....	2.17	1.65	8.16	100	62	
San Diego.....	4.98	9.46	9.88	66	52	
Los Angeles.....	T	6.71	26.28	18.31	76	48
Fresno.....		8.48	11.10	10.02	92	52
Sacramento.....		16.36	23.95	18.80	82	50
San Francisco.....		18.47	21.75	24.64	62	50
Red Bluff.....		22.09	32.32	28.79	90	54
Eureka.....	.04	54.98	49.09	47.29	58	50

ANY deficiency in the bean crop at the south will be at least in part supplied this year by increased planting on the tule islands of the San Joaquin and Sacramento. Several hundred acres are growing on Union and Roberts Island, and other islands have probably also run to beans this year.

FRENCH wheat-raisers claim that they are now raising that cereal at a loss of nearly 20 per cent, in spite of the heavy import duties levied to keep out foreign wheat.

CITIZENS of West Texas, in mass meeting, have adopted resolutions demanding 40 per cent ad valorem duty on wool.

The Wool Outlook.

The *American Agriculturist* claims that it is not quite as bad as has been painted. In the first place, it is well to note that the world will continue to use an increasing quantity of wool. In 32 years ended with 1892, the United States increased its production of wool only 388 per cent, while its consumption of wool gained 415 per cent. In the last two years of this period our production gained 6½ per cent, and our consumption of wool over 16 per cent. Wool manufacturing is all upset just now by tariff uncertainty, but stocks of woolen goods are low and prices of wool have for months been on a free-trade basis. The conclusion is irresistible, that manufacturers will be kept extra busy when times do start up, and it seems as though prices must then improve.

Better Prices for Wool depend both on the supply and on the demand, or condition of the manufacturing industry. The latter cause has depressed prices of domestic wool in the United States far more than the supply, during the last year. Our imports of wool have been only about one-quarter as much in the nine months ended January, 1894, as in the corresponding period of the year before. But many of our factories have been shut or on short time; hence an average decline in the value of domestic wool at Boston and New York of about 20 per cent since July last, while Australian wool has declined only about half as much in the London market during the same time, and English wools have held their own.

The Actual Decline in wool values to the American grower has doubtless been much greater than 20 per cent. Even with free trade—and it remains to be seen whether the Wilson tariff is to be enacted—Australian wool at 15 cents in London must cost 18 cents to the American manufacturer. With only the slightest improvement in business, prices would advance, so that here again we find no ground for a further decline, even with free wool.

The Reduced Supply of Wool is notable. In nine months ended April 1st, United States imports of wool were less by 100,000,000 pounds than in the like period of the previous year. All estimates agree that our domestic clip was at least 30,000,000 pounds less in '94 than the year before. The prospect is that we shall enter upon July 1st with receipts of foreign and domestic wools less by 150,000,000 pounds than the supply of the previous 12 months. Even with the paralysis of manufacturing, consumption is not one-third less, so that apparently the supply of wool in the United States has not for years been as light at this date as it is to-day.

Nor has Europe a correspondingly increased supply. Her stocks on January 1st last were only 50,000 bales more than a year previous.

The Clip of 1894 is certain to be considerably less than last year, because of a large decrease in numbers of sheep and poorer care. The commercial estimate of 364,000,000 pounds of wool as the United States '93 clip, was based on 7½ pounds per head on the number of sheep returned by the department. On the same basis, the clip of 1894 would be about 330,000,000 pounds, but good judges see no grounds for expecting over 300,000,000 pounds of American wool this year.

Crop Condition and Outlook.

Following is a synopsis of the crop bulletin for the past week issued by Director Barwick, of the State Weather Service:

The average temperature for the week ending June 25th was: For San Francisco, 54 degrees; Red Bluff, 70; Sacramento, 65; Fresno, 72; Los Angeles, 64, and San Diego, 60. As compared with the normal temperature a heat deficiency is shown as follows for the places named: San Francisco, 6 degrees; Red Bluff, 6; Sacramento, 5; Fresno, 5; Los Angeles, 5, and San Diego, 6.

The continued abnormal deficiency of heat over the entire State has retarded the ripening of fruits and grain, thereby preventing grain harvesting from being rushed, as the grain does not ripen as fast as it can be cut. But what has been reaped and thrashed by the combined harvesters gives a very decided surprise to the grain-growers, as the yield is beyond their expectations, both in quality and quantity. The total yield of the State will be but a small percentage below the usual average. The fruit prospects are most excellent for big yields of all varieties. There has been no north winds to push forward the fruit so rapidly as to glut the markets. This is very favorable to the fruit industry.

Beans have suffered somewhat from the continued high winds in Ventura and Santa Barbara counties.

The sugar-beet crop in San Bernardino, Monterey and Alameda counties is doing finely and showing a good percentage of sugar.

The second crop of alfalfa hay is being secured in fine condition, and all hay cut since the rains ceased has been of the finest quality.

Hops are doing extremely well and are free from any disease whatever.

Highest temperature, 104, at Huron, Fresno county, and the lowest, 36, at Adin, Modoc county.

THE East Indian wheat men seem to be applying the most rational treatment to a surfeited English market. We read that even as late as the middle of June the arrivals of Indian wheat at Hull are so small that the Corn Trade Association of that town are unable to make up adequate standards. The London Corn Trade Association, at their meeting about June 11th, made up a standard for soft red Calcutta wheat, but eight other qualities were left undetermined for the same reason as at Hull. The *Mark Lane Express* remarks that the effect of the present extremely low prices has told on India sooner than on any other of the competing shippers to the United Kingdom. Now, if the East Indians should get perfectly shocked at the low prices and conclude to eat up their own wheat it would help matters all around.

AGRICULTURAL SCIENCE.

Nitrogenous Fertilizers and Soil Nitrogen.

We gave in last week's RURAL an interesting outline of the recent discoveries in the way in which leguminous plants minister to soil fertility by fixing atmospheric nitrogen and rendering it available for plant nutrition. This is a scientific declaration of the philosophy of a practice of restoring land by the growth and turning under of legumes which has prevailed for centuries. The practice of the moist regions of the earth does not apply to the arid regions of California, because the clovers which are largely used for this purpose do not grow so well here unless irrigated. It is necessary that we should have a legume of good winter growth which can be plowed under early enough in the spring to decay before the soil becomes dry, or else the mass of loose undecayed material in the soil becomes an injury rather than a benefit, because it renders the soil more dry and accelerates evaporation from lower strata.

The Agricultural Department of the State University has had this need of the State under inquiry for many years, and has introduced and tested several legumes which promised to meet the local need. Prof. Hilgard of the University has just observed the local behavior of a newly introduced plant which seems to promise much, and he comments upon its character and probable significance as follows:

It has been well said that at this time the king problem of agricultural chemistry is the cheap conversion of the nitrogen gas which constitutes four-fifths of our atmosphere into a form available for the fertilization of land. For, abundant as this substance is in nature, its restoration to soils exhausted by cropping is as yet the most expensive return which the farmer has to make. The supplies of the other two chief ingredients of fertilizers—potash and phosphoric acid—are relatively abundant and on the increase; but as yet we know of no source of nitrogen that promises to reduce materially its cost to the farmer, which is now over three times that of either of the two others per pound. The prospect that within a short time the entire nitrate deposits of Chile will be in the hands of a syndicate, which can exact "all the traffic will bear" for Chile saltpeter, renders the question of nitrogen supply to soils doubly interesting to the farmer at this time. Frequent questions addressed to the Experiment Station on these points render it desirable that the results of some work lately done in this line should be briefly noticed, in advance of publication in the Station report, soon to go to press.

It has been known for some time that while the larger number of our cultivated plants, and among them particularly the grains, must derive all the nitrogen they need from the small store in the soil (where it is contained in the "humus" or black mold), there is one group of plants which not only do not impoverish the soil in nitrogen, but on the contrary, if used for green manuring, add materially to its store, so as to replenish the supply when required for grain culture. It is the plants comprised within the pea family (leguminous plants, or "legumes"), embracing, besides the pea, beans, clovers, vetches, lupins, etc.; also the acacias and related trees. Hence the clovers have from time immemorial been used for land improvement; while where the climate is unfavorable to these, other plants of the same family have been substituted for them. In this State, where alfalfa is the general substitute for clover, the difficulty of plowing-in a well-set alfalfa crop, and of getting rid of it when a clean field is wanted for other crops, has stood in the way of this very needful means of supplying the land not only with nitrogen, but also with humus, so necessary as a general soil-ingredient and so commonly deficient in the lighter class of California soils used preferably for fruit culture. The growing of green crops not of the leguminous tribe, merely for the sake of supplying humus, and returning only what was taken from the soil, has usually proved an unprofitable investment.

Until within a few years the cause of the peculiar ability of the legumes to take nitrogen from the air during their growth was not understood. It is now known that it is accomplished through the agency of one of the many minute organisms called bacteria, which produces knotty excrescences on the roots of these plants, that swarm with these minute organisms, which take up nitrogen directly from the air; while the plant in its turn takes it from them for its own purposes. These root excrescences or tubercles may be easily observed by any one making a careful examination of the roots of clover or peas.

For a number of years past the Station has been making observations on plants suitable to this climate, that should combine the needful qualities for green manuring in place of clover. This is of special interest in the case of orchards, in which it has often been noted that, after having been kept completely free from weeds for a number of years, their production decreases in a marked degree, despite of fertilization, while at the same time the soil is difficult to keep in good, loose tilth.

At first it was hoped that among the native clovers and lupins some might be found suitable for the purpose, but thus far the bur clover—a foreign immigrant—has seemed to answer better than any of these; an objection being, however, that it yields but a relatively small amount of herbage, and is apt to remain as a troublesome weed.

This season, in examining a number of the foreign legumes grown in the University Economic Garden, two were found whose roots are fairly incrustated with tubercles, implying a very rapid absorption of nitrogen from the air. One of these has been so far investigated as to render it a hopeful subject for trial on a large scale, and all available seed has been sown in order to produce a supply for distribution next winter. Experimental plots

have also been sown at each of the four culture sub-stations, so as to test the plants in their several soils and climates this season.

So far as the small-scale test shows, this plant combines the advantage of quick development (being an annual), with an unusually heavy production of herbage, the latter having in two different plots been at the rate of 24 and 26 tons per acre, equal to about five tons of air-dry hay. While its nitrogen percentage is not as high as that of alfalfa or clover, its aggregate nitrogen product would nevertheless be considerably greater than in the case of alfalfa, and more than twice as great as with bur clover.

This plant having no common name, and its botanical name of *Tetragonolobus purpureus* being rather too intricate for common use, I propose to call it the "Square-pod pea," its pod being four-sided and winged. It is a native of southern Europe, where it is grown for ornament, and also for the use of the green pods as a salad. Its taste is agreeable and would doubtless suit the palate of cattle as well as that of man.

Further experience, however, must be awaited to determine its suitability for the requirements of practice. While it produces seed abundantly, the peas are rather large—about like sweet-pea seed—and may be somewhat costly when a heavy stand is wanted for green manuring, at the rate above mentioned. But it would seem as if, sown in January, it would be ready to be plowed in about the middle of May.

Much has of late been said about the mistaken policy of direct green manuring in place of feeding the fodder to stock and using the manure produced. This is all right when cattle are at hand and manure can be made; but the fruit-grower, at the present time, cannot make this combination in most cases, and thus far the methods of manure preservation are commonly so far from perfect that, as matters stand, he will usually find it more profitable to plow in the crop for the benefit of his main product.

Another point of interest in connection with the supply of soil-nitrogen in the arid region has lately been developed by the work of the Stations. It having been observed that the light sandy or powdery soils so characteristic of our fruit growing mesas are very poorly supplied with humus, the natural inference was that, since humus is the repository of the soil-nitrogen, these soils were poor in that essential ingredient. A further inference was that, when these otherwise rich soils began to fall short in production, nitrogenous fertilizers were first in order. The recommendations made accordingly, having in a number of cases failed to produce a satisfactory result, the cause was sought for. Investigation revealed the entirely new fact, that the humus of the arid soils contains on the average more than three times as much nitrogen than does that of the region of summer rains; and that, therefore, the supply of soil-nitrogen is very nearly the same in both regions. This fact has very direct practical bearing upon the most profitable manner in which the farmer may apply what money he spends for fertilizers, for it is obvious that he should first supply that which is immediately needed, and not those ingredients of which there is a surplus in the soil.

A notable example in point has just come under observation. Owing to the deficient rainfall in southern California, alkali salts have appeared on the surface at numerous points where ordinarily none are seen, and injury has been done to certain crops quite unexpectedly. Such was the case at some points on the experimental tract of ten acres on the Chino ranch, right where some of the richest sugar beets have been grown and where the same crop now shows up in excellent condition. It was thought interesting to examine the alkali that made such a marked exception in favor of the sugar-beet crop. It was found that the first foot of soil from the surface averaged three-tenths of one per cent (.33%) of soluble salts, which, as usual, rise to the surface, and accumulating there may damage especially young seedling plants.

Analysis revealed the surprising fact that while the bulk of the soluble salts or alkali consists of the usual ingredients—common salt and Glauber's salt or sulphate of soda (white alkali)—no less than 12 per cent consists of Chile saltpeter (nitrate of soda). Calculating this to the usual weight of an acre of such soil to the depth of one foot—three and a half million pounds—we find that this mass of soil contains no less than 1400 pounds, or nearly three-fourths of a ton, of Chile saltpeter. This, at four cents per pound, the usual price, represents the handsome sum of \$56 per acre in Chile saltpeter alone. While we may still wonder that so heavy a dose of this fertilizer should in California permit of the production of the very highest grade of sugar beets, while in Europe its use is closely limited for fear of deterioration of their quality, we may at the same time congratulate ourselves upon the extraordinary fund of fertility existing in such lands, which seems to postpone indefinitely the necessity of the replacement of nitrogen withdrawn by crops; for what is contained in the first foot of soil is but a fraction of what we may fairly presume to be present in the entire soil mass reached by the tap-root of the beet, and at the same time the supply is being constantly replenished by natural processes.

It was hardly to be contended, in the face of such facts as these, that the farmer should follow the invitation of some fertilizer manufacturers to use "complete fertilizers" without regard to the nature of the soil or crop. Coal has in this century been carried to Newcastle, but it was not done for the benefit of the coal miners.

Eastern Nurserymen and Quarantine.

At the convention of the American Association of Nurserymen, held in the city of Niagara Falls, N. Y., President U. B. Pearsall of Fort Scott, Kan., criticized the quarantining of Eastern stock by California, Washington and Nebraska, and urged a constitutional amendment for free-trade intercourse among the States. This quarantining of nursery stock has, it is claimed, amounted almost to a confiscation in many places.

THE DAIRY.

Pampas Grass—A Forage Plant, Etc.

TO THE EDITOR:—In response to your request for data in regard to my efforts and their results so far obtained in studying the "king of grasses," it gives me pleasure to state that my expectations and theories are more than realized.

The ornamental features of the pampas grass are alone familiar to the people of California; that is, they put a bunch of plumes in a cracked jug, let them accumulate dust and become anything but a thing of beauty. They become dryer and more combustible daily. Forgotten and forlorn, some day a stray match finds their corner, a flash follows, and thereafter pampas is condemned.

We send 2,000,000 of pampas plumes to Europe every year. If the American idea were correct, there would be Europe in ashes long ago. But Americans do not know how to use or care for pampas plumes, even in their whole state; of this later.

I made two entries of pampas in the Agricultural Department of the World's Fair: First, pampas plumes and their uses; second, pampas grass, a forage plant, and its uses. Of this latter I will write you to-day.

Judge Fox of Oklahoma was given the task of examining my grass. I placed in his hands a bunch of green grass, which he handed on to Prof. Wiley of the Government Analytical Department, Government building. I gave Judge Fox a history of the grass on its native heath, the pampas plains of South America, where the finest wild cattle of the world subsist upon this grass; informed him that the fibre of the husk will make rope; the plumes will make bank note paper, as they cannot be destroyed by water. All this, fortunately, he knew from his own friends living in South America, while I had reached my conclusions by experimenting.

The grass in low lands grows luxuriantly, as in Southern California under irrigation, while on dry uplands it grows from 18 to 28 inches; also where it is cut down by frost in winter it springs up in the spring and is smaller in size. The grass is perennial and is planted in America as far north as Kentucky for ornament. I know of plants in Connecticut. In the French florists' exhibit on the east side of the Woman's building were eight pampas plants brought from France among their choice ornamental shrubbery. These plants showed their appreciation of home surroundings by sending out plumes about eight or ten inches long last September.

The analysis of the grass showed life-sustaining properties in excess of alfalfa. This grass should be planted on our dry plains and hillsides during a rainy winter. When once established drouth will not affect it. The large dooryard plants can be subdivided into many small roots about three inches in diameter. A deep hole should be dug and the root placed—same as in tree planting—and given water. This industry, if fostered, will be most valuable to California—with forage, rope-making, paper making—and I am now experimenting on another use that will make the plant still more valuable.

In every part of the United States this plant may be grown. The roots are very long and of such a nature that people could subsist upon flour made therefrom. I consider every plant in California of great value to the State. It would be well to begin by setting a row around a pasture fence, inside, where horses can have free access to it. The grass may be cut for hay and cured the same as any other hay. It can then be cut fine with a machine for cows.

The flavor of pampas grass is like timothy, and horses are very fond of it. The Agricultural Department, in its award to me, reports favorably upon both entries.

The present plume market is limited to Europe. Our Californians at home do many things to hinder its general use.

In Chicago my pampas palace (sole memorial to Queen Isabella in Jackson Park) stood from April to November, made inside and out of pampas, with no danger from fire to itself or the California building, also largely decorated with pampas. The Mississippi exhibit in Agricultural building had pampas plumes, yet none besides mine received an award.

The Midwinter Fair committee decided to have no plumes for decorations on account of the danger from fire. In Chicago pampas even in "horses' heads" on parade was at first considered endangering life and property. This fear is greatly intensified when you consider that cotton bunting, paper and canton flannel are fireproof. But, then, these are bought at stores, and pampas is only grown by the poor, deluded toilers or cultivators of the soil. It will be a grand day for our country when agriculture and horticulture will be elevated to respectability, or even to an equality with "trade." Not so now.

The pampas grass deserves better treatment at home, where we cultivate beauty and utility. The golden orange and golden poppy grow side by side, yet this king of grasses—monarch of all—is seen with his crown of gold and his throne of green. HARRIET W. R. STRONG
Ranchito del Fuerte, Los Angeles Co.

Use Better Cows.

A correspondent of *Hoard's Dairyman* strongly enforces the advice which the RURAL has frequently given to dairy-men, that they should embrace present opportunities to get much better cows than they are now milking. We quote as follows:

Twenty years ago the maximum product of Jerseys was about 14 pounds of butter per week. Since that time intelligent breeding has made it possible to produce from the same breed of cows individual records of 4½ pounds per

day, and even more. There are few good Jersey herds of to-day in which there is not one or more cows that surpass the highest record of a quarter of a century ago. In 1865 a Holstein cow from the royal stables is mentioned as giving "the enormous yield of 6142 quarts (12284 pounds) in a single year." Two years ago the cow Peterje 2nd, owned by a Mr. Whipple at Cuba, N. Y., produced 30,100 pounds of milk in 12 months, two and a half times as much as the greatest record of 1865. Twenty years ago the highest product of that now recognized great breed, the Ayrshire, was about 8000 pounds milk in a year, that produced about 300 pounds of butter. Now the maximum production of the best cows of that breed is about 20,000 pounds of milk, and very close to 1000 pounds of butter, in a year, and the average yearly production of the better class of herds of that breed of to-day is from 7000 to 8000 pounds per cow, nearly equal to the highest individual record of twenty years ago.

This wonderful increase is not the result of chance, or the product of feed alone. It is the legitimate result of the American spirit of progress that has produced such wonderful results along other lines. The American breeder has accomplished more in scientific breeding in the last two decades than has been done by the trans-Atlantic breeder in as many centuries. The question of to-day is not which breed has produced the highest results, but what breed, or combination of breeds, shows strength of constitution and such other breed characteristics as give the greatest promise of possibilities for future development. The one at the head of the procession to-day is not of necessity the leader of to-morrow, or next year. Wonderful as are the results attained to this time, the limit has not yet been reached. The horse that wins the race to-day may be at the distance pole to-morrow, and this is even more true of the cow than of the horse. What the dairyman of to-day wants is not maximum individual records alone, but general average—that cow that on fair average dairy feed will give the largest average returns; the one that can be depended upon to impart her good qualities to her offspring, and that can be bred with some certainty as to results.

The surprising thing of to-day is that so large a proportion of the dairymen in this country fail to avail themselves of the great advantages within their reach, that come from the great improvement in the dairy breeds that I have mentioned. They have all cast aside the sickle and scythe and snath, or "Armstrong mower," for the improvements in harvesting machinery, to be used on their farms, but still cling to the old scrub cow, that cannot produce more than 150 or at the outside 200 pounds of butter per annum, and that ought to be classed with the old scythe and sickle, and with them become a thing of the past. Good second-class full-blood bull calves of almost any breed, that are better than the best of the same breed of twenty years ago, can be had almost anywhere for \$25—and whose female offspring from any good fair dairy cow is worth the cost of the bull more than the ordinary native of the same age; in short, a bull that will return his cost to the owner in every heifer raised from him. The world moves, and the only trouble with the average dairyman and farmer of to-day is that he don't move with it.

The Tuberculosis Matter.

If there were in California a State Veterinarian, as there ought to be, his duty in the present issue of tuberculosis would be quite plain; as things are, the supervisors in each county alone have the power and the funds for the work that ought to be done. The *Sacramento Record-Union* says:

It would seem to be the dictate of the commonest prudence for the Board of Supervisors of this and every county in the State to set on foot the most thorough inspection of all milk herds, and indeed of all herds in domestic confinement. No matter what the cost, this inspection ought to be had, and the people will gladly and unanimously approve it.

Moreover, there should not be sent out one skilled man in a district to make this inspection, since it places upon an individual too great a responsibility, and besides it opens the door of inspection that heartless owners may "fix" the inspector. So not less than two should be set to work together, and there ought to be at least two of these groups in this county.

If such inspection of Sacramento herds should result in the discovery that all milk cows here are free from disease, the compensation will be ample for all the cost, no matter how great, and the people will not regret a penny of the outgo. If, on the other hand, diseased animals are discovered, under the law they may be killed, and all animals that have been in the herd with them will be isolated, and the people will be doubly thankful for the inspection, and only experience regrets that it was not earlier ordered.

The Supervisors ought to act at once. There are no economic considerations that should stop them. The failure to act because there may be no immediate fund to draw upon will not be accepted as an excuse. The matter is too important to child and adult life to be postponed or put aside or quibbled over. Indeed, tuberculosis among dairy cows is a greatly more common and dangerous thing than the majority of people suppose and more serious by far than we have undertaken to indicate. There is no need to alarm the public, but it would be criminal folly not to warn it that failure to examine milk herds occasionally, as is done in New York with success, is inviting one of the greatest of dangers to the human race. In the absence of inspection, there is but one thing to do to make assurance sure, and that is to use no milk for any purpose until it has been sterilized, the simplest form of doing so being to bring the milk to the boiling point. It is not necessary that it should more than "strike the boiling point," as the saying goes.

The secretary of the State Board of Health expresses the opinion that inspection will not be satisfactory except there is application of the tuberculosis test that is used to dis-

cover the presence of the tubercle bacillus in the animal. The Tuberculosis Committee of the United States Medical Association, A. W. Clement, V. S., chairman, recently reported that tuberculosis is world-wide in its distribution, and affects nearly all classes of animals; that the disease is notoriously hard to discover in living animals, except it is far advanced, and superficial inspection is therefore unreliable; that the only certain examination is made with tuberculin.

It is added that the disease is spreading rapidly, and that cases occur almost everywhere, and that it is transmitted to man through the meat and by the milk and by living diseased animals to healthy ones. In some instances the disease spread with amazing rapidity through a section or a State, and again the progress is gradual and slow and a herd may harbor it a long time before it is discovered. The finer grade of cows appears to be more susceptible to tuberculosis, as if breeding for fine grades reduces resistant ability.

Tuberculin, referred to above, is a substance employed on cattle as a diagnostic agent. When a proper dose is administered, a febrile reaction occurs in a diseased animal, while no effect is produced upon a healthy one. While not an infallible test, the experiments of Eber, Koch, Clement and others prove that it is accurate in 90 per cent of all cases diagnosed.

The diseased animals being removed, later on the remainder of the herd can be tried again with tuberculin, and the likelihood is that the 10 per cent will be thus reduced to a still lower figure.

New York was the first State to go about the eradication of tuberculosis in cows systematically, and it has had gratifying success thus far, the laws arming the authorities amply to enable them to enforce disinfection of stables and yards and the removal of diseased animals, payment for those destroyed, and to apply penalties for failing to reveal and report diseased animals.

A New Feature for the State Fair.

TO THE EDITOR:—We herewith inclose an additional class that has been added to the cattle department for competition at the State Fair. The intention is to give individuals a general sweepstake prize in addition to the regular class.

EDWIN F. SMITH,

Sec'y State Board of Agriculture.

Sacramento, June 15th.

CLASS X—GRAND SWEEPSTAKES.

Judged Thursday, Sept. 13 h (after parade). Open to all classes. No animal will be permitted to compete in this class that is not registered, or eligible to registration, in the respective herd books. The same animal cannot compete for both awards. Entries close same time as other classes. Entrance ten per cent, added.

BEEF BREEDS.

BULLS.

Best three-year-old and over.....	\$30 00
Best two-year-old.....	20 00
Best one-year-old.....	15 00
Best bull calf.....	10 00

COWS.

Best three-year-old and over.....	\$30 00
Best two-year-old.....	20 00
Best one-year-old.....	15 00
Best heifer calf.....	10 00

N. B.—The American Aberdeen-Angus Breeders' Association will duplicate all premiums in this class and award \$100 in the herd sweepstakes, if won by the Aberdeen-Angus breed.

MILK BREEDS.

BULLS.

Best three-year-old and over.....	\$30 00
Best two-year-old.....	20 00
Best one-year-old.....	15 00
Best bull calf.....	10 00

COWS.

Best three-year-old and over.....	\$30 00
Best two-year-old.....	20 00
Best one-year-old.....	15 00
Best heifer calf.....	10 00

The committee, in judging for milk breed awards, may require all cows in milk to be milked at a designated time, and the milk weighed and tested for percentage of butter fat.

Skimmed Milk for Pigs.

We recently commented on the importance of the pig annex to the dairy. Its importance depends much upon how the affair is managed. How much is the skim-milk worth which is fed to pigs? is quite a question now in Eastern creameries. The following comments by Prof. Henry in the *Breeders' Gazette* are interesting:

Can we afford to pay twenty cents per hundred for skim-milk to feed pigs with hogs selling at four and one-half cents per hundred, live weight?

As a bare proposition with no contingencies, I would say yes. For young pigs the feeder can find nothing equal to skim-milk. It gives them a start that nothing else can. For such, feed three pounds of skim-milk to one of cornmeal. A mixture of half cornmeal and half shorts is perhaps more satisfactory from a practical standpoint, though not theoretically. I think shorts are less harsh in the young pig's stomach. Certainly pigs fed shorts and milk do wonderfully well, while theoretically cornmeal is the complement of the milk. As the pigs grow older, unless there is milk in abundance, reduce the proportion of milk gradually.

One pound of milk to each pound of grain with fattening hogs makes the grain wonderfully effective, and even a half a pound of milk to one of grain will show good results. Under favorable conditions, where there are no serious losses or accidents and everything goes right, one can easily get 20 cents a hundred out of his skim-milk, after

a reasonable allowance for cost of all the grain, with hogs at 4½ cents live weight. But it is not fair to allow the skim-milk all of its values in such cases. A part of the value comes from combining it with the corn or other feeds, and these should be credited somewhat above their market value when used in combination. Again, losses are almost sure to occur in handling stock, and all the theoretical value of the feed cannot be allowed in purchasing it. Fifteen cents per hundred is therefore, I think, as much as one dare allow for separator skim-milk. Skim-milk from deep setting as ordinarily conducted leaves more fat in the milk, and home-made skim-milk is often superior to that of the creamery for pig feeding. Too many creameries allow their skim-milk tank to be germ-breeders and all sorts of ferments grow there. Then, too often, the washings of the factory are sent up into the tank, and this further reduces the value of the milk through dilution. I know of creameries where I should consider ten cents per hundred a high value for the skim-milk, owing to dilution and the filthy condition of the tank.

POULTRY YARD.

More of Mrs. Wear's Experience.

TO THE EDITOR:—I have received so many letters asking about my fence, etc., as recently described in the *RURAL PRESS*, that I offer you the following supplementary statement:

Poultry raising is a very fascinating business to those loving fine birds and pets, but to those who go into the business for money alone there are many drawbacks. Although a good poultry yard properly run is a paying investment, there are many things to contend with, such as lice, roup, and loss of little chicks when hatched. Experience is the best teacher in this case, although advice is good if followed; but most people shirk hard work, and there is lots of it in raising poultry. It is a business, like everything else, that has to be attended to to be successful. If it consisted in buying fine stock and turning them in the yard and waiting for them to make a fortune in a short time, a person would be rich so quickly that there would be no sales for stock. It is only the persistent ones that stay with raising fancy poultry, and they generally make it pay.

You wished to know what I thought the best feed for general use. I say pure wheat, although more expensive, is cheapest in the long run. You can boil it for soft feed, using bone meal mixed in and red pepper. Feed wheat dry at night; scatter it among litter and make them scratch for it. Give the scraps from the table, with some green feed, if you want eggs.

My plan for little turkeys is to keep the mother confined in a coop until the little turkeys are six weeks old, letting the little turkeys run in and out on the lawn. They must have green feed and bugs. I feed them corn bread, crumbled dry. It is made with bran and meal, mixed with a little salt, pepper and bone meal mixed in it. Bake it. Use milk for wetting it up. I give this feed for the first few days, giving them all the milk they will drink, with green onions chopped fine. At night, feed a little cracked wheat. You must be careful not to overfeed them. Only give what they will eat up clean each meal. I give in summer from 25 to 40 chickens to one hen. Keep her in a coop the same as turkeys. In winter I give each hen only 15, as they cannot keep more than that warm.

My breeding pens are 10x50 feet in size, some larger. I never have over 15 laying hens to each pen.

I spray once and sometimes twice a month with pure coal oil, which kills everything it touches. I use mercurial ointment on both young and old fowls, which is a sure cure for lice. By following the above plans you will have good luck, still there are many things to do which observation and constant watching will teach those who love their flock of poultry well enough to stay with them and see what is needed. My chickens all know me and are just as gentle as can be. I can't bear a wild hen that flies out every time you go near her nest. I hope the enclosed answers will be of service to you, and I think, if followed, will be.

Bakersfield, Cal.

MRS. F. WEAR.

The Men for the Poultry Business.

A writer for the *Palermo Progress* has this to say about men as connected with the poultry business:

We have sometimes thought that men who were carrying on a poultry business were inclined to be a little ashamed or sensitive about it. Often we hear the concern carried on in the name of some high-sounding company, while the name of the proprietor is kept in the background. This does not apply so much to the "fancier" as the man who has perhaps changed from dry goods or groceries, or as a bank clerk to a poultryman. Fanciers, as a rule, are "in it" for a combination of a love for it and the dollar. No man was ever a successful fancier—i. e., a breeder of fine fowls—unless he had an intense admiration and love for choice poultry, irrespective of what he could make out of it. And we fail to see why any one, man or woman, should not be proud of a business that requires for its successful management those qualities of industry, skill, forethought, etc., that in other occupations are universally conceded to be creditable to the parties putting them in action. Both Old and New England poultrymen have done much in the past twenty-five years to aid the man who starts in poultry-keeping at this time in California. The climatic surroundings of these men have compelled them to devise means to overcome difficulties unknown in this mild climate. They have perfected numerous appliances that are now available by the up-to-date poultrymen. If he will post himself on their use and utility we need only mention the incubator and brooder, the egg tester, the bone mill and bone cutter, the clover cutter, the rock breaker for preparing grit, various kinds of meat mills, insecticides and sprayers to apply them. These things have advanced the

business to a point undreamed of a few years ago. Then it was doubted if 500 fowls could be kept in one concern with profit. It is no unusual thing nowadays to find ten times that number under one man's control. But it requires brains, some capital, and above all, steadiness of purpose and persistence. The "Pedro Farmer" is not in it; it is not for the man who goes to town to buy twenty-five cents worth of nails, spends two dollars for whiskey and talks politics all day. Those men can do better hoeing trees with a vineyard hook, with the thermometer marking 110°, or making hay, or chopping wood; they will find it easier and more in their line.

Poultry Poisoning.

TO THE EDITOR:—I read the account of the disaster in a poultry yard by chickens eating potato beetle in your valuable paper dated October 4, 1890. Is the beetle upon the growing potato vines poisonous to chickens? Are not these beetles sprayed with Paris green or some other poison? For an answer through the PACIFIC RURAL PRESS or by letter I will be thankful. Very respectfully,
L. Y. CHIASHI.

The causes of the disaster to which our correspondent alludes were never fully cleared up. We imagine the suspicion that it was due to eating poisonous beetles was due to Eastern experience in that line. The potato beetle once so ruinous at the East has never been found in California. Insects sprayed with Paris green might kill hens if enough of them were eaten. We have seen no record of such experience, however.—ED. RURAL.

THE APIARY.

Central California Beekeepers' Association.

TO THE EDITOR:—I herewith send you a report of the Beekeepers' meeting. Will you please give it, or as much of it as you think best, a place in the columns of the RURAL PRESS. J. F. FLORY, Secretary of Central California Beekeepers' Association, Lemoore, June 18.

The first quarterly meeting of the Central California Beekeepers' Association met at Hanford June 6th. On account of the rain the day before, and the threatening aspect on the day of the meeting, only a few were present. C. F. Flory was called to the chair.

Honey Cans.—The secretary read a letter from Geo. H. Tay & Co., 610-620 Battery street, San Francisco, stating that he would furnish them to the association at 70 cents per case of two cans, f. o. b. cars at San Francisco.

Swarming.—Which is considered best, natural or artificial swarming?

It was pretty generally admitted that where bees swarm on time and enough, it is best to let them do so, but if not, and increase is wanted, artificial increase should be resorted to.

Which is the most profitable, to swarm your bees or buy them at \$1 per swarm, the purchaser furnishing the hive?

This was answered: Where the most of our honey comes during the middle or latter part of the season, it is best to swarm them, as they could be built up strong until then, but if the most of our honey flow came during and after swarming time, perhaps it might pay best to buy them.

Shaking Palsy.—Mr. J. F. Bolden of Tulare had used the 30 drops of carbonic acid to a gallon of honey, as recommended at our last meeting, pouring the honey in the hive in the evening, tipping the hive back to prevent running out, and also sprinkled powdered sulphur on the top of the frames of others. Both plans seemed to prove effectual. It is to be hoped that others will try the sulphur cure and report.

Honey Resources.—It was generally agreed that alfalfa was the leading honey plant in this valley, and that camphor weeds frequently furnished a good flow of fine honey, and that the alkali and other weeds and wild flowers frequently furnish considerable honey of a less favorable grade.

After a recess of an hour, Mr. A. W. Filson was called to the chair.

Special Meeting.—There seemed to be a universal feeling that we should have a special meeting between this and our next quarterly meeting, on the first Wednesday in September, to consider the question, "How to best dispose of our honey." Those who sold for cash f. o. b. were generally satisfied, but many of the consignments were unsatisfactory. Parties consigning 400 cases of comb honey, and others of less number, have no returns. Quite a feeling prevailed against those commission men doing business in that way, and right here is where one of the great advantages of our social gatherings comes in. The men who deal either fair or unfair are prominently brought to public notice. On motion it was decided to have our special meeting on the first Wednesday in August, at Hanford.

Queen Rearing.—Mr. Orr thought the Doolittle method was perhaps the best, although he had never tried it.

Mr. Stearns put several frames of just-hatching eggs in an empty hive with a goodly number of young bees, and then removed a colony to another place, and put the new colony in its place and thus secured his queens.

The secretary used a modification of the Doolittle plan. He got queen cells any where and any way he could. He cuts them out and, by means of melted wax, sticks them on what he calls a slide, and puts in a frame holding from 16 to 24 slides with cells, and removes the larvae in the cells, and then transposes into them larvae from select stock. He has practiced the transposition process for 33 years and thinks more highly of it than ever.

Hives.—The size and style of hives elicited quite a discussion, as quite a variety of hives are used. Messrs. Orr

and Stearns, of Selma, both large honey producers, have used both the 8 and 10 Langstroth's frame hive, but decidedly favor the 10 frame.

Mr. Gilstrap used a 10-frame hive, two inches shorter than the L. frame, but if commencing again would use regular Langstroth frame. The secretary used a 12-frame hive. The frame was 6x15 in the clear, and he preferred them for many reasons given.

Laying Workers.—The most effectual plan given was to remove the colony some distance from its stand. Shake all the bees on the ground, replace the frames in the hive, and return them to their original place. This remedy was effectual.

Honey Prospect.—With only a few exceptions, the response was: Doing fine, when not cold and windy; yet having an unusual amount of cool and windy weather, are the flowers seem to secrete honey plentifully, and are, all things considered, doing better than any year since 1883, which was the best honey year on record.

On motion it was decided to adjourn until the first Wednesday in August.

A special request is extended to one and all to bring with them samples of honey, beeswax, hives, honey boards, queen nurseries, cell protectors, sun extractors and any and every thing of value or curiosity to the fraternity or visitors.

J. F. FLORY, Secretary.

J. H. HART, President.

FRUIT PRESERVATION.

Australian Experience In Pickling Olives.

Our readers who are still in the hunt for satisfactory ways of pickling olives will be interested in the following chapter of South Australian experience as given recently by Dr. Cockburn. He said that at present the demand for preserved green olives in South Australia did not warrant any large expenditure in its production, but if any one could put on the market a really excellent article, he felt sure that the demand would grow. The climate of South Australia was particularly well adapted to the growth of the olive, and the product of this colony should be second to none in the world. As a medical man he attached great importance to the olive as a means of health. The olive was a wonderful stimulus to digestion, and he found it an invaluable remedy for biliousness. South Australians had not yet learned how to study the climate in their diet. They had yet to learn that meat should not form the chief article of diet in a country like South Australia. He had for years carried on experiments with a view to finding the best methods of preserving the olive. The process of preserving the olive was simple, but the recipes given in books were, as a rule, fallacious. The berries should be picked carefully by hand just before they began to lose their bright green color, and those with the slightest bruise should be rejected, as they would not keep.

There are three modes by which the olive could be successfully preserved in the green state: 1. By a lye made of wood ashes and lime. 2. By a lye made of carbonate of potash and lime. 3. By a lye made of caustic potash. 1. The lye was composed of three pounds of dry sifted wood ashes and six ounces of quicklime to one gallon of water, boiled for half an hour, with occasional stirring, in an enamelled iron pan, and when cold the whole was poured over the olives, which had previously been placed in an earthenware or wooden vessel. They should be covered with a cloth and placed in the shade; bright light destroyed the color. They should remain in the lye until the acid taste peculiar to the olive completely disappeared. This would require a period of about forty hours, more or less. The period varies according to—(a) The variety of olive to which the berry belongs. Some sorts yielded their acidity very readily, others were exceedingly intractable. (b) The length of time that the berries had been picked. If they had been gathered some days they were greedy of moisture, and sucked in the lye with avidity, so that a weaker lye would suffice than when they were fresh; for this reason it was well to place the berries, if they were dry, in water for a few minutes before pouring in the lye. (c) The period required also varied according to the quantity of lye used; the acid in the berry rapidly neutralized the alkali in the lye, so that if the lye were weak a greater volume was required than when it was strong. (d) The size of the berry had also to be considered; the larger the berry the longer the period required. The fruit, therefore, should always be graded and treated in separate lots, consisting of berries of nearly uniform size. It was in determining the period that the olives were to remain in the lye that the only difficulty in preserving olives presented itself; if not left long enough the acid taste concealed the nutty flavor. If left too long the berry became soft, turned yellow, and would not keep. In removing the berries from the lye, a wooden spoon and plenty of water should be used. After thorough washing, the olives were placed in water and covered with a cloth and kept from bright light as before. The water was changed thrice a day for two or three days, and when the alkaline taste of the lye had been washed out they were ready for bottling in brine. The brine was prepared by pouring a gallon of boiling water over about one pound of salt. This was allowed to stand until cold, and should completely cover the olives. The brine should be as strong as the berries would stand without becoming shrivelled. The main points to be attended to throughout the process were to preserve the color and get rid of acidity without injuring the firm texture of the fruit. Any metallic impurity destroyed the color. The lime should be what was known by builders as "fat." The ashes used in preparing the lye should be rich in alkali. Gum timber ashes were suitable, but those from mallee root yielded poor lye. In making the lye, whether from ashes or potash, the lime has no direct influence on the olive. Its action consisted merely

in converting the carbonate of potash into hydrate or caustic potash, which is the efficient agent. It was found that a lye composed of caustic potash dissolved in water yielded good results, the strength being from three to four ounces of commercial caustic potash (15 a pound) to one gallon of water.

HORTICULTURE.

Dates in the Sahara.

The oasis in the Oued Ris consists mainly of palm trees sheltering other trees. There are more than 660,000 palm trees and about 100,000 fruit trees. The date palm is the great nutritive product and feeding medium of the Sahara; without it the plains would be everywhere desert. Fortunately, it requires for its perfect maturity and the prime quality of its fruit those very conditions which the Sahara alone possesses—torrid heat in summer and intense dryness of the air. It thrives in the most arid soil, but it must have water, and plenty of it, at its roots. And this is the singularity of the Sahara, aptly called the land of thirst, that it conceals treasures of irrigation, and that it is only on these spots where the treasure can be easily obtained that the clusters of palms are found. There are male and female date palms. The latter bear large clusters of fruit, which, however, never attain development and maturity unless they have been fecundated by the pollen of the male tree. In order to make sure of their harvest, the natives themselves perform on the trees the necessary amalgamation during the month of April. One male tree can fertilize 400 female ones. The Sahara produces many kinds of dates, as varied as our own apples and pears.

The delicate, transparent date known as *neglet nous* is the most choice fruit, fetching the highest price. It is at all times the rarest, changing its nature from one region to another, and being more than any other dependent upon the character of the soil and the climate where it grows. The remaining varieties, although numerous, can be divided into two classes—the soft dates that are compressed between goat skins and sold in cakes on the Arab markets and are consumed by the poorer classes and the dry dates, of which the nomads slip a few dozen in the folds of their burnous for their daily consumption. The cheaper kinds are almost entirely disposed of in the country and are not considered worth exporting. Like other harvests, the date gathering is subject to vicissitudes and fluctuations and prices vary accordingly. The inhabitants of the Oued Ris have black skins and woolly hair. At a first glance they look like negroes, but in reality they are descended from the Berbers, who were a white race, but who for centuries have married the black female slaves imported in caravans from the Soudan. Their characteristics are a gentle gravity and a scrupulous honesty. Their rectitude and agricultural tastes make them more akin to Europeans than the original nomadic races.

The Esthetic in Fruit Selling.

California fruit selling at the East is taking on new frills each year. This will do to start the season of 1894. We find in the N. Y. *Fruit and Trade Journal* of last week:

The Porter Brothers Company have placed an elegant painting in their salesroom on Erie Pier 20, N. R., where they are holding daily auction sales of California fruit. It represents a train of cars going through the mountains of California with fruit for the company. It hangs directly over the auctioneer's platform, in full view of the buyers. It is quite an imposing sight now, with the beautiful decorations surrounding this place, to see the auctioneer and clerks with either N. R. Doe, representing Porter Brothers Company, or Edward Ruhlman, representing C. W. Reed, Barnett Bros. and California Fruit Association, or Horace W. Day, representing the National Fruit Association, standing to their right and zealously watching the sales. To add to this, lemonade is served to buyers at the sales of the Porter Brothers Company.

A Fruit Diet.

In a recent meeting at the Midwinter Fair Prof. Emory E. Smith said:

Do you wish to rid yourself of many aggravating bodily ills? Then go into the sunshine, throw away the nostrums with which you are being poisoned and absorb the acids, salts and oils that were intended as the natural healer and regulator of your body. Do you want bright-eyed, rosy-cheeked children? Then let your bill for fruit be twice that for white bread and meat.

We have a mission not only to raise fruit, but to teach the world that this fruit is the cheapest, the healthiest and the most nutritious and best of foods. When this has been done the question of markets will not vex us; and to the California fruit-grower the world will owe more than it can easily repay.

Another Co-operative Fruit Company.

The fruit and raisin growers of Dinuba, Tulare county, have incorporated under the name of the Dinuba Fruit and Raisin Packing Company, and elected the following board of directors: Jas. Sibley, W. B. Nichols, Wm. F. McCracken, Jos. Heathman, Jos. F. Williams, Walter Billingslea and Coner Fraser. The purpose of the corporation is to pack, store and sell fruit and raisins on a strictly co-operative basis. The capital stock is \$10,000, divided into 2000 shares, of which about 500 have been subscribed.

The board of directors organized on the 16th inst. by electing the following officers: James Sibley, Pres.; Wm. F. McCracken, Vice Pres.; W. B. Nichols, Sec.; and Jos. F. Williams, Treas.

THE HOME CIRCLE.

Apples Growing.

Underneath an apple tree
Sat a dame of comely seeming,
With her work upon her knee,
And her great eyes idly dreaming.
O'er the harvest acres bright,
Came her husband's din of reaping;
Near to her an infant wight
Through the tangled grass was creeping.

On the branches long and high,
And the great green apples growing,
Resting she her wandering eye,
With a retrospective knowing.
"This," she said, "the shelter is
Where, when gay and raven-headed,
I consented to be his,
And our willing hearts were wedded.

"Laughing words and peals of mirth
Long are changed to grave endeavor;
Sorrow's winds have swept to earth
Many a blossomed hope forever.
Thunder clouds have hovered o'er—
Storms my path have chilled and shaded,
Of the bloom my gay youth bore,
Some has fruited—more has faded."

Quickly, and amid her sighs,
Through the grass her baby wrestled,
Smiled on her its father's eyes,
And unto her bosom nestled;
And with sudden, joyous glee,
Half the wife's and half the mother's,
"Still the best is left," said she;
"I have learned to live for others."

—Carleton's Farm Ballads.

Now I Lay Me Down to Sleep.

The fire upon the hearth is low,
And there is stillness everywhere;
Like troubled spirits, here and there
The firelight shadows fluttering go.
And as the shadows round me creep,
A childish treble breaks the gloom,
And softly from a farther room
Comes: "Now I lay me down to sleep."

And, somehow, with that little prayer,
And that sweet treble in my ears,
My thought goes back to distant years,
And lingers with a dear one there;
And, as I hear the child's amen,
My mother's faith comes back to me,
Couched at her side I seem to be,
And mother holds my hands again.

Oh, for an hour in that dear place!
Oh, for the peace of that dear time!
Oh, for that childish trust sublime!
Oh, for a glimpse of mother's face!
Yet, as the shadows round me creep,
I do not seem to be alone—
Sweet magic of that treble tone—
And "now I lay me down to sleep."

—Eugene Field.

Out of the Ordinary.



ANNIE SARGENT was fifteen when her mother died; the three boys were older. Jabez Sargent never got along well with his children; he was too hasty and unreasonable.

When his wife was alive she had often prevented wordy wars between her husband and the boys. Annie did not have her mother's tact, and besides, she stood in awe of her father. So when he scolded the boys she would look frightened at first, and then run away where she could not hear their angry voices.

When Will, the oldest, was twenty-one, he went to the city to find work. He had a hard time, but the folks at home never knew about it. He was capable and determined, so two years later, when Joe came of age, Will was able to get him a good situation. Only Fred and Annie were left at home after that.

It was only a month after Joe went away that Fred had a letter urging him to join his brothers in the city. "Why should you stay on that old farm, when you might be here with us earning a dollar and a half a day at least? Talk with father about it and let me know soon."

Fred looked up from the letter with bright eyes. "What is it?" asked Annie. She was clearing up the dinner table.

"Joe wants me to go to the city. He's got a place for me, and I can earn a dollar and a half a day at the very first. Do you believe father will let me go. Where is he?"

"Out in the barn." Annie's voice sounded strange to Fred, but he was hurrying out of the door. He glanced in at the window as he passed it. He did not stop, but Annie's face haunted him. He tried to think it was the unevenness of the window glass that distorted her features, but he knew it was tears that made her eyes so bright.

"I suppose you can go," said his father, rather ungraciously, "but I'd rather you'd stay here. You can help a good deal about the farm when you are a mind to—but you ain't a mind to, most of the time."

Fred went back into the house. He was

jubilant to think that he was going, but indignant at his father's remarks.

He got a piece of paper, a pen, and the ink bottle and began a letter to his brother. He wrote it hastily and had put it into an envelope before Annie came into the room. He could not look up just then, for he was writing Joe's name on the envelope. When he had finished he said, "Father says I can go, and I am going to take this letter to the postoffice right off. I told Joe I'd be there in a week."

Annie did not speak; her back was towards him.

Half a mile from the Sargents lived old Mrs. Millicent Jennings. She was a friend to all the boys and girls in the neighborhood, and even the older people were sometimes glad to get her advice, for she had a "level head." After Fred had mailed his letter he went directly to Aunt Millie's to tell her his plans. She was sitting in the kitchen knitting, when he went in.

"Well, what is it?" she asked, looking at him, "good news I guess."

He told her the news, and she listened quietly. She was silent so long after he finished that he began to be impatient. "What do you think of it?" he asked.

"I think," she said, slowly, "that you might have waited a little before you decided to go."

"What's the use to wait?"

"You might have thought of some things that would make you feel you ought to stay at home."

"What things? I don't like the way father treats me."

"Does he treat Annie any better?"

"I don't know's he does."

"How did Annie feel when the other boys went away?"

"Blue for a week."

"Who cheered her up?"

"I tried to—father didn't seem to notice."

"It will be pretty lonesome for her if you go."

"I could write often and—"

"But you wouldn't."

"And I'd earn so much money that I could give her things she wants."

"I guess you'd find you could use all you'd earn for yourself."

"What! Do you think I ought to stay at home just for Annie?"

"Well, considering that she left school when she wanted to be a teacher, and gave up all her plans, and staid at home and worked hard just for Will and Joe and Fred—it does seem rather tough for them all to desert her and go and do what they want to."

Fred looked very sober.

"Think it over," said Aunt Millie.

"But I've written," he returned, brightening a little.

"Couldn't you write again?"

"I suppose so."

"I hope I haven't made you angry, Fredrick," she said, as he rose to go.

"Oh, no," he answered, somewhat shortly. That night at supper there was hardly a word spoken. Jabez never talked at meal times. Fred was thinking. He looked at Annie furtively. Her eyes were red, and he thought she did not eat much.

When she began to wash dishes, he took the dish towel away from her. She looked at him in astonishment. "I can wipe them," she said, huskily.

"So can I," Fred answered.

He did not sleep much that night. The next morning after breakfast he followed his father out to the barn. He was gone a long time. When he came in there was a queer expression on his face; satisfaction, regret, resentment and high resolve. He got the writing materials and sat down at the dining table. Annie was paring apples. She watched him closely.

"Want to send any word to Joe?" he asked, looking up. "I'm writing to him."

"Send my love," she said, and bent over the apples. Fred noticed, and smiled.

"Want to read it?" he asked.

"Yes," she said. "I'll wash my hands first."

"She took the letter and began to read.

"Poor little girl," Fred thought, as he looked at her woe-begone face.

The woe-begone expression did not stay long. She looked up quickly, and saw him smiling at her.

She opened her lips to speak, but choked instead. She threw her arms around his neck and hugged him tight; it was his turn to choke then.

"Oh, I'm so glad," she sobbed. "It would have killed me."

Fred had to write the letter over again, it was so crumpled up in the embrace.

This happened the last of May. When Fred told Aunt Millie about it the old lady looked pleased, and when he told her something else she laid her knitting down deliberately, walked over to him, took his face

between her hands and looked into his eyes.

"If you do it," she said, "you are a regular— Well, we'll wait and see." Then she kissed him.

"What are you reading?" asked Annie one evening.

"A very interesting book," answered Fred, gravely.

She looked over his shoulder. "The cook book?"

"Why not?"

"Don't I feed you enough? Are you hungry?"

"I have enough to eat, but I want to learn to cook. Will you teach me?"

Annie laughed. "Get a few more who want to learn, and I'll start a cooking school."

Fred looked serious. "I'm not joking," he said. "Please take me seriously for once. Will you teach me to cook?"

"What do you want to cook for?"

"I have a feeling that perhaps I am a born cook. Who knows but what I may be the genius of the family! Think of the salary a French chef gets, and do not, I beg of you, refuse to give me my first lesson."

"If you are in earnest, you can come and mix up the bread," and Annie whisked off her apron and held it out to him.

Fred sprang to his feet and caught the apron from her hand.

"Why don't you have the strings longer?"

"They are long enough for me. Here!—I'll pin it with two pins."

Fred brought a rocking chair from the sitting room, and made Annie sit in it. "Now tell me everything to do."

Fred took pride in that bread, for it turned out well, and after that he insisted on making all the bread.

His success was not so good with other things. When Annie gave him minute directions he got along all right, but when he tried to go alone he met with mishaps.

Fred kept his temper, and studied the cook book diligently. Sometimes he would take his perplexities to Aunt Millie.

"Say, Aunt Millie! I made an old-fashioned johnnycake this morning, and when I tried to turn it over it all fell to pieces; what made it do that?"

"Did the water boil when you put it into the meal?"

"Not quite."

"That is what's the matter."

Then the next time he saw her he would say, "I had the water boiling this time, and the johnnycake was A, number one."

Fred did not devote all his energies to the art of cooking. He worked with his father a part of the time, and Annie noticed, with surprise and pleasure, how well they got along together.

One evening in July, Fred said to Annie, "How long is it since you have been to see Mary Slocum?"

Mary Slocum was one of Annie's friends, who lived in the next town.

"I have not been there to stay any for two years."

"Haven't you got a standing invitation to go there and stop a month?"

"Yes, but—"

"Then write to her this very night and tell her you are coming next Friday to spend a week with her."

"How can I leave?"

"Father and I will be glad to be rid of you for a week," he said, jokingly. "I can cook—you admit that my bread is better than yours. We shall get along all right."

The end of it was that she went, and had a good time.

"But they know so much," she confided to Fred. "I felt as though I didn't know a thing, and Mary does splendidly with her school."

They were washing dishes, and Fred carried a dish away, and in the seclusion of the pantry laughed softly and said to himself, "Just what I wanted."

"Let's take a walk," Fred said, after the dishes were finished.

It was a beautiful moonlight evening, and they walked along some distance in silence. They climbed a big boulder and sat down.

"You see that building over there?" began Fred.

"The schoolhouse? Yes."

"You know how hard it is to get a teacher who will stay more than one term?"

"Yes, it is so lonesome."

"Exactly. Well, before many more years have passed, you are going to be the teacher of that school."

"Why, Fred! What do you mean?"

"Just what I say, my dear."

"How in the world—"

"Now, Annie, don't you say one word. Remember I am the oldest, and you have got to do just as I say." There was a determined note in his voice.

"You are a rather remarkable girl, and I want you to live up to your reputation by keeping perfectly silent while I explain. In

two weeks examination papers will come, and if you pass the examination—and you must—you will go to the city and study to be a teacher. You will board where Will and Joe do, and they will look out for you. Your vacations will be spent at home here, and if you are very anxious, I'll let you do some of the work then."

"But, Fred! how can I go? It will be worse than for you to go."

"There is no question about it," said Fred, firmly. "You are going. And now this next fortnight you must study hard. I'll help you what I can."

"But the money?"

"Never mind about the money—that's all fixed."

There was silence for a moment.

"Now say you are pleased."

But Annie could not speak just then.— Susan Brown Robbins.

Fashion Notes

Bodices have absorbed all the decorations which skirts have discarded as a compensation for their simplicity, and are more trimmed than ever. Any method of producing variety in dress which does not entail a lot of expense is hailed with delight by the majority of women. And another novel idea among the many of recent invention is to have a velvet yoke and sleeves, which may be taken off and put on at will. With adjustable sleeves, yoke, revers and a few silk waists no end of changes can be rung on one gown. Most all bodices are made with round waists and finished with a soft band of silk fastened with a buckle or a bow. The fancy for buckles has developed wonderfully, and, although they have become rather common, they are an indispensable addition to the belts worn with shirt waists. Crepe designs predominate in all the cotton fabrics, but some new ones, which are soft and glossy like silk, have made their appearance, and these, with lustrous silks, shiny cloths and smooth cashmeres, which are being worn, would seem to demonstrate the fact that rough-finished cloths are going out of fashion.

A very important accessory of dress for the chic young woman, as well as those who are not so young, is the waistcoat, without which a summer outfit is sadly incomplete. This fancy has grown and multiplied into a craze, and the variety apparently has no end. There are waistcoats of linen, pique, cloth, rich brocades and real vesting, such as the men wear, and each one of these has its own special use.

It is poor judgment to wear a fresh gown on an extended journey. Many women attire themselves as for a tea or fashionable luncheon. The result is that one night in the cramped quarters of a sleeping-car section causes the smart frock to look as if it had passed through a cyclone or some other severe trial. Wear the second-best stuff gown in your wardrobe, one which has become adjusted to your form, and which you will not worry over if a sudden lurch in the train sends a cup of hot coffee over its front breadth.

Summer Styles.

There was an effort made early in the season to introduce drapery skirts, but a great many women firmly rejected a style that threatened to banish the graceful designs that have been so popular during the past few years. Many cloth costumes are made with undraped overskirts, somewhat shorter than the skirt. Some thin fabrics for afternoon and evening wear are stylishly draped.

Skirts of thin material and some evening gowns are loose from the lining, and others, particularly silks and wools, are cut a-godet and lined as heretofore, but with fullness at the top of the back, where last year they were flat. The fullness may be gathered, but a new idea is to arrange it in three enormous gauges, each some two inches deep, and closed over the top, that stands directly out from the back.

Very little trimming is used on skirts—a mere foot border meant only for a finish, composed of perhaps a narrow puff or several folds or pipings, or a facing.

There is an exception to be made to this rule, however, as some gowns have a deep ruffle or a deep flounce of more than half the skirt depth. These wide ruffles are a better choice in point of style than draped skirts.

"Many of the bodices," says a fashion writer, "meet the skirt in a clean line without any belt; but this requires the most perfect fitting. Others have the waist seam covered with a narrow strip of silk drawn around in gathers, that adds nothing to the size of the waist. Some bodices are hooked down the back. The sleeves may be shirred

into the armhole, but is usually laid in side plaits each way from a box plait on top." Basques are entirely out of fashion and are not made except by a second-class dress-maker.—Agnes Flemming.

Gems of Thought.

We ask advice, but we mean approbation.—Colton.

Variety alone gives joy; the sweetest meats the soonest cloy.—Prior.

The truest eloquence is that which holds us too mute for applause.—Bulwer.

Ideals are like beards—men do not have them until they grow up.—Voltaire.

The burden of suffering seems a tombstone hung about our necks, while in reality it is only the weight which is necessary to keep down the diver while he is hunting for pearls.—Richter.

Wisdom without honesty is mere craft and cozenage. And therefore the reputation of honesty must first be gotten, which cannot be but by living well. A good life is a main argument.—Ben Jonson.

All the world, all that we are and all that we have—our bodies and our souls, our actions and our sufferings, our conditions at home, our accidents abroad, our many sins and our seldom virtues—are so many arguments to make our souls dwell low in the deep valley of humility.—Jeremy Taylor.

There are few men who are not ambitious of distinguishing themselves in the nation or country where they live, and of growing considerable with those with whom they converse. There is a kind of grandeur and respect which the meanest and most insignificant part of mankind endeavor to procure in the little circle of their friends and acquaintance. The poorest mechanic, nay, the man who lives upon common alms, gets him his set of admirers, and delights in that superiority which he enjoys over those who are in some respects beneath him. This ambition, which is natural to the soul of man, might, methinks, receive a very happy turn, and, if it were rightly directed, contribute as much to a person's advantage as it generally does to his uneasiness and disquiet.—Addison.

Miss Repplier's Trenchant Words on the Woman Question.

Happily, as we are past the day when men looked askance upon women's sincere efforts at advancement, so we are past the day when women deemed it profitable to ape distinctly masculine traits. We have outgrown the first rude period of abortive and misdirected energy, but it does not follow that the millennium has been reached. Mr. Arnold has ventured to say that the best spiritual fruit of culture is to keep man from a self-satisfaction which is retarding and vulgarizing, yet no one recognized more clearly than he the ungracious nature of the task. What people really like to be told is that they are doing all things well, and have nothing to learn from anybody. This is the reiterated message from the gods of which the daily press delivers itself so sapiently and by which it maintains its popularity and power. This is the tone of all the nice little papers about woman's progress, and woman's work, and woman's influence, and woman's recent successes in literature, science and art. "I gain nothing by being with such as myself," sighed Charles Lamb, with noble discontent. "We encourage one another in mediocrity." This is what we women are doing with such apparent satisfaction; we are encouraging one another in mediocrity. We are putting up easy standards of our own, in place of the best standards of men. We are sating our vanity with small and ignoble triumphs, instead of struggling on, defeated, routed, but unconquered still, with hopes high set upon the dazzling mountain tops which we may never reach.—Agnes Repplier.

Child-Labor.

Child-labor has rapidly grown to monstrous proportions within the last twenty years, but the more enlightened portion of the nation is waking to the folly and wrong of it. This is shown by the fact that legislation on this subject exists in many States, though often evaded, and that factory inspectors have been appointed, though their number is inadequate. Some working people will not let their children go into the mills, saying "they learned too much badness;" others say it is better for them than to be on the streets. Mr. W. F. Willoughby has shown that the rate of wages is lowered by child-labor, since the rate of wages depends on "the standard of comfort," which standard is lowered by the employment of young children of a family. The effect of

the prohibition of child-labor would be a permanent rise of wages, owing to the lessened competition, and also an improved condition of the laborer, rendering him more valuable as a consumer, which would lead to a better condition of the market. From the history of child-labor in England we may learn an instructive lesson for our own country. In the last quarter of the eighteenth and the first of the nineteenth century it existed there to a horrible extent. Restrictive laws have been passed from time to time, with good results, and the condition of the British workman is now improving rapidly.—Lippincott's.

The Conscience Fund.

The "Conscience Fund" has figured in the statements of the Treasury Department for over eighty years. It was opened by the Register of the Treasury Department in 1811, and appears in the general fund of the Government under the head of Miscellaneous Receipts. Like other assets of the Treasury, it can be used for any purpose that Congress may deem proper. Its origin was due to the fact that away back in the beginning of the present century some unknown person began to feel the sharp thrusts of his conscience. In some way he had defrauded the Government, and could find relief only by returning the money to the Treasury. This was the beginning of the account showing the receipts of moneys by the Government from unknown persons. Since then the sum has been accumulating in large and small sums, until at the present time it aggregates nearly two hundred and seventy thousand dollars. Remittances are received nearly every week, and frequently two or three times a week. During the prevalence of the hard times the receipts have fallen off considerably, and sometimes a fortnight elapses before a communication is received, showing that even a man's conscience can feel the effect of tight money.

The Fine Intelligence of the Elephant.

It appears from trustworthy anecdotes that the Asiatic elephants in a few months of captivity acquire the rules of conduct which it is necessary to impose upon them. The speediness of this intellectual subjugation may be judged from the fact that, after a short term of domestication, they will take a willing and intelligent part in capturing their kindred of the wilderness, showing in this work little or no disposition to rejoin the wild herds. In the case of no other animal do we find anything like such an immediate adhesion to the ways of civilization. We have to account for this eminent peculiarity of the elephant on the supposition, which appears to be thoroughly justified, that the creature has, even in its wild state, a type of intelligence and instincts more nearly like those of men than is the case with any other wild mammal—an affinity with human quality which is, perhaps, only approached by certain species of birds. It appears from the observations of naturalists that the family or tribe of wild elephants is a distinct and highly sympathetic community.—July Scribner.

Easy to Take Life too Seriously.

From childhood onward, by whatever monitor crosses our path, we are bid remember that life is real and earnest. Yet, surely, whoever knows anything knows that. An instinct of it appears in those who know nothing. Infants and idiots—under some such instinct, possibly—put much earnest into their play. The beggars, the vagrants, the pensioners, of high and low degree, take life none too seriously, of course; but the instinctive and curt way in which society sets them apart shows that they must be an exceptional and comparatively small fraction. For most men the law of life is the quite simple one of work or starve, and most men learn it without any telling.

Too keen a sense of the reality of life is the direct cause of half its diseases, of half its disasters. For, while under it, one class of men, in high revolt, fling themselves into dissipation, another class decline into slavish submission. They allow themselves no moment of forgetfulness, real or factitious. All capacity for diversion has died in them.—Scribner.

I dislike an eye that twinkles like a star. Those are only beautiful which, like the planets, have a steady, lambent light—are luminous, but sparkling.—Longfellow.

We have noticed that an optimist is likely to be a man who is unmarried, and that most pessimists are married.—Atchison Globe.

"Little Dirty-Face."

We have a little maid at home,
She says "My name is Dwaice"—
To pa and ma she's better known
As "Little Dirty-Face."

You scrub and dress that child at ten—
White muslin, trimmed with lace—
In fifteen minutes, often less,
She's "Little Dirty-Face."

But smiles off break that crust of dirt,
And smiles the dimples chase,
And tender eyes light up with love
That little dirty face.

'Tis naught but superficial dirt
Which scrubbing will erase;
So pa and ma are rather proud
Of Little Dirty-Face.

On tot's small phiz the trouble is
To find a kissing place;
But stay—I see a rosebud mouth
On Little Dirty-Face.

Then come and give that sweet "bear hug,"
'Thou little toddling Grace—
Thy soul's as pure as angels' robes,
My Little Dirty-Face.

—Boston Transcript.

Hints to Housekeepers.

A good cologne water is made of a half pint deodorized alcohol, thirty drops each of oil of lemon, oil of lavender, oil of bergamot and orange-flower water. Cork and shake well.

Don't use towels provided for general use in public lavatories, restaurants, and sometimes in schools. They have been found by microscopic investigation to contain bacteria of several contagious diseases.

Do not forget that a "salt shirt," prepared by immersing the shirt in a saturated solution of common salt, drying it thoroughly and wearing it next the skin on retiring for the night, is a most excellent remedy for night sweats.

Here is the recipe for home-made lavender vinegar: Take six handfuls of lavender flowers and throw into an earthenware jar. Fill with vinegar and leave for three days by the side of the kitchen fire, where it may become hot without boiling. Add cabbage-rose leaves, jasmine and verbena. This is a delightful and invigorating mixture for the bath.

A hammock hung according to rule should be six and a quarter feet from the ground at the head and three and three-quarters above the ground at the foot end. The rope that secures the head end should be less than 12 inches, and that at the foot should measure 4½ feet. Arranged in this way the lower part will swing freely and the head will be kept comfortable by being nearly stationary.

An invaluable rule for the preservation of one's health and spirits is to go out of the house, on some fixed errand, every day of one's life. This is not so easy as it seems, and all women know that it is not. But the practice, if carried on ever so short a time, will plead for itself. We get into very bad habits of staying within doors, and foregoing the change of air and scene and interest that is absolutely necessary not only to a broader mind, but also to a sane view of things in general.

You may clean soiled gloves at home quite as well as they are done for you at the shops if you follow this plan: Pour naphtha into a bowl and wash the glove in it, wringing it out as if it were a cloth, and repeating the process several times. Then lay the wet glove on a clean towel, and with another part of it rub every part of the kid softly but thoroughly. All the dirt will be thus rubbed away, and the gloves will come out next to new in appearance, while there is very little odor to naphtha, bad as benzine is.

Mike (on the road)—How far is it to Chistnut Hill, sir? Native—About five miles. Whom do you want to see there? Mike—Faith, I'm anxious to see myself there before night.—Philadelphia Record.

Every man has an agreeable side to him, but it is sometimes necessary to go entirely around him to get at it.—Galveston News.

DOMESTIC ECONOMY.

BAVARIAN CREAM.—Beat five eggs, add one-half pound of sugar, beat and add one quart of boiling cream, add two-thirds of an ounce of gelatine dissolved in boiling water very cold.

STRING BEANS.—Carefully remove the strings and cut into inch pieces. Wash and cook in boiling salted water from one to three hours; some varieties take longer to cook than others. Drain, turn into a hot dish, season with salt, butter and cream and serve.

GREEN PEAS.—Shell the peas but do not wash them, as washing destroys the delicate flavor. Shake the peas in a colander to remove the fine particles. Boil 20 minutes or till tender. Drain the peas, turn them into a hot dish, season with salt. Place a pat or two of butter on top and set them into the oven for three or four minutes. Be sure and put the cover on the dish before putting it in the oven.

VEAL STEW.—Take two pounds of the ends of the ribs, the neck or the knuckle. Cut the meat in small pieces and remove all the fine bones. Cover the meat with boiling water; skim carefully; add two teaspoonfuls of salt and pepper to taste. Cover carefully and simmer until perfectly tender. Thicken with one tablespoonful of flour rubbed smooth in a heaping tablespoonful of butter. Add two tablespoonfuls of chopped parsley, let it boil five minutes. Remove the bones and serve.

POP OVERS.—Three cups of flour, one tablespoonful of butter, half a teaspoonful of salt, two cups of milk, six eggs, whites and yolks beaten separately, one heaping teaspoonful baking powder. Sift flour, baking powder and salt together twice, chop in the butter. Stir the beaten yolks into the milk and add the flour, then the whites beaten to a stiff froth. Whip vigorously. Cook in hot-buttered gem pans or earthen cups in a quick oven half an hour, or until the puffs are browned and well popped over.

BAKED FISH.—Keep on the head and tall, make a stuffing of bread crumbs and salt pork chopped fine, sweet marjoram, a little clove, pepper, salt, minced parsley and onion. Moisten it with the beaten yolks of eggs. Stuff the inside of the fish with this, reserving a little to rub over the outside. Rub the fish all over with the yolks of eggs, and then with the remainder of the stuffing. Lay an iron fish-sheet into a dripping pan, first rubbing it well with salt pork; place your fish upon this, putting its tail to its mouth. Pour into this pan a little water, add a gill of port wine and a piece of butter rolled in flour. Bake well, basting frequently. Serve with the gravy poured about it, and garnish with slices of lemon. A fish weighing 10 or 12 pounds requires two hours to bake.

Pleasantries.

Fannie—Mr. Heath said in some respects you reminded him of the ladies for whom knights used to contend. Amy—Oh, he only meant to flatter me. Fannie—No; he said you really did have a middle-age look.

Wife—To-morrow is your birthday, darling, and I am going to stop at the jeweler's and buy you a present. Her Hubby—Get something cheap, pet; haven't paid him for my last birthday present yet.—Spare Moments.

Lady (to deaf butcher)—Well, Mr. Smallbones, how do you find yourself to-day? Smallbones—Well, I'm pretty well used up, mum. Every rib's gone, they have almost torn me to pieces for my shoulders, and I never had such a run on my legs.—Tit-Bits.

Little Dick—This is Saturday, and mamma and papa are going to the theatre to-night. I'm awfully glad. Little Dot—Why? Little Dick—Cause she can't wash me to-night, and she'll get up so late to-morrow she'll have to let me go dirty or miss church.

Highest of all in Leavening Power.—Latest U. S. Gov't Report.

Royal Baking Powder
ABSOLUTELY PURE

PATRONS OF HUSBANDRY.

The Secretary's Column.

This office has received but little news from subordinate Granges during the last three weeks. Two political conventions have been held, which perhaps accounts for the negligence of members in not furnishing us with a few Grange items from their several localities.

It is to be hoped that every member of the order takes a just pride in the politics of his country, whether he be Populist, Democrat or Republican, remembering that by becoming a Patron of Husbandry no one gives up that inalienable right and duty which belongs to every American citizen, to take a proper interest in the politics of his country.

On the contrary, it is right for every member to do all in his power, legitimately, to influence for good the action of any political party to which he belongs.

Bro. Trimble, Worthy Secretary of the National Grange, writes that Bro. O. H. Kelley, one of the founders of the order, has been visiting the Secretary at Washington, and that his visit has been greatly enjoyed at that office. Bro. Kelley doesn't look a day older than he did 20 years ago; always happy, bright and with unbounded faith in his noble order.

This office had the pleasure of a visit from Bro. W. L. Overhiser of Stockton, who was down on business in relation to the trade card system, report of which will be published and forwarded to each subordinate Grange in the State in a short time.

Lodi Grange will celebrate Children's Day on the 4th of July, commencing at 2 P. M. All Patrons and their families are invited to be present.

This Grange indorsed Mr. D. Lubin's "Novel Plan on Transportation" at their last meeting.

A recent letter from the Worthy Lecturer of the National Grange, Bro. Messer, states that he arrived home on the 13th of June, safe and sound. He found the order in the States of Colorado, Nebraska and Iowa in a fairly prosperous condition, considering the circumstances; and, along with California, he looks for an increase in membership before the close of the present year. The work is already being pushed forward with gratifying success; had good meetings all along the line.

Bro. Messer desires to express to the Executive Committee his thanks for their kindness and courtesy to him at all times, and their efforts in connection with the entire membership of the order to make his visit to the Pacific Coast as pleasant and enjoyable as possible.

Petaluma Grange will confer third and fourth degrees on a class the second Saturday in July. All members of the order are cordially invited.

Bennett Valley Grange's Fourth of July committee are arduously laboring to complete their programme for that occasion. Bro. Goodenough and other prominent Grange speakers will probably be in attendance.

Every Grange in the State should have a copy of Bro. O. H. Kelley's History of the Order. This office will be prepared to furnish them to the members of the order in this State in a couple of weeks. Price per copy, 75 cents.

This office has forwarded to each secretary of subordinate Granges in the State blank reports for the June quarter, and it is to be hoped that the secretary of each Grange will fill them out and forward to this office at as early a date as possible, thereby enabling us to make out our report promptly to the National Grange.

The State Grange, through its trade card committee, is doing all that is possible in making trade arrangements. Contracts are being closed as rapidly as they can be made on a favorable and proper basis. See their confidential circular, to be issued shortly.

New England is largely indebted to the grange for its high standing in all parts of the country.

The farmer needs to be the best educated man in the community. The grange is the farmer's school, which will assist him in securing this education.

Our Grange Homes says there is too much law and demagoguery, and too little practical common sense, in the legislation of to-day, and the only way to correct this enormous evil is to drop out a large portion of the lawyers and all of the demagogues, and elect in their places men of practical common sense—business men and farmers.

Bro. J. W. Stockwell, Lecturer of the Massachusetts State Grange, gives this advice to lecturers of subordinate granges: Keep in step with your grange. Do not lead by getting too far ahead; do not forget

the individuality of your grange, or its peculiar needs or its peculiar circumstances. The programme of no other grange should be your guide, except as it fills a want in your circle and in your community. To try to run all granges in one groove is a fatal mistake.

Patrons, are you watching the political issues of the day? Nominations have been and will be made for positions of public trust, and candidates have not been lacking for positions. Are they men who are qualified for the work? Will they represent those who are asked to elect them? Are they broad-minded, honest, patriotic men?

Remember that all county officers chosen in November, 1894, shall serve for a period of four (4) years from and after the date of qualification. (See statutes of California, page 367, acts of 1893.)

Address all communications for State Grange to Don Mills, Santa Rosa, Cal.

RUN DOWN WITH

DYSPEPSIA

STOMACH
Liver
AND HEART
AFFECTED.



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But Finally
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14 Sansome Street, San Francisco.

DIVIDEND NOTICE.

SAN FRANCISCO SAVINGS UNION,
532 California St., Corner of Webb.

For the half year ending with the 30th of June, 1894, a dividend has been declared at the rate of four and eight-tenths (4 8/10) per cent per annum on Term deposits, and four (4) per cent per annum on Ordinary deposits, free of taxes, payable on and after MONDAY, the 2d of July, 1894. LOVELL WHITE, Cashier

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THE RANCHO AROMITA—Prices \$35 to \$125 per acre. This is the best rich sediment soil property offered in this State for the money. S. P. has station on the ranch, and only few miles from Watsonville Sugar Beet Refinery. This is a great country for sugar beets. For full particulars apply E. C. GODFREY, Crocker Building, San Francisco, Cal.

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WRITE FOR CATALOGUE NO. 14 DEVOTED TO AGRICULTURAL MACHINERY.

The purpose of this notice is to inform both farmers and merchants, who use or sell Horse Forks, that they must not purchase Horse Forks that infringe the above Patents; and to call their attention to the fact that certain horse forks, manufactured by F. E. Myers & Bro., Ashland, O., and imported and sold by the Deere Implement Company, of San Francisco, are direct infringements of the above patents, the manufacturers of the infringing forks having admitted in Court that their forks were an infringement of the above patents, and are now paying royalty for manufacturing and selling them; and they have agreed not to sell any west of the Rocky Mountains.

All parties selling or using these infringing Horse Forks will be promptly prosecuted.

No. 197,187..Nov. 13, 1877

No. 210,458..Dec. 8, 1878

No. 306,667..Oct. 14, 1884

No. 403,019..May 7, 1889

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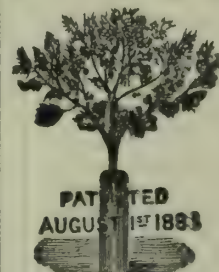
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Origin of Petroleum.

Mr. J. J. Jahn, in an article, "Zur Frage über die Bildung des Erdöls," states that in his study of the Silurian rocks of Bohemia he found in a dolomite of the Pridoli valley that the hollow portions of fossils—such as the chambers of Orthoceratidae, or the space enclosed by the two valves of a Lamellibranch—often contained a sort of nucleus of little lumps of anthracite or drops of petroleum (sometimes both substances), while the rest of the drusy hollow was taken up by calcite or dolomite crystals. The same occurrence is noticeable in the limestones near Stolba, and not only are the anthracite lumps and petroleum found in immediate connection with the fossils, but they, as well as mineral wax, occur disseminated in the mass of the rock itself. These substances, whether in intimate connection with marine shells, or apart from them, are evidently the result of the decomposition of the animal organisms which, ages ago, were buried in the calcareous mud of the Silurian sea.

The author considers that his observations herein confirm the views of Prof. C. Engler, who attributes the origin of petroleum to animal organic remains, and has succeeded in artificially producing that substance and its by-products from animal matter. It is now seen that the idea that a large quantity of coal necessarily implies a paucity of petroleum, or the abundance of the latter, the scarcity of the former, in any particular locality, is erroneous. Wherever the Silurian limestones of Bohemia contain anthracite, there, too, either petroleum or bitumen is found; and one is impelled to conclude that the formation of coal by the decomposition of vegetable matter went on concurrently with the formation of petroleum by the decomposition of animal matter. The author thinks, moreover, that some anthracite may well be of animal origin; it may arise, perhaps, from the decomposition of masses of the chitinous skeletons of Graptolites.

The conditions of temperature and pressure which Prof. Engler found necessary in his experimental manufacture of petroleum probably obtain in nature as a result of the crumpling and crushing of the earth's crust, and of the eruptions of igneous rock which not seldom accompany these phenomena. It is a striking fact in this connection that the Stolba limestones become more dolomitized as they approach the neighboring eruptive rock, diabase.—Jahrbuch der K. K. geologischen Reichsanstalt, Vienna.

How I do love the earth! I feel it thrill under my feet. I feel, somehow, as if it were conscious of my love, as if something passed into my dancing blood from it, and I get rid of that dreadful duty feeling—"what right have I to be?" and not a goldenrod of them all soaks in the sunshine or feels the blue currents of the air eddy about him more thoughtlessly than I. I think nature grows more and more beautiful and more companionable as one grows older, and the earth more motherly tender to one who will ask to sleep in her lap so soon.—James Russell Lowell.

—Hallibut weighing 30 and 40 pounds were sold at the Tacoma water front last week for 25 cents each. The fish belonged to the North Pacific Fish Company. On account of the floods they could not be shipped east, as is usual, and it was a case of selling them at what they would bring or letting them spoil.

—The \$20,365 38, the unexpended money of the California appropriation for her exhibit at the World's Columbian Exposition, has been paid over to the State Treasurer by Irving M. Scott, president of the California World's Fair commission.

—W. E. Baines, of Marshfield, Or., intends to construct a log raft and tow it here. Captain Robertson, who contrived the Leary cigar-shaped raft on the Atlantic coast, is interested in the enterprise.

—The opening of the Mendocino county coal fields means much for the manufacturing industries of the coast, if, as it is claimed, the coal can be mined for \$1 a ton and laid down here for another dollar.

RUDY'S PILE SUPPOSITORY is guaranteed to cure Piles and Constipation, or money refunded. 50 cents per box. Send stamp for circular and Free Sample to MARTIN RUDY, Lancaster, Pa. For sale by all first-class druggists.

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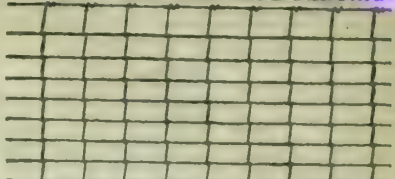
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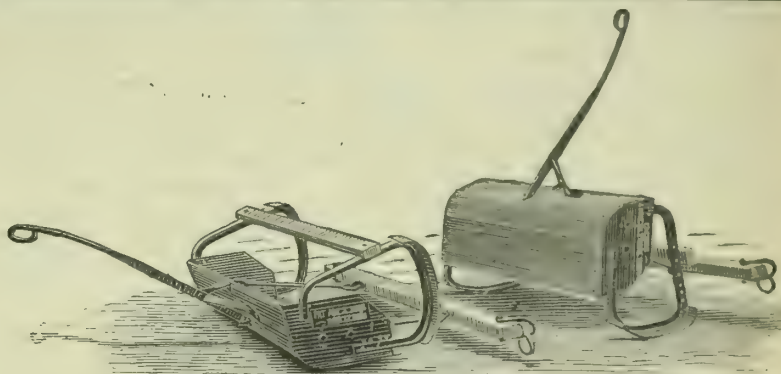


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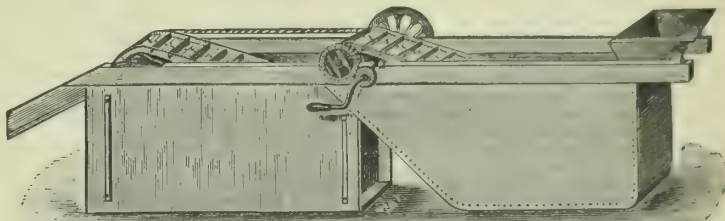
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AGRICULTURAL NOTES.

CALIFORNIA.

Butte.

The Oroville Register gives the following experience of Mr. George B. Springer in extracting the oil from olives: "He took some of the Picholine berries and ground them in a coffee mill. Then he placed them between two pie plates, put the two tins between two pieces of board and then set them in the jaws of his vice, thus giving a powerful squeeze to the pulp. From five pounds of the berries he obtained eight ounces of oil. He then ground two hundred pounds in another form, but did not get the berries so thoroughly ground up. He did not have a press suitable for extracting the oil, but from his berries got sixteen 16-ounce bottles. He pickled 60 gallons and has some of them on hand, keeping them as an experiment. He had to put them in a strong brine in order to keep them. From his twelve-year-old tree that has been moved twice he obtained 16 gallons of berries last year and 30 gallons the year before. If we estimate this as an average, he would have 23 gallons per year; and as the pickled olive sold here readily at 75 cents and \$1 a gallon, it will be seen that there is a handsome profit in this fruit."

Los Angeles.

The Los Angeles Times thus sums up crop conditions to June 23d: "The weather was favorable for the retention of the soil moisture, the growth of summer crops and standing hay, but was retarding to fruit ripening. Fruits are now several weeks later than usual in ripening. The hay crop turned out better than expected in some localities, owing to the cool, damp weather and some light rains late in the season, but the crop is still far below the average yield. Apricots promise to be small. Blackberries are being marketed and are selling at very reasonable prices. Grapes and walnuts promise well. In fact, this is the case with all fruits except prunes, which in some localities will be a rather light crop. Apricot drying will begin at Pomona about the first of next month. From Ontario it is reported that all varieties of fruit are very backward, and Royal apricots will not be ripe before the first of July. The last oranges will leave Ontario this week."

N. Levering, the well-known Los Angeles beekeeper, gives the *Cultivator* the following facts about the honey failure of 1894: "From reports from various parts of the country, the outlook for honey is anything but encouraging. No honey is being stored and bees are dying of starvation. Prospects are gloomy without a cheering ray to hang a hope upon. Up to the present the season looks more unfavorable than the memorable year of 1877, for then, at this time of the year, the weather was warm and bees gathered enough to subsist upon, but stored no surplus. We do not write to discourage apiarists, but feel that the facts should be squarely told. Apiarists should expect a Waterloo defeat once in awhile, and when it comes once in seventeen years they should at least take it stoically and hope for better in the future. This year the work for June will vary from ordinary seasons. There will be little or no extracting done, owing to the drought, which will be an epoch in the history of apiculture in southern California. The most essential work for this month will be to keep the bees in as good condition as possible. The continuous cool weather up to the present writing indicates a scarcity of honey—not more than the bees will consume before the approach of a favorable honey flow. The honey harvest is most generally in June. This year, if any, it will be in July, as it is barely possible that the sumach will produce some honey. We would advise no extracting unless there is an oversupply. Bees should be kept strong during the prevalence of drought. Usually one extreme follows another, and the year 1895 will most likely be a good honey season, and then strong colonies will be in demand. 'In time of peace prepare for war;' in time of drought prepare for a crop. Keep your bees strong, for this at dull times is the key to success."

Pasadena Crown Vista: W. A. Johnson, an up-country rancher, has a scheme for exterminating gophers that is at once original, cheap and effective. He takes a small clod of heavy earth and wraps it in cotton batting. He then saturates it with turpentine and brimstone or sulphur, places it at the mouth of the hole, and is absolutely sure of its work. He touches a match to it, rolls it down with a stick while burning and closes up the mouth of the hole. The brimstone soon does its work. The gopher finds himself a prisoner in sulphur fumes, which he cannot stand many seconds. The gas finds its way into every section of the hole, and is absolutely sure of its work; the turpentine continuing to burn until it is all consumed. Mr. Johnson provides himself with the materials on going out, and when he sees a gopher at work it takes but a few minutes to stop his depredations.

Mr. Theodore Pickens, of La Canyada, suggests a plan for curing lemons, which he says he has tried successfully and which he calls "the poor man's method." He cuts his lemons from the trees, using all the ordinary precautions in handling, puts them in regular fruit boxes, having openings at each end for the purpose of handling same. He then places his boxes on the north side of the house or in some shady place where the sun will not reach them, and packs five or six boxes high, putting a sack over the top of each and letting the ends come down over the openings at the end so as to exclude the air and light. About once a week he gives the lemons a shower bath of cold water by inserting the end of a hose in the openings at end of boxes. He repeats this operation about once a week, or, if the weather is cloudy, not so often. He produced some really fine specimens cured in this way, and he says he has kept them six or eight months. His Pearmain apples are kept by this method.

Riverside.

Letter in *Riverside Press*: Though the conditions in this valley are against the rapid and extensive increase of black scale, yet in some orchards it is beginning to give trouble, and generally over the valley it will be well to co-operate in helping nature to keep this scale under subjection. To this end some knowledge of its life is useful. It has but one brood in the year, attaining maturity about the end of May, this month being the best time to search for

it, as it is then easily found. The mature insect fills its scale with eggs and shrivels up and dies. There are sometimes as many as a thousand eggs under one scale. These eggs begin to hatch in June, the process being continued to the end of September. Great numbers of the young die by exposure to the sunshine and heat of summer. It is considered that the best time for the treatment of the infested trees by spraying or gassing is after the eggs are all hatched, possibly in October. But by that time many of the young early hatched may have hardened up so as to be able to resist the action of the wash. If the spraying were done in August, when the young were tender and many of them just coming out, and all the old scale loose on the bark, it might prove more effective in cleaning the trees.

Riverside Press: A legal point was decided by Judge Otis at San Bernardino yesterday which is of interest in this county as well. Some time since Louis F. Moulton and Stephen Oybazabel were subjected to legal proceedings to collect the county license on 12,000 and 18,000 head of sheep respectively. They were moving their herds from the coast over into Inyo county. Judge Otis granted a nonsuit, virtually deciding that the license tax of the county could not be collected from non-resident sheep-owners who were simply driving their herds through the county. There should be some way to reach these sheep-owners. The law was passed, not as a means of revenue, but to protect the people against sheep owners who drive their sheep through the country simply for the feed they get while driving, without any particular point of destination in view, and thus stock belonging in the country over which these great droves of sheep pass are caused to suffer for scarcity of feed.

San Francisco.

S. F. Bulletin: An expert employed by the Collector of Internal Revenue has been sampling butter for sale by dealers in this city, with the object of making tests to detect adulteration or substitution. Microscopic examination easily distinguishes butter from oleomargarine or butterine, the latter a mixture of butter with oleomargarine. After an examination of several hundred samples here, the expert says he has found no adulteration or sophistication. He thinks there is little fraud of this sort at present, as butter is almost as cheap as its imitations. Wholesale dealers in oleomargarine are obliged to pay \$400 a year for their license. Retailers are charged \$50. There are five of the former and about thirty of the latter in the State who are licensed. Los Angeles leads in the number of dealers in oleomargarine. It has eleven. San Francisco has eight, San Diego two, Oakland two, and there is one each at Fresno, Stockton, Chico, Pasadena and Redlands.

San Joaquin.

Stockton Mail: People engaged in raising chickens as a business might get a pointer by visiting County Clerk Yolland's chicken yard on his farm. It costs him nothing to feed his fowls, for they are supplied by cranes with all the fish they can eat. Some time ago two acres of the farm were planted to eucalyptus trees, and now they are very tall and vigorous. Some cranes, noticing the loftiness of the trees and realizing evidently that nobody could climb the smooth trunks unless he had a pair of spikes strapped to his feet, made nests in the high tops. More followed, and now about 200 cranes, white and blue, nest in the trees from early spring until September. At night they fish in the tules, and at sunrise bring their catch to the eucalyptus grove, where hundreds of fish are dropped to the ground. The chickens on the farm, which make the grove their headquarters, thrive on the diet thus given them by the birds.

Santa Barbara.

The Santa Maria Times congratulates its readers that "creameries struck our valley just in time to save the dairy industry, for persons engaged in handling butter in San Francisco and Los Angeles say they find it more and more difficult to dispose of ordinary dairy butter every month at anything like a living price, and that in another year or two nothing but creamery butter will pay for the making."

The Santa Maria Times thus sums up rural conditions in Santa Maria Valley and thereabouts: Headers are already running and more will start in a few days. There is an abundance of hay and some to spare. Some of it is not first-class, the spell of drought during growing season having killed all the blades on the stalks. The bulk of the hay, however, is better than usual. Late-sown oats will make an average crop of grain but not of straw. Wheat will be something like a half-crop; barley is plump and will yield well. Beans are making slow growth. With the exception of a few patches where the prevailing high winds of the past two weeks have cut the leaves, the crop will be worth harvesting at least. Pumpkins of late growth are looking as well as they ever do at this time of the year. Young orchard trees are not carrying out the big growth for which they started early in the spring. They are healthy and vigorous, but are not pushing out long limbs of new growth as they usually do. Bearing trees are making but little growth, but are maturing the largest and best crop of fruit ever produced in this valley. Early peaches are turning and will be ripe in a few days. Apricots are larger than last year, and a full crop, except in a few orchards where the late frosts caused them to drop. An immense prune crop is maturing and will be of good size. Cherries are holding out well. Some varieties of apples, especially Bellflowers, are dropping badly. The dairies all report a liberal flow of milk—more than they expected at this time, but they are not receiving usual prices for butter, which, together with shortness of feed, makes dairymen a little blue. However, there is still a margin of profit for those who keep up with the times by patronizing either public or private creameries.

Santa Cruz.

The Santa Cruz fruit-growers are going into co-operative drying and canning in dead earnest. Already \$5,100 of the capital stock of their company has been subscribed.

Watsonville Pajaronian: The Moro Cojo beet crop is going to be a surprise this year. Nearly all of the ranch is in beets, and there are no breaks in the general excellence of the stand. There are so many hundreds of acres of beets stretching before

the eye on the Moro Cojo that a beholder is apt to wonder if the enlarged beet factory has the capacity to handle all of the promising crop from that and adjacent sections before the winter rains begin. There are "beets without end" on the Salinas valley, from the most western point of the Moro Cojo ranch to Salinas.

Santa Clara.

Gilroy Advocate: The bee industry is to have attention here. Four hundred acres have been purchased this week on the west side of the Dunne ranch, near the Uvas dam, by one of the honey operators of the Salinas valley. Mr. and Mrs. Littlejohn have bought the land for a bee ranch and have also obtained a twelve months' option on 500 acres more.

Sonoma.

The Cloverdale Reveille says that the spring wool clip of Sonoma and Mendocino counties is of superior quality.

The newly organized Sonoma County Fruit Exchange has elected the following board of directors: J. Roberts, Santa Rosa; W. H. Harris, Mark West; E. Hart, Santa Rosa; J. V. Richelieu, Forestville; E. S. McClellan, Vine Hill; C. E. Miller, Sebastopol; G. N. Whitaker, Bennett Valley. A constitution and by-laws was framed and adopted. Several fruit-growers made short addresses urging combination and co-operation, and all seemed to favor the plans put forward for a fruit exchange. Chairman Hart urged the members to adopt measures for their protection. The organization will be similar to the Santa Clara County Fruit Exchange, and will unite with that and other kindred societies of different counties in the support of the California State Fruit Exchange. It is proposed to raise funds by selling stock in the society. Sufficient stock has already been subscribed to make the organization a success. The following auditing committee has been elected: F. Butler, Forestville; R. A. Temple, Santa Rosa; E. D. Sweetser, Santa Rosa.

Sebastopol Times: On the heels of the fact that the Petaluma cannery will not be operated this year comes the intelligence that it is a question whether any fruit will be canned in Healdsburg this season. Those bright prospects which were noted early in the season appear to have gone a-glimmering. There is plenty of fruit, and plenty of people to can it, but the necessary capital is lacking. The tonnage of all kinds of fruit in this section is larger than ever known. It is unfortunate, however, that while we have an abundance of all kinds of orchard produce, plenty of cheap labor to handle it, and sixty million American people for a market, the medium of exchange is not sufficient to transact the volume of business.

Sutter.

A Live Oak correspondent of the Sutter Farmer writes: The improvement in all kinds of grain in this part of the country since the late rains is truly wonderful. Many fields which two months ago scarcely promised the seed in return are now splendid fields of rustling, ripening grain awaiting the introduction of the sickle. This is but another evidence of the superiority of our soil and climate. If some of our southern friends could have seen these fields two months ago and compared them with their rich golden hue of to-day, perhaps they would not be so persistent in trying to make their Eastern sojourners believe that we can produce only babies and icebergs north of the Dixon line.

Knights Landing letter to Woodland Democrat: Sutter county farmers are figuring on a big bean crop this season. That is one of the staple products of the southern part of the State, and it is surprising that it is not more extensively cultivated in this section of the country.

Tulare.

Major Berry has written as follows to the Secretary of Agriculture: At a meeting of our County Board of Horticultural Commissioners, held in Visalia, the subject of the ravages and destructiveness of the red spider was carefully considered. Upon comparing notes and information it was learned that orchardists who had neglected to fight this pest last season had none or comparatively little fruit this year; particularly was this the case with young prune orchards—the trees being in their third year. We believe the red spider, unchecked, destroys the fruit buds grown this year in order to give you fruit next season. We therefore recommend that all prune and plum growers scatter sulphur on the leaves of their trees during the last of this month, as that is about the time the first crop of this pest begins their destructive work. To an amateur fruit-grower the first installment of red spider would scarcely be noticed, but if you will act promptly and kill the first ones by using sulphur now, you will not be troubled any more this season.

Register: The loss of sheep in the mountains during the recent storm was unprecedented. Thousands upon thousands perished or were scattered before the storm, and the bears and lions will live high. Out of a band of 3500 one owner lost 1000 and most other bands suffered proportionately.

The harvesting of the apricot crop in the vicinity of Traver is now in full blast. There is a big crop and employment has been given to a large number, mostly women and boys. A few of the fruit men have sold their crop to Chinamen, affording work to a few of the Mongols, but in nearly every other case white help is given the preference.

Visalia Delta: Chinese gardeners are not disposing of their vegetables as easily as heretofore. Many of the wagons return from their country trip: with half their loads undisposed of. "Hard times" affect them as much as they do other tradesmen. Some of them dispose of their products on their return trip at fifty per cent reduction on the price asked as they start out in the morning, and they throw in a bunch of onions or half a dozen ears of corn to effect a sale.

The following notes are from the Visalia Delta: The acreage of bearing fruit trees will be increased about 25 per cent next season, and 50 per cent two years hence. The fact that our fruit-growers are obtaining \$100 per acre for fruit on the trees ought to convince our people that there is money in fruit raising. Even at half that price it will pay better than wheat. The Chinaman who has been buying fruit orchards in this vicinity informs the Delta that he will employ white women and girls when he gets ready to cut fruit. He says he will not want any boys, as they are "too muchee d—d fooler."

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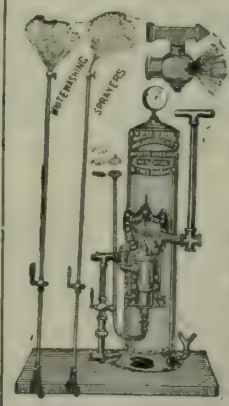
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S. H. MARKET REPORT

Market Review.

SAN FRANCISCO, June 27, 1894.

The local wheat market remains very quiet. There is no shipping demand, nor is there likely to be for a week or two to come. Quotations are somewhat nominal at 90¢ to 92½¢ for good to choice shipping qualities. For milling purposes there is moderate inquiry, which is readily met, though for an article of really prime character buyers have to look around considerably before satisfying this particular want. Prices show a wider margin in consequence, ranging from \$1 to \$1.10 per cbl.

Barley.

The market for spot barley is dull and uninteresting. Samples of new stock are being received and sales are reported for future deliveries within the quoted range. Old stock of choice quality is rather steadily held, though movement is slow. We quote feed, New, 80 to 83½¢; Old, 83½ to 85¢; Brewing, 95¢ to \$1 per cbl.

Dried Fruits.

The market remains quiet, though it will not be long before new crop will begin to come in, when fair business activity may be expected. There is nothing doing in futures, though it is said 8½¢ has been bid for Apricots, July delivery, on Eastern account, but refused. We quote as follows: Apples, 6¢ to 6½¢ for quartered, 6½¢ to 7¢ for sliced, and 9¢ to 11¢ for evaporated; Pears, 6¢ to 8¢ per pound for bleached halves and 2¢ to 4¢ for quarters; bleached Peaches, 10¢ to 11½¢; sun-dried Peaches, 7¢ to 8¢; Apricots, nominal; Prunes, 5¢ to 5½¢ for the four sizes, and 3½¢ to 4¢ for small; Plums, 4¢ to 5¢ for pitted and 1½¢ for unpitted; Figs, 3¢ to 4¢ for pressed and 1½¢ to 2¢ for unpressed; White Nectarines, —¢ to —¢; Red Nectarines, —¢ to —¢ lb.

Raisins.

California Layers, 60¢ to \$1; loose Muscatels, in boxes, 50¢ to 75¢; clusters, \$1.25 to \$1.50; No. 1 loose, in sacks, 2½¢ to 3¢ lb; No. 2 do, 2½¢ to 2½¢; dried Grapes, 1½¢ to 1½¢ lb.

General Produce Market.

OATS—The tendency of the market is against sellers. Stocks are large, while the demand is slow. Dealers do not expect any improvement for the next week, anyhow. We quote: Milling, \$1.20 to \$1.30; Surprise, \$1.35 to \$1.40; fancy feed, \$1.27½ to \$1.30; good to choice, \$1.15 to \$1.25; poor to fair, \$1 to \$1.10.

CORN—The inquiry is slim, and there is no strength in prices. Quotable at \$1.17½ to \$1.25 per cbl for Large Yellow, \$1.32½ to \$1.35 for Small Yellow and \$1.35 to \$1.37½ for White.

CRACKED CORN—Quotable at \$27.50 to \$28.50 per ton.

CORNMEAL—Millers quote feed at \$27 to \$28 per ton; fine kinds for the table, in large and small packages, 2½¢ to 3½¢ per pound.

OILCAKE MEAL—Quotable at \$35 per ton from the mill.

COTTONSEED OILCAKE—Quotable at \$30 per ton.

SEEDS—We quote: Mustard, brown, \$2 to \$2.25; Yellow, \$3 to \$3.25; Triese, \$2.50 to \$2.75; Canary, 3¢ to 4¢; Hemp, 3½¢ to 4½¢ lb; Rape, 2¢ to 2½¢; Timothy, 6½¢ per lb; Alfalfa, 10¢ to 11½¢; Flax, \$3 to \$3.25 per cbl.

MIDDLINGS—Quotable at \$19.50 to \$20.50 per ton.

MILLSTUFFS—We quote: Rye Flour, 3½¢; Rye Meal, 3¢; Graham Flour, 3¢; Oatmeal, 4½¢; Oat Groats, 5¢; Cracked Wheat, 3½¢; Buckwheat Flour, 5¢ to 5½¢; Pearl Barley, 4½¢ to 4½¢ per lb; Normal Nutrient, \$3 per case of 1 dozen cans; Breakfast Delight, \$3.25 per case of 2 dozen packages.

BRAN—Is steady, with fair demand. Quotable at \$17 to \$18 per ton.

FEED—Manhattan Horse Food (Red Ball Brand) in 100-lb cabinets, \$8. Manhattan Egg Food, 100-lb bags, \$11.50.

HAY—The market is being rather freely stocked with both old and new descriptions, and a further lowering of rates is probable in the near future. New Wheat sells at a range of \$9 to \$12; new Wild Oat, \$9 to \$12 per ton. Wire-bound Hay sells at \$1 per ton less than rope-bound hay. Following are the wholesale city prices for rope-bound hay: Wheat, \$11 to \$14; Wheat and Oat, \$10 to \$13; Wild Oat, \$12 to \$14; Alfalfa, \$9 to \$11; Barley, \$10 to \$12; Compressed, \$11.50 to \$14.50; Stock, \$8 to \$10 per ton.

STRAW—Quotable at 70¢ to 80¢ per bale.

HOPS—Market lifeless, there being no buyers. Quotations nominal at 9¢ to 12¢ lb.

RYE—Is on the decline in price. Quotable at 90¢ to \$1 per cbl. Arrivals of new crop may further break values.

BUCKWHEAT—Quotable at \$1.10 to \$1.20 per cbl.

GROUND BARLEY—Quotable at \$20.00 to \$21.00 per ton.

POTATOES—Prices weak, under liberal receipts. Quotable at 25¢ to 75¢ per cbl, as to quality.

ONIONS—Quotable at 25¢ to 35¢ per cbl for Reds, and 50¢ to 60¢ for Whites.

DRIED PEAS—We quote: Green, \$1.50 to \$1.75; Blackeye, \$1.60 to \$1.65; Niles, \$1.50 to \$1.75 per cbl.

BEANS—Local trade is quiet, while there is no demand from the outside and quotations are undisturbed. We quote: Bayos, \$2.30 to \$2.45; Butter, \$1.90 to \$2.00 for small and \$2 to \$2.20 for large; Pink, \$1.75 to \$1.85; Red, \$2.30 to \$2.50; Lima, \$3.25 to \$3.40; Pea, \$2.50 to \$2.75; Small White, \$2.40 to \$2.60; Large White, \$2.50 to \$2.60 per cbl.

VEGETABLES—There is no sale for Rhubarb and quotations are nominal. Asparagus is falling off in supply. Tomatoes and Peppers are on the increase. Squash is also coming in freely. We quote as follows: Egg Plant, —¢ to —¢ per lb; Cucumbers, 25¢ to 40¢ for Vacaville and 75¢ to \$1 per box for bay; Asparagus, 30¢ to \$1 per box for the ordinary run and \$1.25 to \$2 per box for choicer quality; Rhubarb, 25¢ to 40¢ per box; Garden Peas, 2¢ to 2½¢ lb; Summer Squash, 20¢ to 30¢ per box for Vacaville and 50¢ to 75¢ per box for bay; String Beans, 1¢ to 1½¢ lb; Refugee Beans, 1¢ to 2¢ lb; Wax Beans, 1¢ to 1½¢ lb; Green Corn, \$1 to \$1.25 per sack for common and 20¢ to 25¢ per doz. for bay; Marrowfat Squash,

—¢ to —¢ ton; Hubbard Squash, —¢ to —¢ per ton; Green Peppers, 75¢ to \$1 per box for Chile and 75¢ to \$1 per box for Bell; Tomatoes, 75¢ to \$1 per box; Turnips, 75¢ per cbl; Beets, 75¢ per sack; Parsnips, \$1.25 per cbl; Carrots, 35¢ to 40¢; Cabbage, 60¢ to 75¢; Garlic, 1½¢ to 2½¢ lb; Cauliflower, 60¢ to 70¢ per dozen; Dry Peppers, 17½¢ to 20¢ lb; Dry Okra, —¢ to —¢ lb.

FRESH FRUIT—Most varieties are in large supply, and prices as a rule are in favor of buyers. We quote as follows: Peaches, 25¢ to 50¢ per box and 35¢ to 60¢ per basket; Figs, 40¢ to 50¢ per box for 1-layers and 50¢ to \$1 for 2-layers per box; Cherries, Royal Ann, 25¢ to 40¢ per drawer and 1¢ to 2¢ lb for loose; Cherries, black, 20¢ to 35¢ per box; do. loose, 1¢ to 2¢ lb; Apricots, Royal, 25¢ to 50¢ per box and ¼ to 1¢ per lb in bulk; Currants, \$1.50 to 3 per chest; Plums, 25 to 75¢ per box; Cherry Plums, 20¢ to 30¢ per drawer; Apples, 30¢ to 75¢ per box; Pears, 25¢ to 50¢ per box.

BERRIES—Gooseberries are unsalable, much stock being dumped. For other descriptions there is fair demand. We quote as follows: Raspberries, \$3 to \$5 per chest; Strawberries, \$3.50 to \$5 per chest for Sharpless and \$8 to \$10 for Longworths; Blackberries, \$2.50 to \$5 per chest; Gooseberries, ¼¢ to 1½¢ for common, and 2 to 4¢ per lb for the English variety.

CITRUS FRUIT—Custom for Oranges is small, while the demand for Limes and Lemons is moderate. We quote as follows: Mediterranean Sweet Oranges, \$1.25 to \$1.75; Seedlings, 75¢ to \$1.25; Mexican Limes, \$3 to \$3.50 per box; Lemons, Sicily, —¢ to —¢; California Lemons, 50¢ to \$1.25 for common and \$1.50 to \$2.25 for good to choice; Bananas, \$1.50 to \$2.50 per bunch; Pineapples, \$2 to \$4 per dozen.

NUTS—The volume of transactions is light, the demand being of a jobbing character. Peanuts are somewhat firm in price, being scarce. We quote as follows: Chestnuts, 6¢ to 8¢ lb; Walnuts, 6¢ to 7½¢ for hard shell, 8¢ to 9¢ for soft shell; 8¢ to 9¢ for paper shell; California Almonds, 10¢ to 11¢ for soft shell, 6¢ to 7¢ for hard shell and 11½¢ to 12½¢ for paper shell; Peanuts, 3¢ to 4¢; Hickory Nuts, 5¢ to 6¢; Filberts, 10¢ to 10½¢; Pecans, 7¢ to 8¢ for rough and 8¢ to 10¢ for polished; Brazil Nuts, 8¢ to 9¢; Cocoanuts, 5¢ to 5.50 lb.

HONEY—Light stocks cause firm holding, but the demand is slim and wholly local. We quote: Comb, 10½¢ to 11½¢ lb for bright and 9¢ to 10¢ for dark to light amber; water white extracted, 6½¢ to 7¢; amber extracted, 5½¢ to 6¢; dark, 4½¢ to 5½¢ lb.

BEESWAX—Quotable at 24¢ to 25¢ lb.

BUTTER—There is fair steadiness to prices for a first class article, free of defect, but the market shows easy tone for medium and common grades. Stocks are sufficient to supply current wants. We quote as follows: Fancy Creamery, 16½¢ to 17½¢; fancy dairy, 15¢ to 16¢; good to choice, 13¢ to 14¢; store lots, 11¢ to 12½¢; pickled roll, new, 17¢ to 19¢ lb.

CHEESE—The market still presents an easy tone, as stocks are of liberal proportions. We quote: Choice to fancy, 8¢ to 9¢; fair to good, 6½¢ to 7½¢; Eastern, ordinary to fine, 14¢ to 15¢ lb.

EGGS—Choice ranch parcels show further improvement. We quote: California ranch, 15¢ to 17½¢; store lots, 11¢ to 14¢; Eastern, 11¢ to 13¢ per dozen.

POULTRY—Dealers are overstocked and the market is in demoralized condition, while no immediate change for the better seems probable. We quote as follows: Live Turkeys—Gobblers, 10¢ to 12¢; Hens, 10¢ to 12¢; Roosters, \$4 to \$5 for old and \$5 to \$7 for young; Broilers, \$1.50 to \$2.50 for small and \$3 to \$4 for large; Fryers, \$4 to \$4.50; Hens, \$3 to \$4; Ducks, \$2.50 to \$3 for old and \$3 to \$5 for young; Geese, \$1 for old and 75¢ to \$1.25 per pair for young; Pigeons, \$1.25 to \$1.50 for young and \$1.50 to \$1.75 per dozen for old.

GAME—Nominal.

PROVISIONS—We quote as follows: Eastern Sugar-cured Hams, 13¢; California Hams, 11½¢ to 12¢; Bacon, Eastern, extra light, sugar-cured, 14¢ to 15¢; medium, 10¢; do, light, 10½¢; do, light, boneless, 12¢; light, medium, boneless, 10½¢ to 11¢; Pork, extra clear, bbls. \$20; hf bbls, 10¢ to 10.50; clear, bbls, \$19; hf bbls, \$10; boneless Pig Pork, bbls, \$21.50; hf bbls, \$11; Pigs' Feet, hf bbls, \$4.75; Beef, mess, bbls, \$7.50 to \$8; do, extra mess, bbls, \$8.50 to \$9; do family, \$10 to \$10.50; extra do, \$11 to \$11.50 per bbl; do, smoked, 9¢ to 10¢; Pickled Tongues, hf bbls, \$8; Eastern lard, tierces, 7½¢ to 8¢; do prime steam, 9½¢; Eastern pure, 10-lb pails, 10½¢; 5-lb pails, 10½¢; 3-lb pails, 10½¢; California, 10-lb tins, 9¢; do, 5-lb, 9½¢; do, kegs, 10½¢; do, 20-lb buckets, 10¢; compound, 7¢ for tierces.

WOOL—The market is in stagnant condition, and is likely to continue so until the tariff question is finally settled. We quote spring: Year's fleece, lb, 5¢ to 7¢; Six to eight months, San Joaquin, poor, 5¢ to 6¢; do fair, 6¢ to 8¢; Oregon and Washington: Heavy and dirty, 6¢ to 7¢; good to choice, 8¢ to 10¢; valley, 10¢ to 13¢. Nevada: Heavy, 6¢ to 8¢; choice light, 9¢ to 10¢. We quote fall: Northern defective, 5¢ to 6¢; Southern and San Joaquin, 3¢ to 4¢.

HIDES AND SKINS—Quotable as follows:

	Sound.	Culls.
Heavy Steers, 54 lbs up, ½ lb.	4½¢ to 4½¢	3½¢ to 4¢
Medium Steers, 48 to 56 lbs.	3½¢ to 3½¢	3¢ to 3½¢
Light, 42 to 47 lbs.	3¢ to 3¢	2¢ to 2½¢
Cows, over 50 lbs.	3¢ to 3¢	2¢ to 2½¢
Light Cows, 30 to 50 lbs.	3¢ to 3¢	2½¢ to 3¢
Stags.	3¢ to 3¢	2¢ to 2½¢
Kips, 17 to 30 lbs.	4¢ to 4¢	3¢ to 3¢
Veal Skins, 10 to 17 lbs.	5¢ to 5¢	4¢ to 4¢
Calf Skins, 5 to 10 lbs.	7¢ to 7¢	6¢ to 6¢

Dry Hides, usual selection, 6½¢; Dry Kips, 6½¢; Calf Skins, do, 6½¢; Cull Hides, Kip and Calf, 4¢; Pelts, Shearling, 10¢ to 20¢ each; do, short, 25¢ to 35¢ each; do, medium, 40¢ to 50¢ each; do, long wool, 50¢ to 75¢ each; Deer Skins, summer, 25¢; do, good medium, 15¢ to 20¢; do, winter, 5¢ per lb; Goat Skins, 25¢ to 40¢ apiece for prime to perfect, 10¢ to 20¢ for damaged, and 5¢ to 10¢ each for Kids.

San Francisco Meat Market.

Beef is unchanged. Mutton and Veal are in good supply and easy in price. Lamb is a trifle firmer. Following are the rates for whole carcasses from slaughterers to dealers:

BEEF—First quality, 5½¢; second quality, 4¢ to 5¢; third quality, 3½¢ to 4¢ lb.
CALVES—Quotable at 4¢ to 6¢ lb.
MUTTON—Quotable at 5¢ to 6¢ lb.
LAMB—Spring, 6½¢ to 7½¢ lb.
PORK—Live Hogs, on foot, grain fed, heavy and

medium, 4½¢ to 4½¢; small Hogs, 4½¢ to 4½¢; stock Hogs, 3½¢; dressed Hogs, 6½¢ to 7¢ lb.

California Fruits at the East.

CHICAGO, June 26.—The Earl Fruit Company sold California fruit at open auction this morning, realizing prices as follows: Cherries are still in bad order, being damaged by rain; 40¢ to 70¢; a few fancy, 75¢ to \$1.35; Cherry Plums, 80¢ to 90¢; Royal Apricots, 60¢ to 90¢; Peach, \$1; Alexander Peaches, 60¢ to 70¢. The supply still exceeds the demand; people have not much money for fruit, notwithstanding the low prices; prospects, however, are a little brighter.

CHICAGO, June 26.—Porter Brothers' Company sold to-day at auction six carloads of California fruit: Royal Apricots, 55¢ to 75¢; Peach, 55¢ to 65¢; Montgamets, 65¢ to 70¢; Hemskirkes, 60¢; Alexander Peaches, 45¢ to 70¢; Early May, 45¢; Clyman Plums, 85¢ to \$1.20; Cherry, 50 to 80¢; Koenig Claud, \$1.05 to \$1.15; Royal Hative, 75¢ to 95¢; Apples, \$1.30 to \$1.85; Tragedy Prunes, \$2.80; Bartlett Pears, \$2.75 to \$3; Black Tartarian Cherries, 55¢ to 65¢; Royal Ann, 50¢ to 80¢; Bigarreus, 35¢ to 70¢.

NEW YORK, June 26.—Porter Brothers Company sold six cars California fruit at auction to-day at the following prices: Tragedy Prunes, \$2.70 to \$2.95; Clyman Plums, 70¢ to \$1.25; Royal Hative Plums, 65¢ to \$1.05; Black Tartarian Cherries, 45¢ to \$1.55; Oregon, 35 to 50¢; Bigarreus, 35¢ to \$1.60; Royal Ann, 85¢ to \$1.65; Peaches, 50¢ to \$1.15.

SENATOR COCKEREL'S bill to promote aerial navigation authorizes the appropriation of \$100,000 for payment to any inventor from any part of the world who shall, at any time prior to the first of January, 1900, construct a vessel that will demonstrate the safety of navigating the air at a speed of thirty miles an hour, and capable of carrying passengers and freight to the extent of five tons.

The highest selling citrus fruit in the Eastern markets the past season has been the Pomeo (grape-fruit), bringing \$5, \$7 and even \$11 per box. The trees may be planted in July and some fine ones can be gotten of J. H. Cammook, East Whittier Nurseries, Whittier, Cal.

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RUPTURE.

It has been considered by the medical profession that hernia—commonly called rupture—was incurable, except by surgical operation, which is both dangerous to life and very rarely ever successful. But Dr. J. C. Anthony of 86 & 87 Chornicle Building, has opened a new field for research, and for the past year has been making some remarkable cures. He causes the patient no pain and those living near enough do not lose any time only while in his office once or twice weekly. He guarantees every case he treats and does not ask a man for a dollar unless he cures him so there can be no chance of any one being cheated. The doctor is a graduate of Bellevue Hospital Medical College, of New York City.

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Growth of Invention.

It is said of Henry Renwick, the great patent expert, who was the first examiner appointed in the Patent Office at Washington, and who resigned in 1874, that he did so because he had made up his mind that comparatively few more patents would be issued; that the whole field of invention had been pretty thoroughly explored and exhausted, and that he, therefore, thought he ought to look out for some business of a more permanent kind. In commenting on this, a writer in *Cassier's Magazine* says that, at the present day, with the multitude of inventions that have cropped up, and with the host that are to follow, this early view of the subject is uniquely interesting. Experience has more than borne out the statement once uttered that one invention makes at least one additional one necessary. If an article be invented, a machine for making it must often be invented also; the building of this machine may again necessitate the employment of some special tool, for which, too, we may have to depend on inventive genius, and in this way multiplication of devices may go on to an extent little imagined in the beginning. The discovery and manufacture of kerosene for illuminating purposes, for example, are said to have been alone responsible for about 5000 different inventions which have been patented. There are similarly said to be about 3000 separate inventions for coupling railroad cars, and something like 800 for knitting machines. Other equally striking cases would no doubt be afforded by a study of the subject, but are scarcely necessary to complete the picture.

Development of Engineering Science.

Speaking of the development of engineering science in connection with the Brooklyn bridge and the projected bridge across the Hudson river at New York, Representative Geary says:

"A man learns a good many interesting things in Congress. For instance, I am on the Commerce Committee, and we have had a good deal to do with this New York bridge bill. Until the suspension bridge was built across the East river between New York and Brooklyn, it was not supposed that a steel wire could be made of sufficient tensile strength to hold together for a distance of 1600 feet. Until then, with the wire that had previously been made, a wire of that length would part of its own weight. Mr. Roebling, the engineer of the bridge, who was laughed at by other engineers for asserting that a wire of 1600 feet could be made which would hold together, experimented until he proved that his assertion was a fact. Since then the Fifth of Forth bridge has been built with wires 1700 feet long, and the making of steel cables has now reached such a degree of perfection that a wire can be made of 2100 feet and strung from one point to another without breaking. In the New York bridge bill we proposed that 2100 feet should be the lowest limit, and now we want to appoint a commission of five engineers, of whom Gen. Casey shall be one, to see if a wire of still greater length cannot be successfully made."

Man's Debt to "Beasts of Burden."

The immediate effect arising from the possession of beasts of burden is greatly to enlarge the scope and educative value of human labor. A primitive agriculture, sufficient to provide for the needs of a people, can be carried on by man's labor alone, though the resulting food supply has generally to be supplemented by the chase. Rarely, if ever, are the products of the soil thus won sufficient in quantity to be made the basis of any commerce. Such conveyance as is necessary among the people who are served by their own hands alone has to be accomplished by boat transportation or by the backs of men. The immediate effect of using beasts of burden is the introduction of some kind of plow, which spares the labor of men in delving the ground, and in the use of pack animals, which, employed in the manner of caravans, greatly promote the extension of trade. A great range of secondary influences is found in the development of the arts of war, by which people who have become provided with pack or saddle animals are able to prevail over their savage neighbors, and thus to extend the realm of a nascent civilization. Yet another influence, arising from the domestication of large beasts, arises from the fact that these creatures are important storehouses of food; their flesh spares men the labor of the chase, and so promotes those regularities of employment which lead men into civilized ways of life. In fact, by making these creatures

captive, men unintentionally subjugated themselves from their ancient savagery. They were led into systematic and forethoughtful courses, and thus found a training which they could in no other way have secured.—Prof. N. S. Shaler.

Timepieces Measuring Centuries.

Some animated and interesting conflicts of opinion have occurred between geologists in trying to ascertain how long it took the Niagara river to cut out the "gorge," which extends for six miles below the falls. One of the most modest estimates puts the time required at 6000 or 7000 years; others greatly exceed this. Such a calculation is important, chiefly for the light thus thrown on the interval which has elapsed since the glacial period; for it is admitted that the work has all been done since the retirement from that vicinity of the great ice-sheet which once forced its way down to the Ohio valley from the Arctic regions. However widely the figures regarding Niagara may differ, there is also an apparent disagreement between this and another chronometer of the same kind up in Labrador. The Grand river canyon has a length of twenty-five miles, or about four times that of the Niagara gorge. It is narrower and deeper than the chasm spanned by the suspension bridge; and so is the stream. But the rock to be eroded in Labrador is gneiss, much harder than the limestone crust and the supporting shale at Niagara. Looked at superficially, therefore, it would seem as if ten or fifteen times as many centuries were required to excavate the one as the other. And as the glacial period terminated much sooner down in the latitude of Niagara than it did up in Grand river canyon, 500 or 600 miles farther north, one is puzzled to know how it was done. However, the problem is not the less fascinating for being so complex. The comparison is worth making.

Electric Mileage of the United States.

In 1888 the entire electric railway mileage in the United States was only about 48, distributed over eight States. At the close of last year the electric railways comprised 61 per cent of the entire street railway system of the United States, this gain being at the expense of the horse and steam lines. The past year the mileage operated by horse power decreased from 4460 to 3497 miles, and that by steam 640 to 566. The total street railway mileage increased 540, but the electric mileage increased 1517 miles, showing up an extensive conversion of horse line into electric. About one-quarter of the mileage of the horse railways in the United States a year ago has been fitted for electricity. It is predicted this system will be a formidable competitor of the steam railways for suburban traffic.

How Fast the Earth Turns.

Everybody knows that the earth makes one complete revolution on its axis once every 24 hours. But few, however, have any idea of the high rate of speed necessary to accomplish that feat. The highest velocity ever attained by a cannon ball has been estimated at 1626 feet per second, which is equal to a mile in 3.2 seconds. The earth, in making one revolution in 24 hours, must turn with a velocity nearly equal to that of a cannon ball. In short, the rate of speed at the equator has been estimated at nearly 1500 feet per second, or a mile every 3.6 seconds, or 17 miles a minute.

THE water works supplying cities and towns of the United States are reported to represent an investment of \$430,000,000, nearly one-tenth as much as in railroads. The miles of water-mains in New England are nearly equal to the miles of railways. There are only 68 water works in eight Southern States, while the total number of cities and towns in the whole country supplied with water works is about 1700. Probably two-thirds of the supply is furnished by the municipalities, and the balance relies on corporate enterprise.

THE work of draining the valley of Mexico, which has been in progress of development for nearly three hundred years, will soon be completed. It has cost about ten millions of dollars and some 200,000 human lives. The canal and six-mile tunnel through the mountain range have a total length of nearly forty miles. Nine-tenths of the tunnel is finished and only some 15 per cent of the canal remains to be completed.

Dates of California Fairs and Race Meetings, Season of 1894.

Marysville.....	July 24 to July 28
Chico.....	July 31 to Aug. 4
Red Bluff.....	Aug. 7 to Aug. 11
Willows.....	Aug. 14 to Aug. 18
P. C. T. H. B. A. (Summer Meeting).....	Aug. 4 to Aug. 11
Oakland Association.....	Aug. 13 to Aug. 18
Petaluma Association.....	Aug. 20 to Aug. 25
Woodland Association.....	Aug. 27 to Sept. 1
State Fair Association.....	Sept. 3 to Sept. 15
Stockton Association.....	Sept. 17 to Sept. 24
San Jose Association.....	Sept. 24 to Sept. 29
Vallejo Association.....	Oct. 1 to Oct. 6
Fresno Association.....	Oct. 8 to Oct. 13
Santa Ana.....	Oct. 8 to Oct. 13
Los Angeles.....	Oct. 15 to Oct. 20
P. C. T. H. B. A. (Fall Meeting).....	Oct. 22 to Oct. 27
Santa Barbara.....	Sept. 17 to Sept. 22
Hueneme.....	Sept. 24 to Sept. 29
San Diego.....	Oct. 1 to Oct. 6
Salinas.....	Oct. 2 to Oct. 6
Hollister.....	Oct. 2 to Oct. 6
Modesto.....	Oct. 11 to Oct. 13
Portland (fall meeting).....	Sept. 1 to Sept. 8
Detroit Driving Park.....	July 16 to July 20
Buffalo Driving Park.....	July 31 to Aug. 10
Terre Haute.....	Aug. 13 to Aug. 18

A Note About Water.

Where does all the water in the sea come from? is a question that many a small boy has asked his father, and which many a father has found himself utterly unable to answer. Some idea of where it comes from may be gathered from a glance at the following table of the hourly quantity of water discharged into the sea annually by some of the best known rivers of the world:

River—	Million Cubic Feet per Hour.
Amazon.....	3,700
La Plata.....	3,100
Mississippi.....	2,070
Volga.....	1,120
Yukon.....	1,100
Columbia.....	1,000
Danube.....	960
Ganges.....	700
Nile.....	560

This, of course, throws the question back a step. The question becomes, where does the water in the rivers come from? When that is answered by the statement that it comes from the hills, we have gone about as far as we can go. Water is an element, and what its original source may be, no man knows.

Spiders Eat Their Mothers.

One of the most unnatural things in nature, if the expression is allowable, says *London Nature*, is the manner in which the young of the common wolf spider, found everywhere in this country, treat their mother. After the little creature has laid her eggs, she envelops them in a silken covering, so as to make a ball about the size of a pea, and this she carries about with her wherever she goes, and will defend it with her life. When the young are hatched they climb on her back, giving her a monstrous appearance, and ride about until nearly half grown, and as soon as they discover their strength they fall to and devour their mother. As a rule, the maternal relation is recognized in the animal and insect world only as long as the necessity for protection exists; but instances of the young actually devouring a parent by main force and common consent are extremely rare.

THE cylinder head of a Connecticut locomotive blew out while at full speed. The train's momentum carried it to the station five miles away without a pound of steam.

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The readers of this paper will be pleased to learn that there is at least one dreaded disease that science has been able to cure in all its stages, and that is Catarrh. Hall's Catarrh Cure is the only positive cure now known to the medical fraternity. Catarrh being a constitutional disease, requires a constitutional treatment. Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system, thereby destroying the foundation of the disease, and giving the patient strength by building up the constitution and assisting nature in doing its work. The proprietors have so much faith in its curative powers, that they offer One Hundred Dollars for any case that it fails to cure. Send for list of testimonials.

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DIVIDEND NOTICE.

The German Savings and Loan Society,
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For the half year ending June 30, 1894, a dividend has been declared at the rate of five (5) per cent per annum on Term Deposits, and four and one-sixth (4 1/6) per cent per annum on Ordinary Deposits, payable on and after MONDAY, July 2, 1894. GEO. TOURNY, Secretary.

The New Atlantis.

The latest idea will soon be put in tangible shape—the building of a summer hotel in the Atlantic ocean.

The exact spot in the ocean where the buildings will be erected has been selected, the soundings made and the location marked by buoys. It is off the Long Island coast, probably somewhere between Fire Island and New York, fourteen miles from the shore. Atlantis will not be built upon a sandbar, nor built over shoal water.

The chief engineer is Captain R. D. Evans, U. S. N., head of the lighthouse board. With him is J. C. McGuire, who has charge of the steel construction in Government buildings. Captain Howard Patterson, formerly of the U. S. N., formerly professor of science in Brown's College, and who was admiral of the Haytian navy, is another of the engineers.

It is said they have agreed to put down the foundations under a forfeit of \$1,000,000. This convinced those who hesitated about putting money into the scheme. The structure will rest upon cylinders. Atlantis will include a number of structures, of which but one will be built this year. It will be a great pavilion, constructed in the form of a square, two stories high in the main and three in the towers, and will rest upon large iron cylinders, filled and sunk in Portland cement.

The main floor will be thirty feet above the water, and the Roman order of architecture will predominate.

The edifice will be built entirely of steel, iron, glass and tiles, thus making it entirely fireproof. Within will be a grand amphitheatre. It is calculated that the lower floor will accommodate 10,000 people, while the gallery will hold 7000 more. There is also provision for a spacious esplanade, or roof garden, seating 3000. There will be 120 large rooms for hotel accommodation, a cafe, restaurant, billiard room and all accessories of that sort. Then there is the anglers' pavilion, which ought to increase the popularity, because the structure will be located in the midst of the fishing grounds. The promoters of the enterprise say it offers all the advantages of a sea voyage without the discomforts of sea-sickness. It is promised that it will be within two hours' sail of New York. It is expected that the building will be opened before the summer is over.

Weight of a Crowd.

In a paper by Professor Kernot, read before the Victorian Institute, he compared the various estimates as to the weight per square foot of a crowd. One estimate, quoted as French practice by Stoney and Trautwine, gives 41 pounds per square foot of a crowd. Hatfield, in "Transverse Strains," gives 70 pounds; Mr. Page, engineer to Chelsea bridge, 84 pounds; Mr. Nash, architect to Buckingham Palace, quoted by Tredgold, 120 pounds; W. N. Kernot, at Working Men's College, Melbourne, gives the weight at 126 pounds; Prof. W. C. Kernot, at Melbourne University, puts it at 143 1 pounds, and Stoney, in his work on "Stresses," as 147.4 pounds per square foot. The space occupied by soldiers, as taken by Hatfield in his estimate, is not the same as a crowd. Soldiers are arranged in lines at a distance apart to allow room for knapsacks and other accouterments; but a crowd is forced together into close contact, an average man in a crowd occupying a space of little if any more than one square foot. On the whole, Prof. Kernot inclines to favor Mr. Stoney's estimate of little more than one man per square foot, and gives it as approved that a dense crowd of well-grown men weighs between 140 and 150 pounds to the square foot.

Angelina (anxiously)—Are you sure, dear, that you don't regret it, and that you don't sometimes miss your life as a bachelor? Edwin (with cheerful conviction)—Not at all. I tell you what, Angy, I miss it so little that if I was to lose you—a—I'm blessed if I wouldn't marry again.

Mother—Why don't you study harder, and get into a higher class? Tommy—Don't want to get into a higher class. Mother—Why not? Tommy—'Cos I kin lick everybody in my class, an' if I git higher, everybody in de udder class'll be able to lick me—see?

THE largest dammed body of water in the world will be secured by the building of a dam at Cloquet, Minn., on the St. Louis river, 900 feet long and 80 feet high, by which back water will be extended 60 miles.

A Lansingburg Miracle.

A RAILWAY MAN TALKS.

Literally Half Dead, His Case Pronounced Hopeless by Prominent Physicians, A Story of Surpassing Interest Verified Under Oath.

[From Troy, N. Y., Times.]

I am the most conservative reporter on the staff. I despise the chimerical, I court the real. I burrow in facts. I am from Lansingburg. We don't often get a good thing from there, but here is one. F. C. Kimball last night gave me the following:

"I am a plain, straightforward man. Originally from Lansingburg, where now reside my mother, brother and sister. Several years ago I moved to Rochester. There I was in the employ of the Erie Railroad as yard and freight superintendent. After a strain to my back, caused by heavy lifting, three years ago, I developed so-called rheumatism. It was an increasing thing for two years,—at times worse, again better. I worked intermittently. If I would shut my eyes I would fall down. My feet and legs soon lost feeling—were numb. This extended to my stomach and at times to my hands. Doctors Lee and Spencer of Rochester finally pronounced my case progressive locomotor ataxia, said it was incurable, and that they could only ease my sufferings, and so I lay. Up to this time I had been sick nearly two years. Before this and for several months I was confined to my bed. Pins stuck into my limbs the full length gave me no feeling whatever; my legs seemed wooden. To pound them gave off a noise like wood. So I say, as I lay there I was absolutely one-half dead—dead from the waist down. There was one word written in large characters all over that sick room—C-L-A-Y. Life departed from my limbs, that word best expressed what was left. You, of course, have read of John Marshall. The reporter, in describing him, described me exactly. I sent for the remedy which cured him,—for Dr. Williams' Pink Pills, to Schenectady, N. Y., and tried them. I took them irregularly for two months. They didn't seem to help. All of a sudden one morning one of my legs began to prickle—seemed as though rubbed with nettles. Then, perhaps, you think I did not investigate that medicine. I began to mend fast; got some circulation, got control of my bowels, and after a few weeks got out of bed and tried to stand. At last I fetched it. Could walk—now can run. And Pink Pills cured me. The doctors said I couldn't be cured, but I am. What I am now telling you is merely a reiteration of what I long ago wrote to the Dr. Williams' Medicine Company at Schenectady, and my affidavit to the same is now in their hands. Here, also, is a letter which my mother wrote to them, and to which she has made affidavit, as you see."

186 Second Ave., LANSINGBURG, N. Y.

Dear Sirs:—My son Fred has just written you a letter concerning himself, to which I desire to add a few words in entire corroboration of all he has said. He has told you of his agony and his cure. The remembrance of the whole thing makes me shudder as I think of it. It is all too wonderful for me. I was resigned to his fate. Now as I look at him walking about and feeling well, with his old health and ambition returned, it does seem that he has been born again and rescued from death for a fact. Could I, therefore, say too much to you of thanks in the fullness of my gratitude? Can I well cease blessing you? Yet the intensity of my feelings make my words of thanksgiving to you seem empty indeed; for the lost is found, and he that was dead is alive again. Yours,

HARRIET J. KIMBALL.

Sworn and subscribed before me this 6th day of April, 1893.

M. L. FANCHER,

Notary Public.

Mrs. Kimball said: "While I believe in answers to prayer, and prayed earnestly for his recovery, for I am a Christian woman, and believe my prayers were answered, I do think Pink Pills were the means the Lord used to effect my son's cure. I want you to meet my daughter, Mrs. G. H. Morrison, with whom we are living here, and the Rev. George Fairlee, pastor of Westminster Church, who lives with us, and hear what they have to say." So Mrs. Kimball brought them in, and while the story as told was most complete and could be added to by nothing they might say, yet the reporter heard from the lips of the sister and their pastor, corroborative words of all that has been said. The reporter also ran across the son-in-law, Mr. G. H. Morrison, cashier of the National Bank of Troy, and spoke to him of Mr. Kimball. He is a busy man, and though he could only be detained for a moment, he said: "I know nothing of the case technically. He says he was cured by Dr. Williams' Pink Pills, and I think that is about the size of it."

Mr. William H. Flandreau, the druggist at 814 River St., Troy, said: "It is the most wonderful cure from locomotor ataxia—a so-called incurable disease. Mr. Kimball tells me he owes his recovery to Pink Pills entirely, and I have every reason to believe him."

Pink Pills restore pale people and sallow complexions to the glow of health, and are a specific for all the troubles peculiar to the female sex, while in the case of men they effect a radical

cure in all cases arising from mental worry, overwork or excesses of whatever nature.

These Pills are manufactured by the Dr. Williams' Medicine Company, Schenectady, N. Y., and Brockville, Ont., and are sold in boxes (never in loose form by the dozen or hundred, and the public are cautioned against numerous imitations sold in this shape) at 50 cents a box, or six boxes for \$2.50, and may be had of all druggists or direct by mail from Dr. Williams' Medicine Company from either address.

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Reported by Dewey & Co., Pioneer Patent Solicitors for Pacific Coast, 220 Market St., S. F.

FOR THE WEEK ENDING JUNE 12, 1894.

- 521,228.—MUSICAL INSTRUMENT—C. L. G. Bech, Bellevue, Wash.
- 521,201.—LAMP STOVE—F. E. Browne, Los Angeles, Cal.
- 521,260.—ELECTRICAL BATTERY—Dubeo & Mohrdeck, S. F.
- 521,262.—CAR COUPLING—J. D. Gooley, Portland, Or.
- 521,414.—BEVEL—J. I. Langlais, Berkeley, Cal.
- 512,378.—ANIMAL TRAP—Loomis & Harris, Watsonville, Cal.
- 521,293.—DETACHING BLOCK—G. W. Moore, Gardner, Or.
- 521,272.—CULTIVATOR—J. Schumann, Anaheim, Cal.
- 521,297.—PLASTER FEED ROLL—J. D. Sigler, S. F.
- 521,422.—TELEPHONE CALL RECORDER—W. F. Smith, S. F.

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ORANGE CULTURE IN CALIFORNIA.

Now that the interest in the culture of the orange is extending so as to embrace nearly all parts of the State, a book giving the results of experience in parts of the State where the growth of the fruit has been longest pursued will be found of wide usefulness.

"Orange Culture in California" was written by Thos. A. Garey of Los Angeles, after many years of practical experience and observation in the growth of the fruit. It is a well-printed hand-book of 227 pages, and treats of nursery practice, planting of orange orchards, cultivation and irrigation, pruning, estimates of cost of plantations, best varieties, etc.

The book is sent post-paid at the reduced price of 75 cents per copy, in cloth binding. Address DEWEY PUBLISHING CO., Publishers, 220 Market St., San Francisco.

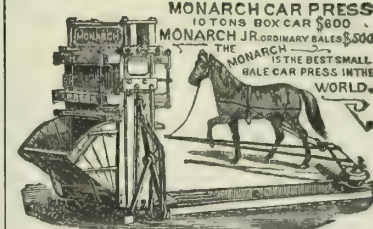
OF INTEREST TO CONSUMERS.

During these times when grain is low, fruit difficult to sell and produce of all kinds less remunerative than it has been, farmers and fruit-growers find their incomes are less than they expected, and as a result it is essential that what they use should be supplied to them at the lowest possible cost. The Pacific Coast Home Supply Association has for a number of years supplied a large number of families throughout this coast with their necessities and have been so successful in purchasing advantageously for their patrons that their business shows a constant increase, and they are still at the old stand ready to attend to the wants of the public. Other organizations of similar nature have started, and some of them have gone out of existence, while in other cases they have failed to give the best of satisfaction. This has sometimes operated to destroy confidence, but there is no question the plan of shipping direct to consumers and making the road from manufacturers to consumers as direct as possible is the most economical way of conducting business, and as a result you can obtain better goods for less money by using the Association than through any other source. Those who are not members would do well to write to headquarters for information, which will gladly be supplied, and if their representative should be in your neighborhood at any time, he will be instructed to call upon you and explain the system thoroughly.

REMEMBER, the address of this Association is 132 Market street, San Francisco, with branch houses in Los Angeles and Portland.

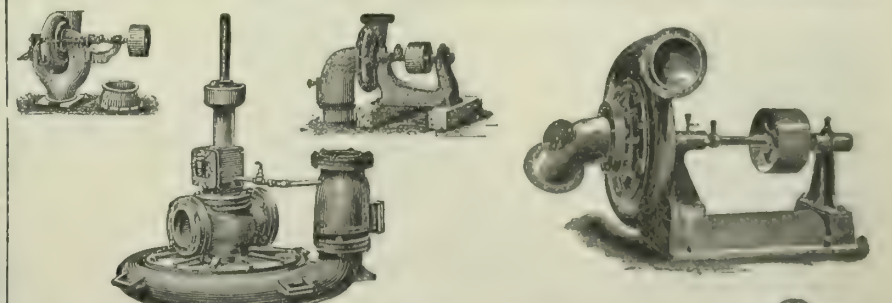
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